

2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2018)

**Madrid, Spain
1-5 October 2018**

Pages 1-606



**IEEE Catalog Number: CFP18IRO-POD
ISBN: 978-1-5386-8095-7**

**Copyright © 2018 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP18IRO-POD
ISBN (Print-On-Demand):	978-1-5386-8095-7
ISBN (Online):	978-1-5386-8094-0
ISSN:	2153-0858

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Content List of 2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)

Technical Program for Monday October 1, 2018

MoA1	Room 1.L2
WSMFD01 - Examining Sensing Modalities for Robust and Dexterous Object Manipulation, Part I (Workshop)	
Chair: Hang, Kaiyu	Yale University
09:00-11:00	MoA1.1
<i>Examining Sensing Modalities for Robust and Dexterous Object Manipulation*.</i>	
Hang, Kaiyu	Yale University
Ding, Hao	ABB Corporate Research Center Germany
Li, Miao	Wuhan University
Kragic, Danica	KTH
Dollar, Aaron	Yale University
MoA2	Room 1.L3
WSMFD02 - Task-Informed Grasping for Rigid and Deformable Object Manipulation, Part I (Workshop)	
Chair: Ghalamzan Esfahani, Amir Masoud	University of Birmingham
09:00-11:00	MoA2.1
<i>Task-Informed Grasping for Rigid and Deformable Object Manipulation*.</i>	
Ghalamzan Esfahani, Amir Masoud	University of Birmingham
Alambeigi, Farshid	Johns Hopkins University
Aghajani Pedram, Sahba	University of California, Los Angeles
Detry, Renaud	Jet Propulsion Laboratory
Santos, Veronica J.	University of California, Los Angeles
Stolkin, Rustam	University of Birmingham
MoA3	Room 4.L3
WSMFD03 - the Utility of Body, Interaction, and Self Learning in Robotics, Part I (Workshop)	
Chair: Lanillos, Pablo	Technische Universität München
09:00-11:00	MoA3.1
<i>The Utility of Body, Interaction, and Self Learning in Robotics*.</i>	
Lanillos, Pablo	Technische Universität München
Hoffmann, Matej	Faculty of Electrical Engineering, Czech Technical University in Prague
Tani, Jun	Okinawa Institute of Science and Technology
Sandini, Giulio	Italian Institute of Technology
Cheng, Gordon	Technical University of Munich
MoA4	Room 1.R3
WSMFD04 - Haptic-Enabled Shared Control of Robotic Systems: A Compromise between Teleoperation and Autonomy, Part I (Workshop)	
Chair: Cognetti, Marco	Centre National De La Recherche Scientifique (CNRS)
09:00-11:00	MoA4.1
<i>Haptic-Enabled Shared Control of Robotic Systems: A Compromise between Teleoperation and Autonomy*.</i>	
Cognetti, Marco	Centre National de la Recherche Scientifique (CNRS)

Ryu, Jee-Hwan
Korea Univ. of Tech. and Education

Prattichizzo, Domenico
University of Siena

Pacchierotti, Claudio
Centre national de la recherche scientifique (CNRS)

MoA5	Room 2.L2
WSMFD05 - Controlling Soft Robots: Model-Based vs. Model-Free Approaches, Part I (Workshop)	
Chair: Monje, Concepción A.	University Carlos III of Madrid
09:00-11:00	MoA5.1
<i>Controlling Soft Robots: Model-Based vs. Model-Free Approaches*.</i>	
Monje, Concepción A.	University Carlos III of Madrid
Ott, Christian	German Aerospace Center (DLR)
Hauser, Helmut	University of Bristol
Laschi, Cecilia	Scuola Superiore Sant'Anna

MoA6	Auditorium
WSMFD06 - towards Robots That Exhibit Manipulation Intelligence, Part I (Workshop)	
Chair: Beetz, Michael	University of Bremen
09:00-11:00	MoA6.1
<i>Towards Robots That Exhibit Manipulation Intelligence*.</i>	
Beetz, Michael	University of Bremen
Bartels, Georg	Universität Bremen
Khatib, Oussama	Stanford University
Albu-Schäffer, Alin	DLR - German Aerospace Center
Toussaint, Marc	University of Stuttgart

MoA7	Room 1.L5
WSMFD07 - Planning, Perception and Navigation for Intelligent Vehicles (PPNIV'18), Part I (Workshop)	
Chair: Martinet, Philippe	INRIA
09:00-11:00	MoA7.1
<i>10th Planning, Perception and Navigation for Intelligent Vehicles (PPNIV'18)*.</i>	
Martinet, Philippe	INRIA
Laugier, Christian	INRIA
Stiller, Christoph	Karlsruhe Institute of Technology
Nunes, Urbano	Instituto de Sistemas e Robotica
Sotelo Vázquez, Miguel Ángel	University of Alcalá

MoA8	Room 4.R1
WSMFD08 - Variable Impedance Robot Skills: Control & Learning, Part I (Workshop)	
Chair: Abu-Dakka, Fares J.	Istituto Italiano Di Tecnologia
09:00-11:00	MoA8.1
<i>Variable Impedance Robot Skills: Control & Learning*.</i>	
Abu-Dakka, Fares J.	Istituto Italiano di Tecnologia
Abderrahim, Mohamed	Carlos III University
Lee, Dongheui	Technical University of Munich
Ikeura, Ryojun	Mie University

MoA9	Room 2.R1
-------------	-----------

WSMFD09 - Language and Robotics, Part I (Workshop)	
Chair: Horii, Takato	The University of Electro-Communications
09:00-11:00	MoA9.1
<i>Language and Robotics*</i> .	
Horii, Takato	The University of Electro-Communications
Ugur, Emre	Bogazici University
Taniguchi, Tadahiro	Ritsumeikan University
Hinaut, Xavier	INRIA
Inamura, Tetsunari	National Institute of Informatics
Nagai, Takayuki	University of Electro-Communications
Spranger, Michael	Sony Computer Science Laboratories Inc.
Beetz, Michael	University of Bremen
MoA10 Room 4.L4	
WSMFD10 - Assistive Technologies for Precision Neurosurgery: Current Successes and Future Challenges, Part I (Workshop)	
Chair: Rodríguez y Baena, Fernando	Imperial College, London, UK
09:00-11:00	MoA10.1
<i>Assistive Technologies for Precision Neurosurgery: Current Successes and Future Challenges*</i> .	
Rodríguez y Baena, Fernando	Imperial College, London, UK
De Momi, Elena	Politecnico di Milano
Secoli, Riccardo	Imperial College London
MoA11 Room 4.R3	
WSMFD11 - Hands in the Real World: Connecting End-Effector Design, Sensitivity, and Behavior, Part I (Workshop)	
Chair: Stuart, Hannah	UC Berkeley
09:00-11:00	MoA11.1
<i>Hands in the Real World: Connecting End-Effector Design, Sensitivity, and Behavior*</i> .	
Stuart, Hannah	UC Berkeley
Catalano, Manuel Giuseppe	Istituto Italiano di Tecnologia
Negrello, Francesca	Istituto Italiano di Tecnologia
MoA12 Room 4.R5	
WSMFD12 - the Intelligence of Touch: Haptics, Tactile, Interaction. Building the Global Picture!, Part I (Workshop)	
Chair: Castellini, Claudio	DLR - German Aerospace Center
09:00-11:00	MoA12.1
<i>The Intelligence of Touch: Haptics, Tactile, Interaction – Building the Global Picture!*</i> .	
Castellini, Claudio	DLR - German Aerospace Center
Beckerle, Philipp	Technische Universität Darmstadt
Asfour, Tamim	Karlsruhe Institute of Technology (KIT)
MoA13 Room 2.L5 KUKA	
WSMFD13 - Closing the Loop on Human-Robot Symbiosis: Human/Robot In-The-Loop Machine Learning, Part I (Workshop)	

Chair: Shafti, Ali	Imperial College London
09:00-11:00	MoA13.1
<i>Closing the Loop on Human-Robot Symbiosis: Human/Robot In-The-Loop Machine Learning*</i> .	
Shafti, Ali	Imperial College London
Calandra, Roberto	Facebook
Deisenroth, Marc Peter	Imperial College London
Faisal, Aldo	Imperial College London

MoA14 Room 1.R4	
WSMFD14 - User-Centered Methods in Human-Robot Interaction, Part I (Workshop)	
Chair: Salvietti, Gionata	University of Siena
09:00-11:00	MoA14.1
<i>User-Centered Methods in Human-Robot Interaction*</i> .	
Salvietti, Gionata	University of Siena
Beckerle, Philipp	Technische Universität Darmstadt
Bianchi, Matteo	University of Pisa

MoA15 Room 2.R4	
WSMFD15 - Assistance and Service Robotics in a Human Environment: From Personal Mobility Aids to Rehabilitation-Oriented Robotics, Part I (Workshop)	
Chair: Babel, Marie	IRISA UMR CNRS 6074 - INRIA - INSA Rennes
09:00-11:00	MoA15.1
<i>Assistance and Service Robotics in a Human Environment: From Personal Mobility Aids to Rehabilitation-Oriented Robotics*</i> .	
Babel, Marie	IRISA UMR CNRS 6074 - INRIA - INSA Rennes
Morbidi, Fabio	Université de Picardie Jules Verne
Daney, David	Inria Bordeaux - Sud Ouest
Mohammed, Samer	University Paris Est Créteil, UPEC, France
Colas, Francis	Inria Nancy Grand Est
Amirat, Yacine	University of Paris Est Créteil (UPEC)

MoA16 Room 1.R5	
WSMFD16 - RoboAssist 2018: Wearable Robotics for Motion Assistance and Rehabilitation, Part I (Workshop)	
Chair: Mohammed, Samer	University of Paris Est Créteil - (UPEC)
09:00-11:00	MoA16.1
<i>RoboAssist 2018 - Wearable Robotics for Motion Assistance and Rehabilitation*</i> .	
Mohammed, Samer	University of Paris Est Créteil - (UPEC)
Vitiello, Nicola	Scuola Superiore Sant Anna
Moreno, Juan C.	Cajal Institute, CSIC
Walsh, Conor James	Harvard University

MoA17 Room 1.L1	
WSMFD17 - Latest Advances in Big Activity Data Sources for Robotics and New Challenges, Part I (Workshop)	
Chair: Bozcuoglu, Asil Kaan	University of Bremen
09:00-11:00	MoA17.1
<i>Latest Advances in Big Activity Data Sources for Robotics and</i>	

New Challenges*.

Bozcuoglu, Asil Kaan	University of Bremen
Asfour, Tamim	Karlsruhe Institute of Technology (KIT)
Ramirez-Amaro, Karinne	Institute for Cognitive Systems. Technische Universität München.
Cheng, Gordon	Technical University of Munich

MoA18 Room 2.L3 WSMFD18 - Modelling and Control of Dynamic Legged Locomotion: Insights from Template (Simplified) Models, Part I (Workshop)

Chair: Shahbazi Aghbelagh, Mohammad	Istituto Italiano Di Tecnologia (IIT)
-------------------------------------	---------------------------------------

09:00-11:00 MoA18.1

Modeling and Control of Dynamic Legged Locomotion: Insights from Template (Simplified) Models.*

Shahbazi Aghbelagh, Mohammad	Istituto Italiano di Tecnologia (IIT)
Geyer, Hartmut	Carnegie Mellon University
Kajita, Shuuji	National Inst. of AIST
Tsagarakis, Nikos	Istituto Italiano di Tecnologia

MoA19 Room 4.R4 WSMAM19 - Humanoid Robot Falling: Fall Detection, Damage Prevention, and Recovery Actions, Part I (Workshop)

Chair: Kanoulas, Dimitrios	Istituto Italiano Di Tecnologia
----------------------------	---------------------------------

09:00-11:00 MoA19.1

Humanoid Robot Falling: Fall Detection, Damage Prevention, and Recovery Actions.*

Kanoulas, Dimitrios	Istituto Italiano Di Tecnologia
Lee, Jinoh	Fondazione Istituto Italiano Di Tecnologia (IIT)
Kheddar, Abderrahmane	CNRS-AIST JRL (Joint Robotics Laboratory), UMI3218/CRT
Kakiuchi, Yohei	The University of Tokyo

MoA20 Room 2.R3 WSMAM20 - 1st Workshop on Proximity Perception in Robotics, Part I (Workshop)

Chair: Escalda Navarro, Stefan	Inria
--------------------------------	-------

09:00-11:00 MoA20.1

1st Workshop on Proximity Perception in Robotics.*

Escalda Navarro, Stefan	Inria
Mühlbacher-Karrer, Stephan	JOANNEUM RESEARCH Forschungsgesellschaft mbH - ROBOTICS
Zangl, Hubert	Graz University of Technology
Hein, Björn	Karlsruhe Institute of Technology (KIT)
Alagi, Hosam	Karlsruhe Institut of technology

MoA21 Room 4.R2 WSMFD22 - RoboTac: New Progress in Tactile Perception and Learning in Robotics, Part I (Workshop)

Chair: Kaboli, Mohsen	Technical University of Munich (TUM)
-----------------------	--------------------------------------

09:00-11:00 MoA21.1

RoboTac: New Progress in Tactile Perception and Learning in

Robotics*.

Kaboli, Mohsen	Technical University of Munich (TUM)
Bohg, Jeannette	Stanford University
Li, Qiang	Bielefeld University
Veiga, Filipe Fernandes	Technische Universität Darmstadt
Su, Zhe	University of Southern California
Cheng, Gordon	Technical University of Munich

MoA22 Room 2.R2 TUTMFD01 - a Hands-On Tutorial on XBotCore: A Real-Time Cross-Robot and Cross-Framework Software Architecture, Part I (Tutorial)

Chair: Muratore, Luca	Istituto Italiano Di Tecnologia
-----------------------	---------------------------------

09:00-11:00 MoA22.1

A Hands-On Tutorial on XBotCore – a Real-Time Cross-Robot and Cross-Framework Software Architecture.*

Muratore, Luca	Istituto Italiano di Tecnologia
Laurenzi, Arturo	Istituto Italiano di Tecnologia
Rigano, Giuseppe Francesco	Istituto Italiano di Tecnologia
Mingo Hoffman, Enrico	Fondazione Istituto Italiano di Tecnologia
Tsagarakis, Nikos	Istituto Italiano di Tecnologia

MoA23 Room 4.L1 TUTMAM02 - from Least Squares Regression to High-Dimensional Motion Primitives, Part I (Tutorial)

Chair: Stulp, Freek	DLR - Deutsches Zentrum Für Luft Und Raumfahrt E.V
---------------------	--

09:00-11:00 MoA23.1

From Least Squares Regression to High-Dimensional Motion Primitives.*

Stulp, Freek	DLR - Deutsches Zentrum für Luft- und Raumfahrt e.V.
Calinon, Sylvain	Idiap Research Institute
Neumann, Gerhard	University of Lincoln

MoB1 Room 1.L2 WSMFD01 - Examining Sensing Modalities for Robust and Dexterous Object Manipulation, Part II (Workshop)

Chair: Hang, Kaiyu	Yale University
--------------------	-----------------

11:30-13:30 MoB1.1

Examining Sensing Modalities for Robust and Dexterous Object Manipulation.*

Hang, Kaiyu	Yale University
Ding, Hao	ABB Corporate Research Center Germany
Li, Miao	Wuhan University
Kragic, Danica	KTH
Dollar, Aaron	Yale University

MoB2 Room 1.L3 WSMFD02 - Task-Informed Grasping for Rigid and Deformable Object Manipulation, Part II (Workshop)

Chair: Ghalamzan Esfahani, Amir Masoud	University of Birmingham
--	--------------------------

11:30-13:30 MoB2.1

Task-Informed Grasping for Rigid and Deformable Object Manipulation.*

Ghalamzan Esfahani, Amir	University of Birmingham
--------------------------	--------------------------

Masoud	
Alambeigi, Farshid	Johns Hopkins University
Aghajani Pedram, Sahba	University of California, Los Angeles
Detry, Renaud	Jet Propulsion Laboratory
Santos, Veronica J.	University of California, Los Angeles
Stolkin, Rustam	University of Birmingham

MoB3	Room 4.L3
WSMFD03 - the Utility of Body, Interaction, and Self Learning in Robotics, Part II (Workshop)	
Chair: Lanillos, Pablo	Technische Universität München

11:30-13:30	MoB3.1
-------------	--------

The Utility of Body, Interaction, and Self Learning in Robotics.*

Lanillos, Pablo	Technische Universität München
Hoffmann, Matej	Faculty of Electrical Engineering, Czech Technical University in Prague
Tani, Jun	Okinawa Institute of Science and Technology
Sandini, Giulio	Italian Institute of Technology
Cheng, Gordon	Technical University of Munich

MoB4	Room 1.R3
WSMFD04 - Haptic-Enabled Shared Control of Robotic Systems: A Compromise between Teleoperation and Autonomy, Part II (Workshop)	
Chair: Cognetti, Marco	Centre National De La Recherche Scientifique (CNRS)

11:30-13:30	MoB4.1
-------------	--------

Haptic-Enabled Shared Control of Robotic Systems: A Compromise between Teleoperation and Autonomy.*

Cognetti, Marco	Centre National de la Recherche Scientifique (CNRS)
Ryu, Jee-Hwan	Korea Univ. of Tech. and Education
Prattichizzo, Domenico	University of Siena
Pacchierotti, Claudio	Centre national de la recherche scientifique (CNRS)

MoB5	Room 2.L2
WSMFD05 - Controlling Soft Robots: Model-Based vs. Model-Free Approaches, Part II (Workshop)	
Chair: Monje, Concepción A.	University Carlos III of Madrid

11:30-13:30	MoB5.1
-------------	--------

Controlling Soft Robots: Model-Based vs. Model-Free Approaches.*

Monje, Concepción A.	University Carlos III of Madrid
Ott, Christian	German Aerospace Center (DLR)
Hauser, Helmut	University of Bristol
Laschi, Cecilia	Scuola Superiore Sant'Anna

MoB6	Auditorium
WSMFD06 - towards Robots That Exhibit Manipulation Intelligence, Part II (Workshop)	
Chair: Beetz, Michael	University of Bremen

11:30-13:30	MoB6.1
-------------	--------

Towards Robots That Exhibit Manipulation Intelligence.*

Beetz, Michael	University of Bremen
----------------	----------------------

Bartels, Georg	Universität Bremen
Khatib, Oussama	Stanford University
Albu-Schäffer, Alin	DLR - German Aerospace Center
Toussaint, Marc	University of Stuttgart

MoB7	Room 1.L5
WSMFD07 - Planning, Perception and Navigation for Intelligent Vehicles (PPNIV'18), Part II (Workshop)	
Chair: Martinet, Philippe	INRIA

11:30-13:30	MoB7.1
-------------	--------

10th Planning, Perception and Navigation for Intelligent Vehicles (PPNIV'18).*

Martinet, Philippe	INRIA
Laugier, Christian	INRIA
Stiller, Christoph	Karlsruhe Institute of Technology
Nunes, Urbano	Instituto de Sistemas e Robotica
Sotelo Vázquez, Miguel Ángel	University of Alcalá

MoB8	Room 4.R1
WSMFD08 - Variable Impedance Robot Skills: Control & Learning, Part II (Workshop)	
Chair: Abu-Dakka, Fares J.	Istituto Italiano Di Tecnologia

11:30-13:30	MoB8.1
-------------	--------

Variable Impedance Robot Skills: Control & Learning.*

Abu-Dakka, Fares J.	Istituto Italiano di Tecnologia
Abderrahim, Mohamed	Carlos III University
Lee, Dongheui	Technical University of Munich
Ikeura, Ryojun	Mie University

MoB9	Room 2.R1
WSMFD09 - Language and Robotics, Part II (Workshop)	
Chair: Horii, Takato	The University of Electro-Communications

11:30-13:30	MoB9.1
-------------	--------

Language and Robotics.*

Horii, Takato	The University of Electro-Communications
Ugur, Emre	Bogazici University
Taniguchi, Tadahi	Ritsumeikan University
Hinaut, Xavier	INRIA
Inamura, Tetsunari	National Institute of Informatics
Nagai, Takayuki	University of Electro-Communications
Spranger, Michael	Sony Computer Science Laboratories Inc.
Beetz, Michael	University of Bremen

MoB10	Room 4.L4
WSMFD10 - Assistive Technologies for Precision Neurosurgery: Current Successes and Future Challenges, Part II (Workshop)	
Chair: Rodriguez y Baena, Fernando	Imperial College, London, UK

11:30-13:30	MoB10.1
-------------	---------

Assistive Technologies for Precision Neurosurgery: Current Successes and Future Challenges.*

Rodriguez y Baena, Fernando	Imperial College, London, UK
-----------------------------	------------------------------

De Momi, Elena
Secoli, Riccardo

Politecnico di Milano
Imperial College London

MoB11	Room 4.R3
WSMFD11 - Hands in the Real World: Connecting End-Effector Design, Sensitivity, and Behavior, Part II (Workshop)	
Chair: Stuart, Hannah	UC Berkeley
11:30-13:30	MoB11.1
<i>Hands in the Real World: Connecting End-Effector Design, Sensitivity, and Behavior*.</i>	
Stuart, Hannah	UC Berkeley
Catalano, Manuel Giuseppe	Istituto Italiano di Tecnologia
Negrello, Francesca	Istituto Italiano di Tecnologia

MoB12	Room 4.R5
WSMFD12 - the Intelligence of Touch: Haptics, Tactile, Interaction. Building the Global Picture!, Part II (Workshop)	
Chair: Castellini, Claudio	DLR - German Aerospace Center
11:30-13:30	MoB12.1
<i>The Intelligence of Touch: Haptics, Tactile, Interaction – Building the Global Picture!*</i>	
Castellini, Claudio	DLR - German Aerospace Center
Beckerle, Philipp	Technische Universität Darmstadt
Asfour, Tamim	Karlsruhe Institute of Technology (KIT)

MoB13	Room 2.L5 KUKA
WSMFD13 - Closing the Loop on Human-Robot Symbiosis: Human/Robot In-The-Loop Machine Learning, Part II (Workshop)	
Chair: Shafti, Ali	Imperial College London
11:30-13:30	MoB13.1
<i>Closing the Loop on Human-Robot Symbiosis: Human/Robot In-The-Loop Machine Learning*.</i>	
Shafti, Ali	Imperial College London
Calandra, Roberto	Facebook
Deisenroth, Marc Peter	Imperial College London
Faisal, Aldo	Imperial College London

MoB14	Room 1.R4
WSMFD14 - User-Centered Methods in Human-Robot Interaction, Part II (Workshop)	
Chair: Salvietti, Gionata	University of Siena
11:30-13:30	MoB14.1
<i>User-Centered Methods in Human-Robot Interaction*.</i>	
Salvietti, Gionata	University of Siena
Beckerle, Philipp	Technische Universität Darmstadt
Bianchi, Matteo	University of Pisa

MoB15	Room 2.R4
WSMFD15 - Assistance and Service Robotics in a Human Environment: From Personal Mobility Aids to Rehabilitation-Oriented Robotics, Part II (Workshop)	
Chair: Babel, Marie	IRISA UMR CNRS 6074 - INRIA - INSA Rennes
11:30-13:30	MoB15.1

Assistance and Service Robotics in a Human Environment: From Personal Mobility Aids to Rehabilitation-Oriented Robotics.*

Babel, Marie	IRISA UMR CNRS 6074 - INRIA - INSA Rennes
Morbidi, Fabio	Université de Picardie Jules Verne
Daney, David	Inria Bordeaux - Sud Ouest
Mohammed, Samer	University Paris Est Créteil, UPEC, France
Colas, Francis	Inria Nancy Grand Est
Amirat, Yacine	University of Paris Est Créteil (UPEC)

MoB16	Room 1.R5
WSMFD16 - RoboAssist 2018: Wearable Robotics for Motion Assistance and Rehabilitation, Part II (Workshop)	
Chair: Mohammed, Samer	University of Paris Est Créteil - (UPEC)
11:30-13:30	MoB16.1
<i>RoboAssist 2018 - Wearable Robotics for Motion Assistance and Rehabilitation*.</i>	
Mohammed, Samer	University of Paris Est Créteil - (UPEC)
Vitiello, Nicola	Scuola Superiore Sant Anna
Moreno, Juan C.	Cajal Institute, CSIC
Walsh, Conor James	Harvard University

MoB17	Room 1.L1
WSMFD17 - Latest Advances in Big Activity Data Sources for Robotics and New Challenges, Part II (Workshop)	
Chair: Bozcuoglu, Asil Kaan	University of Bremen
11:30-13:30	MoB17.1
<i>Latest Advances in Big Activity Data Sources for Robotics and New Challenges*.</i>	
Bozcuoglu, Asil Kaan	University of Bremen
Asfour, Tamim	Karlsruhe Institute of Technology (KIT)
Ramirez-Amaro, Karinne	Institute for Cognitive Systems. Technische Universität München.
Cheng, Gordon	Technical University of Munich

MoB18	Room 2.L3
WSMFD18 - Modelling and Control of Dynamic Legged Locomotion: Insights from Template (Simplified) Models, Part II (Workshop)	
Chair: Shahbazi Aghbelagh, Mohammad	Istituto Italiano Di Tecnologia (IIT)
11:30-13:30	MoB18.1
<i>Modeling and Control of Dynamic Legged Locomotion: Insights from Template (Simplified) Models*.</i>	
Shahbazi Aghbelagh, Mohammad	Istituto Italiano di Tecnologia (IIT)
Geyer, Hartmut	Carnegie Mellon University
Kajita, Shuuji	National Inst. of AIST
Tsagarakis, Nikos	Istituto Italiano di Tecnologia

MoB19	Room 4.R4
WSMAM19 - Humanoid Robot Falling: Fall Detection, Damage Prevention, and Recovery Actions, Part II (Workshop)	
Chair: Kanoulas, Dimitrios	Istituto Italiano Di Tecnologia

11:30-13:30	MoB19.1
<i>Humanoid Robot Falling: Fall Detection, Damage Prevention, and Recovery Actions*</i> .	
Kanoulas, Dimitrios	Istituto Italiano Di Tecnologia
Lee, Jinoh	Fondazione Istituto Italiano di Tecnologia (IIT)
Kheddar, Abderrahmane	CNRS-AIST JRL (Joint Robotics Laboratory), UMI3218/CRT
Kakiuchi, Yohei	The University of Tokyo

MoB20	Room 2.R3
WSMAM20 - 1st Workshop on Proximity Perception in Robotics, Part II (Workshop)	

Chair: Escaida Navarro, Stefan	Inria
--------------------------------	-------

11:30-13:30	MoB20.1
<i>1st Workshop on Proximity Perception in Robotics*</i> .	
Escaida Navarro, Stefan	Inria
Mühlbacher-Karrer, Stephan	JOANNEUM RESEARCH Forschungsgesellschaft mbH - ROBOTICS
Zangl, Hubert	Graz University of Technology
Hein, Björn	Karlsruhe Institute of Technology (KIT)
Alagi, Hosam	Karlsruhe Institut of technology

MoB21	Room 4.R2
WSMFD22 - RoboTac: New Progress in Tactile Perception and Learning in Robotics, Part II (Workshop)	

Chair: Kaboli, Mohsen	Technical University of Munich (TUM)
-----------------------	--------------------------------------

11:30-13:30	MoB21.1
<i>RoboTac: New Progress in Tactile Perception and Learning in Robotics*</i> .	
Kaboli, Mohsen	Technical University of Munich (TUM)
Bohg, Jeannette	Stanford University
Li, Qiang	Bielefeld University
Veiga, Filipe Fernandes	Technische Universität Darmstadt
Su, Zhe	University of Southern California
Cheng, Gordon	Technical University of Munich

MoB22	Room 2.R2
TUTMFD01 - a Hands-On Tutorial on XBotCore: A Real-Time Cross-Robot and Cross-Framework Software Architecture, Part II (Tutorial)	

Chair: Muratore, Luca	Istituto Italiano Di Tecnologia
-----------------------	---------------------------------

11:30-13:30	MoB22.1
<i>A Hands-On Tutorial on XBotCore – a Real-Time Cross-Robot and Cross-Framework Software Architecture*</i> .	
Muratore, Luca	Istituto Italiano di Tecnologia
Laurenzi, Arturo	Istituto Italiano di Tecnologia
Rigano, Giuseppe Francesco	Istituto Italiano di Tecnologia
Mingo Hoffman, Enrico	Fondazione Istituto Italiano di Tecnologia
Tsagarakis, Nikos	Istituto Italiano di Tecnologia

MoB23	Room 4.L1
TUTMAM02 - from Least Squares Regression to High-Dimensional Motion Primitives, Part II (Tutorial)	

Chair: Stulp, Freek	DLR - Deutsches Zentrum Für Luft Und Raumfahrt E.V
---------------------	--

11:30-13:30	MoB23.1
<i>From Least Squares Regression to High-Dimensional Motion Primitives*</i> .	

Stulp, Freek	DLR - Deutsches Zentrum für Luft- und Raumfahrt e.V.
Calinon, Sylvain	Idiap Research Institute
Neumann, Gerhard	University of Lincoln

MoC1	Room 1.L2
WSMFD01 - Examining Sensing Modalities for Robust and Dexterous Object Manipulation, Part III (Workshop)	

Chair: Hang, Kaiyu	Yale University
--------------------	-----------------

14:30-16:30	MoC1.1
<i>Examining Sensing Modalities for Robust and Dexterous Object Manipulation*</i> .	

Hang, Kaiyu	Yale University
Ding, Hao	ABB Corporate Research Center Germany
Li, Miao	Wuhan University
Kragic, Danica	KTH
Dollar, Aaron	Yale University

MoC2	Room 1.L3
WSMFD02 - Task-Informed Grasping for Rigid and Deformable Object Manipulation, Part III (Workshop)	

Chair: Ghalamzan Esfahani, Amir Masoud	University of Birmingham
--	--------------------------

14:30-16:30	MoC2.1
<i>Task-Informed Grasping for Rigid and Deformable Object Manipulation*</i> .	

Ghalamzan Esfahani, Amir Masoud	University of Birmingham
Alambeigi, Farshid	Johns Hopkins University
Aghajani Pedram, Sahba	University of California, Los Angeles
Detry, Renaud	Jet Propulsion Laboratory
Santos, Veronica J.	University of California, Los Angeles
Stolkin, Rustam	University of Birmingham

MoC3	Room 4.L3
WSMFD03 - the Utility of Body, Interaction, and Self Learning in Robotics, Part III (Workshop)	

Chair: Lanillos, Pablo	Technische Universität München
------------------------	--------------------------------

14:30-16:30	MoC3.1
<i>The Utility of Body, Interaction, and Self Learning in Robotics*</i> .	

Lanillos, Pablo	Technische Universität München
Hoffmann, Matej	Faculty of Electrical Engineering, Czech Technical University in Prague
Tani, Jun	Okinawa Institute of Science and Technology
Sandini, Giulio	Italian Institute of Technology
Cheng, Gordon	Technical University of Munich

MoC4	Room 1.R3
WSMFD04 - Haptic-Enabled Shared Control of Robotic Systems: A Compromise between Teleoperation and Autonomy, Part III (Workshop)	

Chair: Cognetti, Marco	Centre National De La Recherche Scientifique (CNRS)
14:30-16:30	MoC4.1
<i>Haptic-Enabled Shared Control of Robotic Systems: A Compromise between Teleoperation and Autonomy*.</i>	
Cognetti, Marco	Centre National de la Recherche Scientifique (CNRS)
Ryu, Jee-Hwan	Korea Univ. of Tech. and Education
Prattichizzo, Domenico	University of Siena
Pacchierotti, Claudio	Centre national de la recherche scientifique (CNRS)
MoC5	Room 2.L2
WSMFD05 - Controlling Soft Robots: Model-Based vs. Model-Free Approaches, Part III (Workshop)	
Chair: Monje, Concepción A.	University Carlos III of Madrid
14:30-16:30	MoC5.1
<i>Controlling Soft Robots: Model-Based vs. Model-Free Approaches*.</i>	
Monje, Concepción A.	University Carlos III of Madrid
Ott, Christian	German Aerospace Center (DLR)
Hauser, Helmut	University of Bristol
Laschi, Cecilia	Scuola Superiore Sant'Anna
MoC6	Auditorium
WSMFD06 - towards Robots That Exhibit Manipulation Intelligence, Part III (Workshop)	
Chair: Beetz, Michael	University of Bremen
14:30-16:30	MoC6.1
<i>Towards Robots That Exhibit Manipulation Intelligence*.</i>	
Beetz, Michael	University of Bremen
Bartels, Georg	Universität Bremen
Khatib, Oussama	Stanford University
Albu-Schäffer, Alin	DLR - German Aerospace Center
Toussaint, Marc	University of Stuttgart
MoC7	Room 1.L5
WSMFD07 - Planning, Perception and Navigation for Intelligent Vehicles (PPNIV'18), Part III (Workshop)	
Chair: Martinet, Philippe	INRIA
14:30-16:30	MoC7.1
<i>10th Planning, Perception and Navigation for Intelligent Vehicles (PPNIV'18)*.</i>	
Martinet, Philippe	INRIA
Laugier, Christian	INRIA
Stiller, Christoph	Karlsruhe Institute of Technology
Nunes, Urbano	Instituto de Sistemas e Robotica
Sotelo Vázquez, Miguel Ángel	University of Alcalá
MoC8	Room 4.R1
WSMFD08 - Variable Impedance Robot Skills: Control & Learning, Part III (Workshop)	
Chair: Abu-Dakka, Fares J.	Istituto Italiano Di Tecnologia
14:30-16:30	MoC8.1
<i>Variable Impedance Robot Skills: Control & Learning*.</i>	
Abu-Dakka, Fares J.	Istituto Italiano di Tecnologia

Abderrahim, Mohamed	Carlos III University
Lee, Dongheui	Technical University of Munich
Ikeura, Ryojun	Mie University
MoC9	Room 2.R1
WSMFD09 - Language and Robotics, Part III (Workshop)	
Chair: Horii, Takato	The University of Electro-Communications
14:30-16:30	MoC9.1
<i>Language and Robotics*.</i>	
Horii, Takato	The University of Electro-Communications
Ugur, Emre	Bogazici University
Taniguchi, Tadahiro	Ritsumeikan University
Hinaut, Xavier	INRIA
Inamura, Tetsunari	National Institute of Informatics
Nagai, Takayuki	University of Electro-Communications
Spranger, Michael	Sony Computer Science Laboratories Inc.
Beetz, Michael	University of Bremen
MoC10	Room 4.L4
WSMFD10 - Assistive Technologies for Precision Neurosurgery: Current Successes and Future Challenges, Part III (Workshop)	
Chair: Rodriguez y Baena, Fernando	Imperial College, London, UK
14:30-16:30	MoC10.1
<i>Assistive Technologies for Precision Neurosurgery: Current Successes and Future Challenges*.</i>	
Rodriguez y Baena, Fernando	Imperial College, London, UK
De Momi, Elena	Politecnico di Milano
Secoli, Riccardo	Imperial College London
MoC11	Room 4.R3
WSMFD11 - Hands in the Real World: Connecting End-Effector Design, Sensitivity, and Behavior, Part III (Workshop)	
Chair: Stuart, Hannah	UC Berkeley
14:30-16:30	MoC11.1
<i>Hands in the Real World: Connecting End-Effector Design, Sensitivity, and Behavior*.</i>	
Stuart, Hannah	UC Berkeley
Catalano, Manuel Giuseppe	Istituto Italiano di Tecnologia
Negrello, Francesca	Istituto Italiano di Tecnologia
MoC12	Room 4.R5
WSMFD12 - the Intelligence of Touch: Haptics, Tactile, Interaction. Building the Global Picture!, Part III (Workshop)	
Chair: Castellini, Claudio	DLR - German Aerospace Center
14:30-16:30	MoC12.1
<i>The Intelligence of Touch: Haptics, Tactile, Interaction – Building the Global Picture!*</i>	
Castellini, Claudio	DLR - German Aerospace Center
Beckerle, Philipp	Technische Universität Darmstadt
Asfour, Tamim	Karlsruhe Institute of Technology (KIT)

MoC13	Room 2.L5 KUKA
WSMFD13 - Closing the Loop on Human-Robot Symbiosis: Human/Robot In-The-Loop Machine Learning, Part III (Workshop)	
Chair: Shafti, Ali	Imperial College London
14:30-16:30	MoC13.1
<i>Closing the Loop on Human-Robot Symbiosis: Human/Robot In-The-Loop Machine Learning*.</i>	
Shafti, Ali	Imperial College London
Calandra, Roberto	Facebook
Deisenroth, Marc Peter	Imperial College London
Faisal, Aldo	Imperial College London

MoC14	Room 1.R4
WSMFD14 - User-Centered Methods in Human-Robot Interaction, Part III (Workshop)	
Chair: Salvietti, Gionata	University of Siena
14:30-16:30	MoC14.1
<i>User-Centered Methods in Human-Robot Interaction*.</i>	
Salvietti, Gionata	University of Siena
Beckerle, Philipp	Technische Universität Darmstadt
Bianchi, Matteo	University of Pisa

MoC15	Room 2.R4
WSMFD15 - Assistance and Service Robotics in a Human Environment: From Personal Mobility Aids to Rehabilitation-Oriented Robotics, Part III (Workshop)	
Chair: Babel, Marie	IRISA UMR CNRS 6074 - INRIA - INSA Rennes
14:30-16:30	MoC15.1
<i>Assistance and Service Robotics in a Human Environment: From Personal Mobility Aids to Rehabilitation-Oriented Robotics*.</i>	
Babel, Marie	IRISA UMR CNRS 6074 - INRIA - INSA Rennes
Morbidi, Fabio	Université de Picardie Jules Verne
Daney, David	Inria Bordeaux - Sud Ouest
Mohammed, Samer	University Paris Est Créteil, UPEC, France
Colas, Francis	Inria Nancy Grand Est
Amirat, Yacine	University of Paris Est Créteil (UPEC)

MoC16	Room 1.R5
WSMFD16 - RoboAssist 2018: Wearable Robotics for Motion Assistance and Rehabilitation, Part III (Workshop)	
Chair: Mohammed, Samer	University of Paris Est Créteil - (UPEC)
14:30-16:30	MoC16.1
<i>RoboAssist 2018 - Wearable Robotics for Motion Assistance and Rehabilitation*.</i>	
Mohammed, Samer	University of Paris Est Créteil - (UPEC)
Vitiello, Nicola	Scuola Superiore Sant Anna
Moreno, Juan C.	Cajal Institute, CSIC
Walsh, Conor James	Harvard University

MoC17	Room 1.L1
--------------	-----------

WSMFD17 - Latest Advances in Big Activity Data Sources for Robotics and New Challenges, Part III (Workshop)	
Chair: Bozcuoglu, Asil Kaan	University of Bremen
14:30-16:30	MoC17.1
<i>Latest Advances in Big Activity Data Sources for Robotics and New Challenges*.</i>	
Bozcuoglu, Asil Kaan	University of Bremen
Asfour, Tamim	Karlsruhe Institute of Technology (KIT)
Ramirez-Amaro, Karinne	Institute for Cognitive Systems. Technische Universität München.
Cheng, Gordon	Technical University of Munich

MoC18	Room 2.L3
WSMFD18 - Modelling and Control of Dynamic Legged Locomotion: Insights from Template (Simplified) Models, Part III (Workshop)	
Chair: Shahbazi Aghbelagh, Mohammad	Istituto Italiano Di Tecnologia (IIT)
14:30-16:30	MoC18.1
<i>Modeling and Control of Dynamic Legged Locomotion: Insights from Template (Simplified) Models*.</i>	
Shahbazi Aghbelagh, Mohammad	Istituto Italiano di Tecnologia (IIT)
Geyer, Hartmut	Carnegie Mellon University
Kajita, Shuuji	National Inst. of AIST
Tsagarakis, Nikos	Istituto Italiano di Tecnologia

MoC19	Room 4.R4
TUTMPM04 - Securing Robotics with SROS2, Part I (Tutorial)	
Chair: White, Ruffin	University of California San Diego
14:30-16:30	MoC19.1
<i>Securing Robotics with SROS2*.</i>	
White, Ruffin	University of California San Diego
Caiazza, Gianluca	Ca Foscari University of Venice
Cortesi, Agostino	Università Ca' Foscari Venezia
Christensen, Henrik Iskov	UC San Diego

MoC20	Room 2.R3
WSMFD21 - from Freezing to Jostling Robots: Current Challenges and New Paradigms for Safe Robot Navigation in Dense Crowds, Part I (Workshop)	
Chair: Pettre, Julien	Inria - Irisa
14:30-16:30	MoC20.1
<i>From Freezing to Jostling Robots: Current Challenges and New Paradigms for Safe Robot Navigation in Dense Crowds*.</i>	
Pettre, Julien	INRIA - IRISA
Hayet, Jean-Bernard	CIMAT
Babel, Marie	IRISA UMR CNRS 6074 - INRIA - INSA Rennes
Salaris, Paolo	INRIA -- Sophia Antipolis
Salvini, Pericle	EPFL, Ecole Polytechnique Federale de Lausanne

MoC21	Room 4.R2
WSMFD22 - RoboTac: New Progress in Tactile Perception and Learning in Robotics, Part III (Workshop)	
Chair: Kaboli, Mohsen	Technical University of Munich

	(TUM)
14:30-16:30	MoC21.1
<i>RoboTac: New Progress in Tactile Perception and Learning in Robotics*</i> .	
Kaboli, Mohsen	Technical University of Munich (TUM)
Bohg, Jeannette	Stanford University
Li, Qiang	Bielefeld University
Veiga, Filipe Fernandes	Technische Universität Darmstadt
Su, Zhe	University of Southern California
Cheng, Gordon	Technical University of Munich

MoC22	Room 2.R2
TUTMFD01 - a Hands-On Tutorial on XBotCore: A Real-Time Cross-Robot and Cross-Framework Software Architecture, Part III (Tutorial)	
Chair: Muratore, Luca	Istituto Italiano Di Tecnologia
14:30-16:30	MoC22.1
<i>A Hands-On Tutorial on XBotCore – a Real-Time Cross-Robot and Cross-Framework Software Architecture*</i> .	
Muratore, Luca	Istituto Italiano di Tecnologia
Laurenzi, Arturo	Istituto Italiano di Tecnologia
Rigano, Giuseppe Francesco	Istituto Italiano di Tecnologia
Mingo Hoffman, Enrico	Fondazione Istituto Italiano di Tecnologia
Tsagarakis, Nikos	Istituto Italiano di Tecnologia

MoC23	Room 4.L1
TUTMPM03 - Creating and Understanding 3D Annotated Scene Meshes, Part I (Tutorial)	
Chair: Zhang, Zhiyuan	Sinagpore University of Technology and Design
14:30-16:30	MoC23.1
<i>Creating and Understanding 3D Annotated Scene Meshes*</i> .	
Zhang, Zhiyuan	Sinagpore University of Technology and Design
Hua, Binh-Son	The University of Tokyo
Nguyen, Duc Thanh	Deakin University
Yu, Lap-Fai	University of Massachusetts Boston
Yeung, Sai-Kit	Singapore University of Technology and Design
Rus, Daniela	MIT

MoD1	Room 1.L2
WSMFD01 - Examining Sensing Modalities for Robust and Dexterous Object Manipulation, Part IV (Workshop)	
Chair: Hang, Kaiyu	Yale University
17:00-19:00	MoD1.1
<i>Examining Sensing Modalities for Robust and Dexterous Object Manipulation*</i> .	
Hang, Kaiyu	Yale University
Ding, Hao	ABB Corporate Research Center Germany
Li, Miao	Wuhan University
Kragic, Danica	KTH
Dollar, Aaron	Yale University

MoD2	Room 1.L3
-------------	-----------

WSMFD02 - Task-Informed Grasping for Rigid and Deformable Object Manipulation, Part IV (Workshop)	
Chair: Ghalamzan Esfahani, Amir Masoud	University of Birmingham
17:00-19:00	MoD2.1
<i>Task-Informed Grasping for Rigid and Deformable Object Manipulation*</i> .	
Ghalamzan Esfahani, Amir Masoud	University of Birmingham
Alambeigi, Farshid	Johns Hopkins University
Aghajani Pedram, Sahba	University of California, Los Angeles
Detry, Renaud	Jet Propulsion Laboratory
Santos, Veronica J.	University of California, Los Angeles
Stolkin, Rustam	University of Birmingham

MoD3	Room 4.L3
WSMFD03 - the Utility of Body, Interaction, and Self Learning in Robotics, Part IV (Workshop)	
Chair: Lanillos, Pablo	Technische Universität München
17:00-19:00	MoD3.1
<i>The Utility of Body, Interaction, and Self Learning in Robotics*</i> .	
Lanillos, Pablo	Technische Universität München
Hoffmann, Matej	Faculty of Electrical Engineering, Czech Technical University in Prague
Tani, Jun	Okinawa Institute of Science and Technology
Sandini, Giulio	Italian Institute of Technology
Cheng, Gordon	Technical University of Munich

MoD4	Room 1.R3
WSMFD04 - Haptic-Enabled Shared Control of Robotic Systems: A Compromise between Teleoperation and Autonomy, Part IV (Workshop)	
Chair: Cognetti, Marco	Centre National De La Recherche Scientifique (CNRS)
17:00-19:00	MoD4.1
<i>Haptic-Enabled Shared Control of Robotic Systems: A Compromise between Teleoperation and Autonomy*</i> .	
Cognetti, Marco	Centre National de la Recherche Scientifique (CNRS)
Ryu, Jee-Hwan	Korea Univ. of Tech. and Education
Prattichizzo, Domenico	University of Siena
Pacchierotti, Claudio	Centre national de la recherche scientifique (CNRS)

MoD5	Room 2.L2
WSMFD05 - Controlling Soft Robots: Model-Based vs. Model-Free Approaches, Part IV (Workshop)	
Chair: Monje, Concepción A.	University Carlos III of Madrid
17:00-19:00	MoD5.1
<i>Controlling Soft Robots: Model-Based vs. Model-Free Approaches*</i> .	
Monje, Concepción A.	University Carlos III of Madrid
Ott, Christian	German Aerospace Center (DLR)
Hauser, Helmut	University of Bristol
Laschi, Cecilia	Scuola Superiore Sant'Anna

MoD6	Auditorium
WSMFD06 - towards Robots That Exhibit Manipulation Intelligence, Part IV (Workshop)	
Chair: Beetz, Michael	University of Bremen
17:00-19:00	MoD6.1
<i>Towards Robots That Exhibit Manipulation Intelligence*.</i>	
Beetz, Michael	University of Bremen
Bartels, Georg	Universität Bremen
Khatib, Oussama	Stanford University
Albu-Schäffer, Alin	DLR - German Aerospace Center
Toussaint, Marc	University of Stuttgart
MoD7	Room 1.L5
WSMFD07 - Planning, Perception and Navigation for Intelligent Vehicles (PPNIV'18), Part IV (Workshop)	
Chair: Martinet, Philippe	INRIA
17:00-19:00	MoD7.1
<i>10th Planning, Perception and Navigation for Intelligent Vehicles (PPNIV'18)*.</i>	
Martinet, Philippe	INRIA
Laugier, Christian	INRIA
Stiller, Christoph	Karlsruhe Institute of Technology
Nunes, Urbano	Instituto de Sistemas e Robotica
Sotelo Vázquez, Miguel Ángel	University of Alcalá
MoD8	Room 4.R1
WSMFD08 - Variable Impedance Robot Skills: Control & Learning, Part IV (Workshop)	
Chair: Abu-Dakka, Fares J.	Istituto Italiano Di Tecnologia
17:00-19:00	MoD8.1
<i>Variable Impedance Robot Skills: Control & Learning*.</i>	
Abu-Dakka, Fares J.	Istituto Italiano di Tecnologia
Abderrahim, Mohamed	Carlos III University
Lee, Dongheui	Technical University of Munich
Ikeura, Ryojun	Mie University
MoD9	Room 2.R1
WSMFD09 - Language and Robotics, Part IV (Workshop)	
Chair: Horii, Takato	The University of Electro-Communications
17:00-19:00	MoD9.1
<i>Language and Robotics*.</i>	
Horii, Takato	The University of Electro-Communications
Ugur, Emre	Bogazici University
Taniguchi, Tadahiro	Ritsumeikan University
Hinaut, Xavier	INRIA
Inamura, Tetsunari	National Institute of Informatics
Nagai, Takayuki	University of Electro-Communications
Spranger, Michael	Sony Computer Science Laboratories Inc.
Beetz, Michael	University of Bremen
MoD10	Room 4.L4
WSMFD10 - Assistive Technologies for Precision Neurosurgery: Current Successes and Future Challenges, Part IV (Workshop)	

Chair: Rodriguez y Baena, Fernando	Imperial College, London, UK
17:00-19:00	MoD10.1
<i>Assistive Technologies for Precision Neurosurgery: Current Successes and Future Challenges*.</i>	
Rodriguez y Baena, Fernando	Imperial College, London, UK
De Momi, Elena	Politecnico di Milano
Secoli, Riccardo	Imperial College London
MoD11	Room 4.R3
WSMFD11 - Hands in the Real World: Connecting End-Effector Design, Sensitivity, and Behavior, Part IV (Workshop)	
Chair: Stuart, Hannah	UC Berkeley
17:00-19:00	MoD11.1
<i>Hands in the Real World: Connecting End-Effector Design, Sensitivity, and Behavior*.</i>	
Stuart, Hannah	UC Berkeley
Catalano, Manuel Giuseppe	Istituto Italiano di Tecnologia
Negrello, Francesca	Istituto Italiano di Tecnologia
MoD12	Room 4.R5
WSMFD12 - the Intelligence of Touch: Haptics, Tactile, Interaction. Building the Global Picture!, Part IV (Workshop)	
Chair: Castellini, Claudio	DLR - German Aerospace Center
17:00-19:00	MoD12.1
<i>The Intelligence of Touch: Haptics, Tactile, Interaction – Building the Global Picture!*</i>	
Castellini, Claudio	DLR - German Aerospace Center
Beckerle, Philipp	Technische Universität Darmstadt
Asfour, Tamim	Karlsruhe Institute of Technology (KIT)
MoD13	Room 2.L5 KUKA
WSMFD13 - Closing the Loop on Human-Robot Symbiosis: Human/Robot In-The-Loop Machine Learning, Part IV (Workshop)	
Chair: Shafti, Ali	Imperial College London
17:00-19:00	MoD13.1
<i>Closing the Loop on Human-Robot Symbiosis: Human/Robot In-The-Loop Machine Learning*.</i>	
Shafti, Ali	Imperial College London
Calandra, Roberto	Facebook
Deisenroth, Marc Peter	Imperial College London
Faisal, Aldo	Imperial College London
MoD14	Room 1.R4
WSMFD14 - User-Centered Methods in Human-Robot Interaction, Part IV (Workshop)	
Chair: Salvietti, Gionata	University of Siena
17:00-19:00	MoD14.1
<i>User-Centered Methods in Human-Robot Interaction*.</i>	
Salvietti, Gionata	University of Siena
Beckerle, Philipp	Technische Universität Darmstadt
Bianchi, Matteo	University of Pisa

MoD15	Room 2.R4
WSMFD15 - Assistance and Service Robotics in a Human Environment: From Personal Mobility Aids to Rehabilitation-Oriented Robotics, Part IV (Workshop)	
Chair: Babel, Marie	IRISA UMR CNRS 6074 - INRIA - INSA Rennes
17:00-19:00	MoD15.1
<i>Assistance and Service Robotics in a Human Environment: From Personal Mobility Aids to Rehabilitation-Oriented Robotics*.</i>	
Babel, Marie	IRISA UMR CNRS 6074 - INRIA - INSA Rennes
Morbidi, Fabio	Université de Picardie Jules Verne
Daney, David	Inria Bordeaux - Sud Ouest
Mohammed, Samer	University Paris Est Créteil, UPEC, France
Colas, Francis	Inria Nancy Grand Est
Amirat, Yacine	University of Paris Est Créteil (UPEC)
MoD16	Room 1.R5
WSMFD16 - RoboAssist 2018: Wearable Robotics for Motion Assistance and Rehabilitation, Part IV (Workshop)	
Chair: Mohammed, Samer	University of Paris Est Créteil - (UPEC)
17:00-19:00	MoD16.1
<i>RoboAssist 2018 - Wearable Robotics for Motion Assistance and Rehabilitation*.</i>	
Mohammed, Samer	University of Paris Est Créteil - (UPEC)
Vitiello, Nicola	Scuola Superiore Sant Anna
Moreno, Juan C.	Cajal Institute, CSIC
Walsh, Conor James	Harvard University
MoD17	Room 1.L1
WSMFD17 - Latest Advances in Big Activity Data Sources for Robotics and New Challenges, Part IV (Workshop)	
Chair: Bozcuoglu, Asil Kaan	University of Bremen
17:00-19:00	MoD17.1
<i>Latest Advances in Big Activity Data Sources for Robotics and New Challenges*.</i>	
Bozcuoglu, Asil Kaan	University of Bremen
Asfour, Tamim	Karlsruhe Institute of Technology (KIT)
Ramirez-Amaro, Karinne	Institute for Cognitive Systems. Technische Universität München.
Cheng, Gordon	Technical University of Munich
MoD18	Room 2.L3
WSMFD18 - Modelling and Control of Dynamic Legged Locomotion: Insights from Template (Simplified) Models, Part IV (Workshop)	
Chair: Shahbazi Aghbelagh, Mohammad	Istituto Italiano Di Tecnologia (IIT)
17:00-19:00	MoD18.1
<i>Modeling and Control of Dynamic Legged Locomotion: Insights from Template (Simplified) Models*.</i>	
Shahbazi Aghbelagh, Mohammad	Istituto Italiano di Tecnologia (IIT)
Geyer, Hartmut	Carnegie Mellon University
Kajita, Shuuji	National Inst. of AIST

Tsagarakis, Nikos

Istituto Italiano di Tecnologia

MoD19	Room 4.R4
TUTMPM04 - Securing Robotics with SROS2, Part II (Tutorial)	
Chair: White, Ruffin	University of California San Diego
17:00-19:00	MoD19.1
<i>Securing Robotics with SROS2*.</i>	
White, Ruffin	University of California San Diego
Caiazza, Gianluca	Ca Foscari University of Venice
Cortesi, Agostino	Università Ca' Foscari Venezia
Christensen, Henrik Iskov	UC San Diego
MoD20	Room 2.R3
WSMPM21 - from Freezing to Jostling Robots: Current Challenges and New Paradigms for Safe Robot Navigation in Dense Crowds, Part II (Workshop)	
Chair: Pettre, Julien	Inria - Irisa
17:00-19:00	MoD20.1
<i>From Freezing to Jostling Robots: Current Challenges and New Paradigms for Safe Robot Navigation in Dense Crowds*.</i>	
Pettre, Julien	INRIA - IRISA
Hayet, Jean-Bernard	CIMAT
Babel, Marie	IRISA UMR CNRS 6074 - INRIA - INSA Rennes
Salaris, Paolo	INRIA -- Sophia Antipolis
Salvini, Pericle	EPFL, Ecole Polytechnique Federale de Lausanne
MoD21	Room 4.R2
WSMFD22 - RoboTac: New Progress in Tactile Perception and Learning in Robotics, Part IV (Workshop)	
Chair: Kaboli, Mohsen	Technical University of Munich (TUM)
17:00-19:00	MoD21.1
<i>RoboTac: New Progress in Tactile Perception and Learning in Robotics*.</i>	
Kaboli, Mohsen	Technical University of Munich (TUM)
Bohg, Jeannette	Stanford University
Li, Qiang	Bielefeld University
Veiga, Filipe Fernandes	Technische Universität Darmstadt
Su, Zhe	University of Southern California
Cheng, Gordon	Technical University of Munich
MoD22	Room 2.R2
TUTMFD01 - a Hands-On Tutorial on XBotCore: A Real-Time Cross-Robot and Cross-Framework Software Architecture, Part IV (Tutorial)	
Chair: Muratore, Luca	Istituto Italiano Di Tecnologia
17:00-19:00	MoD22.1
<i>A Hands-On Tutorial on XBotCore – a Real-Time Cross-Robot and Cross-Framework Software Architecture*.</i>	
Muratore, Luca	Istituto Italiano di Tecnologia
Laurenzi, Arturo	Istituto Italiano di Tecnologia
Rigano, Giuseppe Francesco	Istituto Italiano di Tecnologia
Mingo Hoffman, Enrico	Fondazione Istituto Italiano di Tecnologia
Tsagarakis, Nikos	Istituto Italiano di Tecnologia

MoD23	Room 4.L1
TUTMPM03 - Creating and Understanding 3D Annotated Scene Meshes, Part II (Tutorial)	
Chair: Zhang, Zhiyuan	Sinagpore University of Technology and Design
17:00-19:00	MoD23.1
<i>Creating and Understanding 3D Annotated Scene Meshes*</i> .	
Zhang, Zhiyuan	Sinagpore University of Technology and Design
Hua, Binh-Son	The University of Tokyo
Nguyen, Duc Thanh	Deakin University
Yu, Lap-Fai	University of Massachusetts Boston
Yeung, Sai-Kit	Singapore University of Technology and Design
Rus, Daniela	MIT

Technical Program for Tuesday October 2, 2018

TuATS1		Room 1.L5
Deep Learning I (Regular session)		
Co-Chair: Pucci, Daniele		Italian Institute of Technology
09:00-09:03		TuATS1.1
<i>Paired Recurrent Autoencoders for Bidirectional Translation between Robot Actions and Linguistic Descriptions</i> , N/A.		
Yamada, Tatsuro		Waseda University
Matsunaga, Hiroyuki		Waseda University
Ogata, Tetsuya		Waseda University
09:03-09:06		TuATS1.2
<i>Learning Context Flexible Attention Model for Long-Term Visual Place Recognition</i> , N/A.		
Chen, Zetao		ETH Zurich
Liu, Lingqiao		University of Adelaide
Sa, Inkyu		ETH Zurich
Ge, Zongyuan		Monash University
Chli, Margarita		ETH Zurich
09:06-09:09		TuATS1.3
<i>Recurrent-OctoMap: Learning State-Based Map Refinement for Long-Term Semantic Mapping with 3D-Lidar Data</i> , N/A.		
Sun, Li		University of Birmingham
Yan, Zhi		University of Technology of Belfort-Montbéliard (UTBM)
Zaganidis, Anestis		University of Lincoln
Zhao, Cheng		University of Birmingham
Duckett, Tom		University of Lincoln
09:09-09:12		TuATS1.4
<i>Distributed Perception by Collaborative Robots</i> , N/A.		
Hadidi, Ramyad		Georgia Institute of Technology
Cao, Jiashen		Georgia Institute of Technology
Woodward, Matthew		Georgia Institute of Technology
Ryoo, Michael S.		Indiana University Bloomington
Kim, Hyesoon		Georgia Institute of Technology
09:12-09:15		TuATS1.5
<i>Deep Person Detection in 2D Range Data</i> , N/A.		
Beyer, Lucas		RWTH Aachen
Hermans, Alexander		RWTH Aachen University
Linder, Timm		University of Freiburg
Arras, Kai Oliver		Bosch Research
Leibe, Bastian		RWTH Aachen University
09:15-09:18		TuATS1.6
<i>Real-Time Convolutional Networks for Depth-Based Human Pose Estimation</i> , pp. 41-47.		
Martinez-Gonzalez, Angel		EPFL, IDIAP
Villamizar, Michael		CSIC-UPC
Canevet, Olivier		Idiap Research Institute
Odobez, Jean-Marc		IDIAP
09:18-09:21		TuATS1.7
<i>Detection-Tracking for Efficient Person Analysis: The DetTA Pipeline</i> , pp. 48-53.		
Breuers, Stefan		RWTH Aachen University
Beyer, Lucas		RWTH Aachen
Rafi, Umer		RWTH Aachen University
Leibe, Bastian		RWTH Aachen University
09:21-09:24		TuATS1.8
<i>3D Human Pose Estimation on a Configurable Bed from a Pressure Image</i> , pp. 54-61.		

Clever, Henry M.	Georgia Tech
Kapusta, Ariel	Georgia Institute of Technology
Park, Daehyung	Georgia Institute of Technology
Erickson, Zackory	Georgia Institute of Technology
Chitalia, Yash	Georgia Institute of Technology
Kemp, Charlie	Georgia Institute of Technology

TuATS2		Room 2.L5 KUKA
Visual Tracking I (Regular session)		
Chair: Tombari, Federico		Technische Universität München
Co-Chair: Merino, Luis		Universidad Pablo De Olavide
09:00-09:03		TuATS2.1
<i>Estimating Metric Poses of Dynamic Objects Using Monocular Visual-Inertial Fusion</i> , pp. 62-68.		
Qiu, Kejie		The Hong Kong University of Science and Technology
Qin, Tong		Hong Kong University of Science and Technology
Xie, Hongwen		Tencent
Shen, Shaojie		Hong Kong University of Science and Technology
09:03-09:06		TuATS2.2
<i>Geometric-Based Line Segment Tracking for HDR Stereo Sequences</i> , pp. 69-74.		
Gomez-Ojeda, Ruben		University of Málaga
González-Jiménez, Javier		University of Málaga
09:06-09:09		TuATS2.3
<i>Adversarial Transfer Networks for Visual Tracking</i> , pp. 75-81.		
Liu, Lijie		Tsinghua University
Lu, Jiwen		Tsinghua University
Zhou, Jie		Tsinghua University
09:09-09:12		TuATS2.4
<i>Predicting Out-Of-View Feature Points for Model-Based Camera Pose Estimation</i> , pp. 82-88.		
Moolan-Feroze, Oliver		University of Bristol
Calway, Andrew		University of Bristol
09:12-09:15		TuATS2.5
<i>A Modular Framework for Model-Based Visual Tracking Using Edge, Texture and Depth Features</i> , pp. 89-96.		
Trinh, Souriya		Inria
Spindler, Fabien		INRIA
Marchand, Eric		Université De Rennes 1, IRISA, INRIA Rennes
Chaumette, Francois		Inria Rennes-Bretagne Atlantique
09:15-09:18		TuATS2.6
<i>FSG: A Statistical Approach to Line Detection Via Fast Segments Grouping</i> , pp. 97-102.		
Suárez Canosa, Iago		Universidad Politécnica De Madrid
Munoz, Enrique		The Graffter
Buenaposada, Jose M.		Universidad Rey Juan Carlos
Baumela, Luis		Universidad Politecnica De Madrid
09:18-09:21		TuATS2.7
<i>Optimized Contrast Enhancements to Improve Robustness of Visual Tracking in a SLAM Relocalisation Context</i> , pp. 103-108.		
Wang, Xi		INRIA Rennes, IRISA
Christie, Marc		Université De Rennes 1
Marchand, Eric		Université De Rennes 1, IRISA, INRIA Rennes

09:21-09:24	TuATS2.8
<i>Key-Frame Selection for Multi-Robot Simultaneous Localization and Tracking in Robot Soccer Field</i> , pp. 109-116.	
Fu, Wei-Kang	Department of Computer Science and Information Engineering, Nati
Lin, Kun-Li	National Taiwan University
Shih, Chi-Sheng	National Taiwan University

TuATS3	Room 1.L2
Localization and Mapping I (Regular session)	
Chair: Amigoni, Francesco	Politecnico Di Milano
Co-Chair: Choi, Hyun-Taek	Korea Institute of Oceans Science and Technology

09:00-09:03	TuATS3.1
<i>Weighted Total Least Squares Based On-Line Calibration Method for RSS Based Localization</i> , pp. 117-122.	
Kim, Jung-Hee	Korea Institute of Science and Technology
Kim, Doik	KIST

09:03-09:06	TuATS3.2
<i>LIPS: LiDAR-Inertial 3D Plane SLAM</i> , pp. 123-130.	
Geneva, Patrick	University of Delaware
Eckenhoff, Kevin	University of Delaware
Yang, Yulin	University of Delaware
Huang, Guoquan	University of Delaware

09:06-09:09	TuATS3.3
<i>Scan Similarity-Based Pose Graph Construction Method for Graph SLAM</i> , pp. 131-136.	
Yoo, Wonsok	Seoul National University
Kim, Hanjun	Automation and Systems Research Institute (ASRI), Department Of
Hong, Hyunki	Seoul National University
Lee, Beom-Hee	Seoul National University

09:09-09:12	TuATS3.4
<i>Egocentric Spatial Memory</i> , pp. 137-144.	
Zhang, Mengmi	National University of Singapore
Ma, Keng Teck	A*ai, Scai, A*star
Lim, Joo Hwee	I2R A*STAR
Yen, Shih-Cheng	National University of Singapore
Zhao, Qi	University of Minnesota
Feng, Jiashi	National University of Singapore

09:12-09:15	TuATS3.5
<i>Predicting Objective Function Change in Pose-Graph Optimization</i> , pp. 145-152.	
Bai, Fang	University of Technology, Sydney
Vidal-Calleja, Teresa A.	University of Technology Sydney
Huang, Shoudong	University of Technology, Sydney
Xiong, Rong	Zhejiang University

09:15-09:18	TuATS3.6
<i>Efficient Long-Term Mapping in Dynamic Environments</i> , pp. 153-160.	
Lazaro, Maria Teresa	Sapienza University of Rome
Capobianco, Roberto	Sapienza University of Rome
Grisetti, Giorgio	Sapienza University of Rome

09:18-09:21	TuATS3.7
<i>Localization of Classified Objects in SLAM Using Nonparametric Statistics and Clustering</i> , pp. 161-168.	

Iqbal, Asif	University of Texas at Dallas
Gans, Nicholas (Nick)	University Texas at Dallas

09:21-09:24	TuATS3.8
<i>A Distributed Vision-Based Consensus Model for Aerial-Robotic Teams</i> , pp. 169-176.	
Poiesi, Fabio	Fondazione Bruno Kessler
Cavallaro, Andrea	Queen Mary University of London

TuATS4	Room 2.L2
Humanoid Robots I (Regular session)	
Chair: Takanishi, Atsuo	Waseda University
Co-Chair: Werner, Alexander	University of Waterloo

09:00-09:03	TuATS4.1
<i>Fast Kinodynamic Bipedal Locomotion Planning with Moving Obstacles</i> , pp. 177-184.	
Ahn, Junhyeok	University of Texas at Austin
Campbell IV, Orion	University of Texas at Austin
Kim, Donghyun	University of Texas at Austin
Sentis, Luis	The University of Texas at Austin

09:03-09:06	TuATS4.2
<i>Artificial Invariant Subspace for Humanoid Robot Balancing in Locomotion</i> , pp. 185-192.	
Deng, Xiang	ETH Zurich
Lee, Daniel	Cornell Tech

09:06-09:09	TuATS4.3
<i>Passivity Analysis and Control of Humanoid Robots on Movable Ground</i> , N/A.	
Henze, Bernd	German Aerospace Center (DLR)
Balachandran, Ribin	DLR
Roa, Maximo A.	DLR - German Aerospace Center
Ott, Christian	German Aerospace Center (DLR)
Albu-Schäffer, Alin	DLR - German Aerospace Center

09:09-09:12	TuATS4.4
<i>Extended 3D Walking and Skating Motion Generation for Multiple Non-Coplanar Contacts with Anisotropic Friction: Application to Walking and Skateboarding and Roller Skating</i> , N/A.	
Takasugi, Noriaki	The University of Tokyo
Kojima, Kunio	The University of Tokyo
Sugai, Fumihito	The University of Tokyo
Nozawa, Shunichi	The University of Tokyo
Kakiuchi, Yohei	The University of Tokyo
Okada, Kei	The University of Tokyo
Inaba, Masayuki	The University of Tokyo

09:12-09:15	TuATS4.5
<i>Nonlinear State Estimation for Humanoid Robot Walking</i> , N/A	
Piperakis, Stylianos	Foundation for Research and Technology – Hellas (FORTH)
Koskinopoulou, Maria	Foundation for Research and Technology – Hellas (FORTH)
Trahanias, Panos	Foundation for Research and Technology – Hellas (FORTH)

09:15-09:18	TuATS4.6
<i>Convex Properties of Center-Of-Mass Trajectories for Locomotion Based on Divergent Component of Motion</i> , N/A.	
Mesesan, George	German Aerospace Center (DLR)

Englsberger, Johannes	DLR (German Aerospace Center)
Ott, Christian	German Aerospace Center (DLR)
Albu-Schäffer, Alin	DLR - German Aerospace Center
09:18-09:21	TuATS4.7
<i>Dynamic Bilateral Teleoperation of the Cart-Pole: A Study towards the Synchronization of Human Operator and Legged Robot, N/A.</i>	
Ramos, Joao	Massachusetts Institute of Technology
Kim, Sangbae	Massachusetts Institute of Technology
09:21-09:24	TuATS4.8
<i>Self-Synchronization and Self-Stabilization of Walking Gaits Modeled by the 3D LIP Model, N/A.</i>	
Luo, Qiuyue	Centrale Nantes
De Leon Gomez, Victor	Laboratoire Des Sciences Du Numérique De Nantes (LS2N)
Kalouguine, Anne	Softbank Robotics
Chevallereau, Christine	CNRS
Aoustin, Yannick	CNRS
TuATS5	Room 2.R3
Medical Robots I (Regular session)	
Chair: Wurdemann, Helge Arne	University College London
Co-Chair: Garcia-Aracil, Nicolas	Universidad Miguel Hernandez De Elche
09:00-09:03	TuATS5.1
<i>Classification of EEG Signals for a Hypnotrack BCI System, pp. 240-245.</i>	
Alimardani, Maryam	Tilburg University
Keshmiri, Soheil	Advanced Telecommunications Research Institute International (ATR)
Sumioka, Hidenobu	University of Tokyo
Hiraki, Kazuo	
09:03-09:06	TuATS5.2
<i>Independent Control of Multiple Degrees of Freedom Local Magnetic Actuators with Magnetic Cross-Coupling Compensation, N/A.</i>	
Scaglioni, Bruno	University of Leeds
Fornarelli, Nicola	Università Di Pisa
Garbin, Nicolo	Vanderbilt University
Menciassi, Arianna	Scuola Superiore Sant'Anna - SSSA
Valdastri, Pietro	University of Leeds
09:06-09:09	TuATS5.3
<i>Towards the Development of a Steerable and MRI-Compatible Cardiac Catheter for Atrial Fibrillation Treatment, N/A.</i>	
Sheng, Jun	Georgia Institute of Technology
Wang, Xuefeng	Georgia Institute of Technology
Dickfeld, Timm-Michael	University of Maryland Medical Center
Desai, Jaydev P.	Georgia Institute of Technology
09:09-09:12	TuATS5.4
<i>State Estimation Using the CoG Candidates for Sit-To-Stand Support System User, N/A.</i>	
Takeda, Mizuki	Tohoku University
Hirata, Yasuhisa	Tohoku University
Katayama, Takahiro	RT.WORKS

Mizuta, Yasuhide	RT.WORKS
Koujina, Atsushi	RT.WORKS
09:12-09:15	TuATS5.5
<i>Real-Time Control of Whole-Body Robot Motion and Trajectory Generation for Physiotherapeutic Juggling in VR, pp. 270-277.</i>	
Mohammadi, Pouya	Braunschweig University of Technology
Malekzadeh, Milad S.	Technical University of Braunschweig, IRP
Kodl, Jindrich	Hertie Institute for Clinical Brain Research / Centre for Integr
Mukovskiy, Albert	Hertie Institute for Clinical Brain Research, CIN, University Of
Wigand, Dennis	Bielefeld University
Giese, Martin	Hertie Institute for Clinical Brain Research / Center for Integr
Steil, Jochen J.	Technische Universität Braunschweig
09:15-09:18	TuATS5.6
<i>A Novel Fabrication of PDMS Chip Using Atmospheric Pressure Plasma Jet: Hydrophobicity Modification and Feasibility Test, pp. 278-283.</i>	
Yu, Yashen	National Chiao Tung University
Kuo, Robert	National Chiao Tung University
Wu, Mu-Chien	National Chiao Tung University
Wu, Jong-Shinn	National Chiao Tung University
Tsai, Chia-Hung Dylan	National Chiao Tung University
09:18-09:21	TuATS5.7
<i>Deep Neural Object Analysis by Interactive Auditory Exploration with a Humanoid Robot, pp. 284-289.</i>	
Eppe, Manfred	University of Hamburg
Kerzel, Matthias	Uni Hamburg
Strahl, Erik	Universität Hamburg
Wermter, Stefan	University of Hamburg
09:21-09:24	TuATS5.8
<i>Cloud Services for Robotic Nurses? Assessing Legal and Ethical Issues in the Use of Cloud Services for Healthcare Robots, pp. 290-296.</i>	
Fosch-Villaronga, Eduard	Microsoft Cloud Computing Research Center & Queen Mary Universit
Felzmann, Heike	NUI Galway, Galway, Ireland
Ramos-Montero, Maria	Ortelio Ltd., Coventry, United Kingdom
Mahler, Tobias	University of Oslo, Norway
TuATS6	Room 1.L3
Social Robots (Regular session)	
Chair: Salichs, Miguel A.	University Carlos III of Madrid
Co-Chair: Hanheide, Marc	University of Lincoln
09:00-09:03	TuATS6.1
<i>Towards Norm Realization in Institutions Mediating Human-Robot Societies, pp. 297-304.</i>	
Wasik, Alicja	EPFL
Lima, Pedro U.	Instituto Superior Técnico - Institute for Systems and Robotics
Saffiotti, Alessandro	Orebro University
Martinoli, Alcherio	EPFL
Pecora, Federico	Örebro University
Tomic, Stevan	Orebro University
09:03-09:06	TuATS6.2

Pinillos, Roberto	CARTIF
Pulido Fentanes, Jaime	University of Lincoln
Hanheide, Marc	University of Lincoln
09:06-09:09	TuATS6.3
<i>"Oh! I Am so Sorry!": Understanding User Physiological Variation While Spoiling a Game Task</i> , pp. 313-319.	
Agrigoroaie, Roxana	ENSTA-ParisTech
Cruz-Maya, Arturo	ENSTA-ParisTech
Tapus, Adriana	ENSTA-ParisTech
09:09-09:12	TuATS6.4
<i>An Extended Bayesian User Model (BUM) for Capturing Cultural Attributes with a Social Robot (I)</i> , pp. 320-325.	
Luis, Santos	University of Coimbra
Martins, Gonalo S.	University of Coimbra
Dias, Jorge	University of Coimbra
09:12-09:15	TuATS6.5
<i>Culturally Aware Planning and Execution of Robot Actions (I)</i> , pp. 326-332.	
Khaliq, Ali Abdul	Örebro University
Köckemann, Uwe	Orebro Universitet
Pecora, Federico	Örebro University
Saffiotti, Alessandro	Orebro University
Bruno, Barbara	University of Genova
Recchiuto, Carmine	University of Genova
Tommaso	
Sgorbissa, Antonio	University of Genova
Bui, Ha-Duong	Japan Advanced Institute of Science and Technology
Chong, Nak Young	Japan Advanced Inst. of Sci. and Tech
09:15-09:18	TuATS6.6
<i>Trait-Based Culture and Its Organization: Developing a Culture Enabler for Artificial Agents (I)</i> , pp. 333-338.	
Borgo, Stefano	National Research Council
Blanzieri, Enrico	University of Trento
09:18-09:21	TuATS6.7
<i>CultureNet: A Deep Learning Approach for Engagement Intensity Estimation from Face Images of Children with Autism (I)</i> , pp. 339-346.	
Rudovic, Ognjen	MIT Media Lab
Utsumi, Yuria	MIT
Lee, Jaeryoung	Chubu University
Hernandez, Javier	Massachusetts Institute of Technology
Castello Ferrer, Eduardo	MIT
Schuller, Björn	Technische Universität München
Picard, Rosalind W.	MIT Media Lab
09:21-09:24	TuATS6.8
<i>Object Assembly Guidance in Child-Robot Interaction Using RGB-D Based 3D Tracking</i> , pp. 347-354.	
Hadfield, Jack	National Technical University of Athens
Koutras, Petros	National Technical University of Athens
Efthymiou, Niki	National Technical University of Athens
Potamianos, Gerasimos	University of Thessaly
Tzafestas, Costas S.	ICCS - Inst of Communication and Computer Systems
Maragos, Petros	National Technical University of

TuATS7	Room 2.L3
Semantics I (Regular session)	
Chair: Knoll, Alois	Tech. Univ. Muenchen TUM
09:00-09:03	TuATS7.1
<i>In Pixels We Trust: From Pixel Labeling to Object Localization and Scene Categorization</i> , pp. 355-361.	
Herranz-Perdiguerro, Carlos	University of Alcalá
Redondo-Cabrera, Carolina	University of Alcalá
López-Sastre, Roberto	University of Alcalá
09:03-09:06	TuATS7.2
<i>Self-Supervised Learning of the Drivable Area for Autonomous Vehicles</i> , pp. 362-369.	
Mayr, Jakob	BMW Group
Unger, Christian	BMW Group
Tombari, Federico	Technische Universität München
09:06-09:09	TuATS7.3
<i>Reachset Conformance of Forward Dynamic Models for the Formal Analysis of Robots</i> , pp. 370-376.	
Liu, Stefan Boson	Technical University of Munich
Althoff, Matthias	Technische Universität München
09:09-09:12	TuATS7.4
<i>Timestamp Offset Calibration for an IMU-Camera System under Interval Uncertainty</i> , pp. 377-384.	
Voges, Raphael	Leibniz Universität Hannover
Wagner, Bernardo	Leibniz Universität Hannover
09:12-09:15	TuATS7.5
<i>Fast and Accurate Semantic Mapping through Geometric-Based Incremental Segmentation</i> , pp. 385-392.	
Nakajima, Yoshikatsu	Keio University
Tateno, Keisuke	Technische Universität München
Tombari, Federico	Technische Universität München
Saito, Hideo	Keio University
09:15-09:18	TuATS7.6
<i>Semantic Monocular SLAM for Highly Dynamic Environments</i> , pp. 393-400.	
Brasch, Nikolas	BMW AG
Bozic, Aljaz	Technical University Munich
Lallemant, Joé	BMW AG
Tombari, Federico	Technische Universität München
09:18-09:21	TuATS7.7
<i>Path-Following through Control Funnel Functions</i> , pp. 401-408.	
Ravanbakhsh, Hadi	University of Colorado
Aghli, Sina	University of Colorado Boulder
Heckman, Christoffer	University of Colorado at Boulder
Sankaranarayanan, Sriram	University of Colorado, Boulder
09:21-09:24	TuATS7.8
<i>Online Inference of Human Belief for Cooperative Robots</i> , pp. 409-415.	
Buehler, Moritz C.	TU Darmstadt
Weisswange, Thomas H	Honda Research Institute Europe GmbH
TuATS8	Room 2.R1
Robot Design I (Regular session)	
Co-Chair: Secoli, Riccardo	Imperial College London
09:00-09:03	TuATS8.1

An Omnidirectional Jumper with Expanded Movability Via Steering, Self-Righting and Take-Off Angle Adjustment, pp. 416-421.

Yim, Sojung	Seoul National University
Baek, Sang-Min	Seoul National University
Jung, Gwang-Pil	SeoulTech
Cho, Kyu-Jin	Seoul National University, Biorobotics Laboratory

09:03-09:06 TuATS8.2

Delineating Boundaries of Feasibility between Robot Designs, pp. 422-429.

Ghasemlou, Shervin	University of South Carolina
O'Kane, Jason	University of South Carolina
Shell, Dylan	Texas A&M University

09:06-09:09 TuATS8.3

Discrete Configuration Space Methods for Determining Modular Connector Area of Acceptance in Higher Dimensions, pp. 430-435.

Eckenstein, Nick	University of Pennsylvania
Yim, Mark	University of Pennsylvania

09:09-09:12 TuATS8.4

An Origami-Inspired Flexible Pneumatic Actuator, pp. 436-441.

Schmitt, François	ICube, University of Strasbourg
Piccin, Olivier	ICube-AVR
Barbé, Laurent	University of Strasbourg, ICUBE CNRS
Bayle, Bernard	University of Strasbourg

09:12-09:15 TuATS8.5

Design and Development of Biaxial Active Nozzle with Flexible Flow Channel for Air Floating Active Scope Camera, pp. 442-449.

Ishii, Akihiro	Tohoku University
Ambe, Yuichi	Tohoku University
Yamauchi, Yu	Tohoku University
Ando, Hisato	Tohoku University
Konyo, Masashi	Tohoku University
Tadakuma, Kenjiro	Tohoku University
Tadokoro, Satoshi	Tohoku University

09:15-09:18 TuATS8.6

Design and Implementation of Programmable Drawing Automata Based on Cam Mechanisms for Representing Spatial Trajectory, pp. 450-455.

Takahashi, Takuto	Waseda University
Okuno, Hiroshi G.	Waseda University

09:18-09:21 TuATS8.7

The Seednoid Robot Platform: Designing a Multi-Purpose Compact Robot from Continuous Evaluation and Lessons from Competitions, N/A.

Sasabuchi, Kazuhiro	University of Tokyo
Yaguchi, Hiroaki	The University of Tokyo
Nagahama, Kotaro	Shinshu University
Hori, Shintaro	The University of Tokyo
Mizohana, Hiroto	University of Tokyo
Inaba, Masayuki	The University of Tokyo

09:21-09:24 TuATS8.8

Auxetic Sleeves for Soft Actuators with Kinematically Varied Surfaces, pp. 464-471.

Sedal, Audrey	University of Michigan
Fisher, Michael	University of Michigan
Bishop-Moser, Josh	ElastoRobotics
Wineman, Alan	University of Michigan
Kota, Sridhar	University of Michigan

TuATS9 Room 4.L1

Special Session: Methods and Algorithms for Automatic Manipulation of Deformable Objects (Regular session)

Chair: Navarro-Alarcon, David	Hong Kong Polytechnic University
Co-Chair: Cherubini, Andrea	LIRMM - Université De Montpellier CNRS

09:00-09:03 TuATS9.1

A Unified Controller for Region-Reaching and Deforming of Soft Objects (I), pp. 472-478.

Wang, Zerui	The Chinese University of Hong Kong
Li, Xiang	The Chinese University of Hong Kong

Navarro-Alarcon, David	Hong Kong Polytechnic University
Liu, Yunhui	Chinese University of Hong Kong

09:03-09:06 TuATS9.2

Dual-Arm Robotic Manipulation of Flexible Cables (I), pp. 479-484.

Zhu, Jihong	LIRMM
Navarro, Benjamin	University of Orléans
Fraisse, Philippe	LIRMM
Crosnier, André	LIRMM
Cherubini, Andrea	LIRMM - Université De Montpellier CNRS

09:06-09:09 TuATS9.3

Towards Vision-Based Manipulation of Plastic Materials (I), pp. 485-490.

Cherubini, Andrea	LIRMM - Université De Montpellier CNRS
Leitner, Jurgen	Australian Centre for Robotic Vision / Queensland University Of
Ortenzi, Valerio	Queensland University of Technology / ACRV
Corke, Peter	Queensland University of Technology

09:09-09:12 TuATS9.4

Capturing Deformations of Interacting Non-Rigid Objects Using RGB-D Data (I), pp. 491-497.

Petit, Antoine	Inia
Cotin, Stephane	INRIA
Lippiello, Vincenzo	University of Naples FEDERICO II
Siciliano, Bruno	Univ. Napoli Federico II

09:12-09:15 TuATS9.5

Contact Detection and Size Estimation Using a Modular Soft Gripper with Embedded Flex Sensors (I), pp. 498-503.

Elgeneidy, Khaled	University of Lincoln
Neumann, Gerhard	University of Lincoln
Pearson, Simon	University of Lincoln
Jackson, Mike	Loughborough University
Lohse, Niels	Loughborough University, EPSRC Centre for Innovative Manufacturi

09:15-09:18 TuATS9.6

Online Shape Estimation Based on Tactile Sensing and Deformation Modeling for Robot Manipulation (I), pp. 504-511.

Sanchez, Jose Manuel	Institut Pascal, UMR 6602 - UCA/CNRS/SIGMA
Mateo, Carlos M.	University of Alicante
Corrales Ramon, Juan	Sigma-Clermont Engineering

Antonio	School
Bouzgarrou, Belhassen	Universite Blaise Pascal - IFMA
Chedli	
Mezouar, Youcef	SIGMA-Clermont
09:18-09:21	TuATS9.7
<i>Accounting for Directional Rigidity and Constraints in Control for Manipulation of Deformable Objects without Physical Simulation (I)</i> , pp. 512-519.	
Ruan, Mengyao	Mengyao Ruan
McConachie, Dale Steven	University of Michigan, Ann Arbor
Berenson, Dmitry	University of Michigan
09:21-09:24	TuATS9.8
<i>A Series Elastic Tactile Sensing Array for Tactile Exploration of Deformable and Rigid Objects (I)</i> , pp. 520-525.	
Kappassov, Zhanat	Pierre and Marie Curie University
Baimukashev, Daulet	Nazarbayev University
Adiyatov, Olzhas	Nazarbayev University
Salakchinov, Shyngys	Nazarbayev University
Massalin, Yerzhan	Nazarbayev University
Varol, Huseyin Atakan	Nazarbayev University
TuBTS1	Room 1.L5
Deep Learning II (Regular session)	
Co-Chair: Neumann, Gerhard	University of Lincoln
10:00-10:03	TuBTS1.1
<i>Learning Symbolic Representations for Planning with Parameterized Skills</i> , pp. 526-533.	
Ames, Barrett	Duke University
Thackston, Allison	Oceaneering Space Systems
Konidaris, George	Brown University
10:03-10:06	TuBTS1.2
<i>Regularizing Reinforcement Learning with State Abstraction</i> , pp. 534-539.	
Akrour, Riad	TU Darmstadt
Veiga, Filipe Fernandes	Technische Universität Darmstadt
Peters, Jan	Technische Universität Darmstadt
Neumann, Gerhard	University of Lincoln
10:06-10:09	TuBTS1.3
<i>CREaM: Condensed Real-Time Models for Depth Prediction Using Convolutional Neural Networks</i> , pp. 540-547.	
Spek, Andrew	Monash University
Dharmasiri, Thanuja	Monash University
Drummond, Tom	Monash University
10:09-10:12	TuBTS1.4
<i>Generating Adaptive Attending Behaviors Using User State Classification and Deep Reinforcement Learning</i> , pp. 548-555.	
Kohari, Yoshiki	Toyohashi University of Technology
Miura, Jun	Toyohashi University of Technology
Oishi, Shuji	National Institute of Advanced Industrial Science and Technology
10:12-10:15	TuBTS1.5
<i>A Bio-Inspired Reinforcement Learning Rule to Optimise Dynamical Neural Networks for Robot Control</i> , pp. 556-561.	
Wei, Tianqi	University of Edinburgh

Webb, Barbara	University of Edinburgh
10:15-10:18	TuBTS1.6
<i>Teaching Robots to Predict Human Motion</i> , pp. 562-567.	
Gui, Liang-Yan	Carnegie Mellon University
Zhang, Kevin	Carnegie Mellon University
Wang, Yu-Xiong	Carnegie Mellon University
Liang, Xiaodan	Carnegie Mellon University
Moura, José M. F.	Carnegie Mellon University
Veloso, Manuela	Carnegie Mellon University
10:18-10:21	TuBTS1.7
<i>Variational Autoencoder for End-To-End Control of Autonomous Driving with Novelty Detection and Training De-Biasing</i> , pp. 568-575.	
Amini, Alexander	Massachusetts Institute of Technology
Schwarting, Wilko	Massachusetts Institute of Technology (MIT)
Rosman, Guy	Massachusetts Institute of Technology
Araki, Brandon	MIT
Karaman, Sertac	Massachusetts Institute of Technology
Rus, Daniela	MIT
10:21-10:24	TuBTS1.8
<i>Virtual-To-Real-World Transfer Learning for Robots on Wilderness Trails</i> , pp. 576-582.	
Iuzzolino, Michael Louis	University of Colorado Boulder
Walker, Michael	University of Colorado Boulder
Szafir, Daniel J.	University of Colorado Boulder
TuBTS2	Room 2.L5 KUKA
Visual Tracking II (Regular session)	
Chair: Montano, Luis	Universidad De Zaragoza
Co-Chair: Ahmad, Aamir	Max Planck Institute for Intelligent Systems
10:00-10:03	TuBTS2.1
<i>Asynchronous Corner Detection and Tracking for Event Cameras in Real-Time</i> , N/A.	
Alzugaray, Ignacio	ETH Zürich
Chli, Margarita	ETH Zurich
10:03-10:06	TuBTS2.2
<i>Deep Neural Network-Based Cooperative Visual Tracking through Multiple Micro Aerial Vehicles</i> , N/A.	
Price, Eric	Max Planck Institute for Intelligent Systems
Lawless, Guilherme	Institute for Systems and Robotics, Instituto Superior Tecnico,
Ludwig, Roman	Max-Planck-Institute for Intelligent Systems
Martinović, Igor	Max Planck Institute for Intelligent Systems
Buelthoff, Heinrich H.	Max Planck Institute for Biol. Cybernetics
Black, Michael	Max Planck Institute for Intelligent Systems in Tübingen
Ahmad, Aamir	Max Planck Institute for Intelligent Systems
10:06-10:09	TuBTS2.3
<i>High-Frame-Rate Target Tracking with CNN-Based Object Recognition</i> , pp. 599-606.	
Jiang, Mingjun	Hiroshima University

Gu, Yihao	Hiroshima University
Takaki, Takeshi	Hiroshima University
Ishii, Idaku	Hiroshima University
10:09-10:12	TuBTS2.4
<i>Real-Time Edge Template Tracking Via Homography Estimation</i> , pp. 607-612.	
Qin, Xuebin	University of Alberta
He, Shida	University of Alberta
Zhang, Zichen	University of Alberta, Canada
Dehghan, Masood	University of Alberta
Jin, Jun	University of Alberta
Jagersand, Martin	University of Alberta
10:12-10:15	TuBTS2.5
<i>Robust Model-Predictive Deformation Control of a Soft Object by Using a Flexible Continuum Robot</i> , pp. 613-618.	
Ouyang, Bo	City University of Hong Kong
Mo, Hangjie	City University of HongKong
Chen, Haoyao	Harbin Institute of Technology
Liu, Yunhui	Chinese University of Hong Kong
Sun, Dong	City University of Hong Kong
10:15-10:18	TuBTS2.6
<i>Tracking Control for the Grasping of a Tumbling Satellite with a Free-Floating Robot</i> , N/A.	
Lampariello, Roberto	German Aerospace Center (DLR)
Mishra, Hrishik	German Aerospace Center (DLR)
Oumer, Nassir W.	DLR - German Aerospace Center
Schmidt, Phillip	DLR
De Stefano, Marco	DLR - German Aerospace Center
Albu-Schäffer, Alin	DLR - German Aerospace Center
10:18-10:21	TuBTS2.7
<i>Closed Form Solution for Rotation Estimation Using Photometric Spherical Moments</i> , pp. 627-634.	
Hadj-Abdelkader, Hicham	IBISC
Tahri, Omar	INSA Centre Val-De-Loire
Benseddik, Housseem-Eddine	IBISC Laboratory Evry University
10:21-10:24	TuBTS2.8
<i>City-Scale Road Audit System Using Deep Learning</i> , pp. 635-640.	
Yarram, Sudhir	IIIT Hyderabad
Varma, Girish	IIIT Hyderabad
Jawahar, C.V.	IIIT, Hyderabad
TuBTS3 Room 1.L2	
Localization and Mapping II (Regular session)	
Chair: Moon, Hyungpil	Sungkyunkwan University
Co-Chair: Sun, Li	University of Birmingham
10:00-10:03	TuBTS3.1
<i>Closed-Loop Single-Beacon Passive Acoustic Navigation for Low-Cost Autonomous Underwater Vehicles</i> , pp. 641-648.	
Rypkema, Nicholas	Massachusetts Institute of Technology
Rahardyan	Technology
Fischell, Erin Marie	Woods Hole Oceanographic Institution
Schmidt, Henrik	Massachusetts Institute of Technology
10:03-10:06	TuBTS3.2

<i>Unscented Kalman Filter on Lie Groups for Visual Inertial Odometry</i> , pp. 649-655.	
Brossard, Martin	Mines ParisTech
Bonnabel, Silvere	Mines ParisTech
Barrau, Axel	Safran
10:06-10:09	TuBTS3.3
<i>A Multi-Position Joint Particle Filtering Method for Vehicle Localization in Urban Area</i> , pp. 656-662.	
Gu, Shuxia	Zhejiang University
Xiang, Zhiyu	Zhejiang University
Zhang, Yi	Zhejiang University
Qian, Qi	Zhejiang University
10:09-10:12	TuBTS3.4
<i>Courteous Autonomous Cars</i> , pp. 663-670.	
Sun, Liting	University of California, Berkeley
Zhan, Wei	Univeristy of California, Berkeley
Tomizuka, Masayoshi	University of California
Dragan, Anca	University of California Berkeley
10:12-10:15	TuBTS3.5
<i>Joint Egomotion Estimation Using a Laser Scanner and a Monocular Camera through Relative Orientation Estimation and 1-DoF ICP</i> , pp. 671-676.	
Huang, Kaihong	University of Bonn
Stachniss, Cyrill	University of Bonn
10:15-10:18	TuBTS3.6
<i>LandmarkBoost: Efficient Visual Context Classifiers for Robust Localization</i> , pp. 677-684.	
Dymczyk, Marcin Tomasz	ETH Zurich, Autonomous Systems Lab
Gilitschenski, Igor	Massachusetts Institute of Technology
Nieto, Juan	ETH Zürich
Lynen, Simon	ETH Zurich
Zeisl, Bernhard	Google
Sieglwart, Roland	ETH Zurich
10:18-10:21	TuBTS3.7
<i>Fire-Aware Planning of Aerial Trajectories and Ignitions</i> , pp. 685-692.	
Beachly, Evan	Drone Amplified
Detweiler, Carrick	University of Nebraska-Lincoln
Elbaum, Sebastian	University of Nebraska - Lincoln
Duncan, Brittany	University of Nebraska, Lincoln
Hilderbrandt, Carl	University of Nebraska - Lincoln
Twidwell, Dirac	University of Nebraska, Lincoln
Allen, Craig	University of Nebraska - Lincoln
10:21-10:24	TuBTS3.8
<i>Embedding Temporally Consistent Depth Recovery for Real-Time Dense Mapping in Visual-Inertial Odometry</i> , pp. 693-698.	
Cheng, Hui	Sun Yat-Sen University
Zheng, Zhuoqi	Sun Yat-Sen University
He, Jinhao	Sun Yat-Sen University
Chen, Chongyu	Sun Yat-Sen University
Wang, Keze	Sun Yat-Sen University
Lin, Liang	Sun Yat-Sen University
TuBTS4 Room 2.L2	
Humanoid Robots II (Regular session)	
Chair: Goodwine, Bill	University of Notre Dame
Co-Chair: Tsagarakis, Nikos	Istituto Italiano Di Tecnologia
10:00-10:03	TuBTS4.1

Fractional-Order Trajectory-Following Control for Two-Legged Dynamic Walking, pp. 699-704.

Leyden, Kevin
Goodwine, Bill

Lockheed Martin
University of Notre Dame

10:03-10:06 TuBTS4.2

Walking on a Steep Slope Using a Rope by a Life-Size Humanoid Robot, pp. 705-712.

Bando, Masahiro
Murooka, Masaki
Nozawa, Shunichi
Okada, Kei
Inaba, Masayuki

The University of Tokyo
The University of Tokyo
The University of Tokyo
The University of Tokyo
The University of Tokyo

10:06-10:09 TuBTS4.3

Perception Based Locomotion System for a Humanoid Robot with Adaptive Footstep Compensation under Task Constraints, pp. 713-719.

Kumagai, Iori
Morisawa, Mitsuharu
Nakaoka, Shin'ichiro
Sakaguchi, Takeshi
Kaminaga, Hiroshi

National Inst. of AIST
National Inst. of AIST
AIST
AIST
National Institute of Advanced Industrial Science and Technology

Kaneko, Kenji
Kanehiro, Fumio

National Inst. of AIST
National Inst. of AIST

10:09-10:12 TuBTS4.4

Adaptive Step Rotation in Biped Walking, pp. 720-725.

Bohorquez, Nestor
Wieber, Pierre-Brice

INRIA
INRIA Rhône-Alpes

10:12-10:15 TuBTS4.5

Implementing Full-Body Torque Control in Humanoid Robot with High Gear Ratio Using Pulse Width Modulation Voltage, pp. 726-732.

Lee, Kang Kyu
Sim, Okkee
Jeong, Hyobin
Oh, Jaesung
Bae, Hyoln
Hong, Seungwoo

KAIST Hubolab
KAIST
KAIST
KAIST
KAIST, HuboLab
Korea Advanced Institute of Science and Technology

Oh, Jun Ho

Korea Advanced Inst. of Sci. and Tech

10:15-10:18 TuBTS4.6

Towards Minimal Intervention Control with Competing Constraints, pp. 733-738.

Huang, Yanlong
Silvério, João
Caldwell, Darwin G.

Istituto Italiano Di Tecnologia
Istituto Italiano Di Tecnologia
Istituto Italiano Di Tecnologia

10:18-10:21 TuBTS4.7

Design and Evaluation of Torque Based Bipedal Walking Control System That Prevent Fall Over by Impulsive Disturbance, pp. 739-746.

Shirai, Takuma
Nagamatsu, Yuya
Suzuki, Hiroto
Nozawa, Shunichi
Okada, Kei
Inaba, Masayuki

Tokyo University
The University of Tokyo
The University of Tokyo
The University of Tokyo
The University of Tokyo
The University of Tokyo

10:21-10:24 TuBTS4.8

Humanoid Robot COM Kinematics Estimation Based on Compliant Inverted Pendulum Model and Robust State Estimator, pp. 747-753.

Bae, Hyoln
Jeong, Hyobin
Oh, Jaesung
Lee, Kang Kyu
Oh, Jun Ho

KAIST, HuboLab
KAIST
KAIST
KAIST Hubolab
Korea Advanced Inst. of Sci. and Tech

TuBTS5 Room 2.R3

Medical Robots II (Regular session)

Chair: Kroeger, Torsten

Karlsruher Institut Für Technologie (KIT)

Co-Chair: Ganguly, Amartya

Marsi Bionics SL

10:00-10:03 TuBTS5.1

Robotic Sewing and Knot Tying for Personalized Stent Graft Manufacturing, pp. 754-760.

Hu, Yang
Zhang, Lin
Li, Wei
Yang, Guang-Zhong

Imperial College London
Imperial College London
Imperial College London
Imperial College London

10:03-10:06 TuBTS5.2

Estimation of Interaction Forces in Robotic Surgery Using a Semi-Supervised Deep Neural Network Model, pp. 761-768.

Marban Gonzalez, Arturo

Fraunhofer Heinrich Hertz Institute (FHFI)

Srinivasan, Vignesh

Fraunhofer Heinrich Hertz Institute

Samek, Wojciech

Fraunhofer Heinrich Hertz Institute

Fernandez, Josep

Technical University of Catalonia

Casals, Alicia

Universitat Politècnica De Catalunya, Barcelona Tech

10:06-10:09 TuBTS5.3

Cross-Scene Suture Thread Parsing for Robot Assisted Anastomosis Based on Joint Representation Learning, pp. 769-776.

Gu, Yun
Hu, Yang
Zhang, Lin
Yang, Jie
Yang, Guang-Zhong

SJTU
Imperial College London
Imperial College London
Shanghai Jiaotong University
Imperial College London

10:09-10:12 TuBTS5.4

Unsupervised Trajectory Segmentation and Promoting of Multi-Modal Surgical Demonstrations, pp. 777-782.

Shao, Zhenzhou
Zhao, Hongfa
Xie, Jiexin
Qu, Ying

Capital Normal University
Capital Normal University
Capital Normal University
The University of Tennessee, Knoxville

Guan, Yong

Capital Normal University

Tan, Jindong

University of Tennessee, Knoxville

10:12-10:15 TuBTS5.5

Autonomous Localization, Navigation and Hastral Fold Detection for Robotic Endoscopy, pp. 783-790.

Prendergast, Joseph Micah
Formosa, Gregory
Heckman, Christoffer
Rentschler, Mark

University of Colorado at Boulder
University of Colorado, Boulder
University of Colorado at Boulder
University of Colorado at Boulder

10:15-10:18 TuBTS5.6

Towards a Robotic Assisted System for Percutaneous Nephrolithotomy, pp. 791-797.

Li, Hsieh-Yu	Singapore University of Technology and Design
Paranawithana, Ishara	Singapore University of Technology and Design
Chau, Zhong Hoo	Singapore University of Technology and Design
Yang, Liangjing	Massachusetts Institute of Technology
Lim, Terence Sey Kiat	Changi General Hospital
Foong, Shaohui	Singapore University of Technology and Design
Ng, Foo Cheong	Changi General Hospital
Tan, U-Xuan	Singapore University of Technology and Design

10:18-10:21 TuBTS5.7

On Muscle Activation for Improving Robotic Rehabilitation after Spinal Cord Injury, pp. 798-805.

Cheng, Richard	California Institute of Technology
Sui, Yanan	California Institute of Technology
Sayenko, Dimitry	University of California Los Angeles
Burdick, Joel	California Institute of Technology

10:21-10:24 TuBTS5.8

Printing Strain Gauges on Intuitive Surgical Da Vinci Robot End Effectors, pp. 806-812.

Peña, Rut	Harvard University Wyss Institute for Biologically Inspired Engi
Smith, Michael	Harvard University
Ontiveros, Nicolas	Harvard University
Hammond III, Frank L.	Georgia Institute of Technology
Wood, Robert	Harvard University

TuBTS6 Room 1.L3 **Human-Robot Interaction I** (Regular session)

Chair: Zhang, Hong	University of Alberta
Co-Chair: Hanheide, Marc	University of Lincoln

10:00-10:03 TuBTS6.1

Group Emotion Recognition Strategies for Entertainment Robots, pp. 813-818.

Cosentino, Sarah	Waseda University
Randria, Estelle Irinala Sylvana	Université Paul Sabatier (Upssitech)
Lin, Jia-Yeu	Waseda University
Pellegrini, Thomas	Université De Toulouse, UPS, IRIT, Toulouse
Sessa, Salvatore	Waseda University
Takanishi, Atsuo	Waseda University

10:03-10:06 TuBTS6.2

Learning How Pedestrians Navigate: A Deep Inverse Reinforcement Learning Approach, pp. 819-826.

Fahad, Muhammad	Stevens Institute of Technology
Chen, Zhuo	Stevens Institute of Technology
Guo, Yi	Stevens Institute of Technology

10:06-10:09 TuBTS6.3

Situated Human--Robot Collaboration: Predicting Intent from Grounded Natural Language, pp. 827-833.

Brawer, Jake	Yale University
Mangin, Olivier	Yale University
Roncone, Alessandro	Yale University
Widder, Sarah	Yale University
Scassellati, Brian	Yale

10:09-10:12 TuBTS6.4

Social Coordination for Looking-Together Situations, pp. 834-841.

Akita, Shohei	Keio University
Satake, Satoru	ATR
Shiomi, Masahiro	ATR
Imai, Michita	Keio University
Kanda, Takayuki	Kyoto University

10:12-10:15 TuBTS6.5

Policy Shaping with Supervisory Attention Driven Exploration, pp. 842-847.

Kessler Faulkner, Taylor	University of Texas at Austin
Short, Elaine Schaertl	University of Texas at Austin
Thomaz, Andrea Lockerd	University of Texas at Austin

10:15-10:18 TuBTS6.6

Friendly Motion Learning towards Sustainable Human Robot Interaction, pp. 848-853.

Sato, Shuhei	Osaka University
Kamide, Hiroko	Nagoya University
Mae, Yasushi	Osaka University
Kojima, Masaru	Osaka University
Arai, Tatsuo	University of Electro-Communications

10:18-10:21 TuBTS6.7

On the Robustness of Speech Emotion Recognition for Human-Robot Interaction with Deep Neural Networks, pp. 854-860.

Lakomkin, Egor	University of Hamburg
Zamani, Mohammad Ali	University of Hamburg
Weber, Cornelius	Knowledge Technology Group, University of Hamburg
Magg, Sven	University of Hamburg
Wermter, Stefan	University of Hamburg

10:21-10:24 TuBTS6.8

Modeling Supervisor Safe Sets for Improving Collaboration in Human-Robot Teams, pp. 861-868.

McPherson, David	University of California, Berkeley
Scobee, Dexter	University of California, Berkeley
Menke, Joseph	University of California, Berkeley
Yang, Allen	University of California, Berkeley
Sastry, Shankar	University of California, Berkeley

TuBTS7 Room 2.L3 **Semantics II** (Regular session)

Chair: Tan, Jindong	University of Tennessee, Knoxville
---------------------	------------------------------------

10:00-10:03 TuBTS7.1

Deep Semantic Lane Segmentation for Mapless Driving, pp. 869-875.

Meyer, Annika	FZI Research Center for Information Technology
Salscheider, Niels Ole	FZI Forschungszentrum Informatik
Orzechowski, Piotr Franciszek	FZI Research Center for Information Technology
Stiller, Christoph	Karlsruhe Institute of Technology

10:03-10:06 TuBTS7.2

Closed-Loop Robot Task Planning Based on Referring Expressions, pp. 876-881.

Kuhner, Daniel	University of Freiburg
Aldinger, Johannes	University of Freiburg
Burget, Felix	University of Freiburg

Göbelbecker, Moritz	Albert-Ludwigs-Universität Freiburg
Burgard, Wolfram	University of Freiburg
Nebel, Bernhard	Albert-Ludwigs-Universität, Freiburg
10:06-10:09	TuBTS7.3
<i>Learning Robotic Grasping Strategy Based on Natural-Language Object Descriptions</i> , pp. 882-887.	
Bharath Rao, Achyutha	Wichita State University
Krishnan, Krishna Kumar	Wichita State University
He, Hongsheng	Wichita State University
10:09-10:12	TuBTS7.4
<i>Semantic Grid Estimation with a Hybrid Bayesian and Deep Neural Network Approach</i> , pp. 888-895.	
Erkent, Ozgur	Inria
Wolf, Christian	INSA-Lyon
Laugier, Christian	INRIA
Sierra González, David	Inria Grenoble Rhône-Alpes
Romero-Cano, Victor	Universidad Autónoma De Occidente
10:12-10:15	TuBTS7.5
<i>PRISM: Pose Registration for Integrated Semantic Mapping</i> , pp. 896-902.	
Hart, Justin	University of Texas at Austin
Shah, Rishi	The University of Texas at Austin
Kirmani, Sean	The University of Texas at Austin
Walker, Nick	The University of Texas at Austin
Baldauf, Kathryn	University of Texas at Austin
John, Nathan	University of Texas at Austin
Stone, Peter	University of Texas at Austin
10:15-10:18	TuBTS7.6
<i>3D Deep Object Recognition and Semantic Understanding for Visually-Guided Robotic Service</i> , pp. 903-910.	
Lee, Sukhan	Sungkyunkwan University
Naguib, Ahmed Mohammed	Intelligent Systems Research Institute (ISRI), Sungkyunkwan Univ
Islam, Naeem Ul	Intelligent Systems Research Institute (ISRI), Sungkyunkwan Univ
Nguyen, Tuan Anh	Sungkyunkwan University
10:18-10:21	TuBTS7.7
<i>Semantic Mapping with Simultaneous Object Detection and Localization</i> , pp. 911-918.	
Zeng, Zhen	University of Michigan
Zhou, Yunwen	University of Michigan
Jenkins, Odest Chadwicke	University of Michigan
Desingh, Karthik	University of Michigan
10:21-10:24	TuBTS7.8
<i>Real-Time Fully Incremental Scene Understanding on Mobile Platforms</i> , N/A.	
Wald, Johanna	Technische Universität München
Tateno, Keisuke	Technische Universität München
Sturm, Jürgen	Metaio GmbH
Navab, Nassir	TU Munich
Tombari, Federico	Technische Universität München
TuBTS8	Room 2.R1
Robot Design II (Regular session)	
Chair: Ma, Shugen	Ritsumeikan University
Co-Chair: Jardon, Alberto	Universidad Carlos III De Madrid

10:00-10:03	TuBTS8.1
<i>Optimization-Based Design and Analysis of Planar Rotary Springs</i> , pp. 927-934.	
Georgiev, Nikola	Caltech
Burdick, Joel	California Institute of Technology
10:03-10:06	TuBTS8.2
<i>Quaternion Joint: Dexterous 3-DOF Joint Representing Quaternion Motion for High-Speed Safe Interaction</i> , pp. 935-942.	
Kim, Yong-Jae	Korea University of Technology and Education
Kim, Jong-In	Korea University of Technology and Education
Jang, Wooseok	Korea University of Technology and Education (Koreatech)
10:06-10:09	TuBTS8.3
<i>Design of a 2 Motor 2 Degrees-Of-Freedom Coupled Tendon-Driven Joint Module</i> , pp. 943-948.	
Li, Wenyang	University of Electro-Communications
Chen, Peng	The University of Electro-Communications
Bai, Dianchun	Shenyang University of Technology
Zhu, Xiaoxiao	SJTU
Togo, Shunta	Graduate School of Informatics and Engineering, the University O
Yokoi, Hiroshi	The University of Electro-Communications
Jiang, Yinlai	The University of Electro-Communications
10:09-10:12	TuBTS8.4
<i>A Differential Elastic Joint for Multi-Linked Pipeline Inspection Robots</i> , pp. 949-954.	
Kakogawa, Atsushi	Ritsumeikan University
Ma, Shugen	Ritsumeikan University
10:12-10:15	TuBTS8.5
<i>A Novel Design of Extended Coaxial Spherical Joint Module for a New Modular Type-Multiple DOFs Robotic Platform</i> , pp. 955-960.	
Lee, Jaeyong	Kwangwoon University
Noh, Jaeho	Kwangwoon University
Yang, Jinho	Hankook Mirae Technology Co., Ltd
Yang, Woosung	Kwangwoon University
10:15-10:18	TuBTS8.6
<i>A Novel Cable Actuation Mechanism for 2-DOF Hyper-Redundant Bending Robot Composed of Pulleyless Rolling Joints</i> , pp. 961-966.	
Suh, Jung-wook	ETRI (Electronics and Telecommunications Research Institute)
10:18-10:21	TuBTS8.7
<i>Design of Robotic Gripper with Constant Transmission Ratio Based on Twisted String Actuator: Concept and Evaluation</i> , pp. 967-972.	
Nedelchev, Simeon	Korea University of Technology and Education
Gaponov, Igor	Korea University of Technology and Education
Ryu, Jee-Hwan	Korea Univ. of Tech. and Education
10:21-10:24	TuBTS8.8
<i>Stopper Angle Design for a Multi-Link Articulated Wheeled In-Pipe Robot with Underactuated Twisting Joints</i> , pp. 973-978.	

Oka, Yoshimichi	Ritsumeikan University
Kakogawa, Atsushi	Ritsumeikan University
Ma, Shugen	Ritsumeikan University

TuBTS9		Room 4.L1
Special Session: UAV Indoors Navigation (Regular session)		
Chair: Campoy, Pascual		Computer Vision Group. Universidad Politécnica De Madrid
Co-Chair: de Croon, Guido		TU Delft / ESA
10:00-10:03		TuBTS9.1
<i>Image-Based Visual Servoing Controller for Multirotor Aerial Robots Using Deep Reinforcement Learning (I)</i> , pp. 979-986.		
Sampedro, Carlos	Universidad Politecnica De Madrid	
Rodriguez-Ramos, Alejandro	Universidad Politécnica De Madrid	
Gil Moreno, Ignacio	Universidad Politécnica De Madrid	
Mejias, Luis	Queensland University of Technology	
Campoy, Pascual	Computer Vision Group. Universidad Politécnica De Madrid	
10:03-10:06		TuBTS9.2
<i>Perspective Correcting Visual Odometry for Agile MAVs Using a Pixel Processor Array (I)</i> , pp. 987-994.		
Greatwood, Colin	University of Bristol	
Bose, Laurie	University of Bristol	
Richardson, Thomas	University of Bristol	
Mayol, Walterio	University of Bristol	
Chen, Jianing	The University of Manchester	
Carey, Stephen J.	The University of Manchester	
Dudek, Piotr	The University of Manchester	
10:06-10:09		TuBTS9.3
<i>C-Blox: A Scalable and Consistent TSDF-Based Dense Mapping Approach</i> , pp. 995-1002.		
Millane, Alexander James	ETH Zurich	
Taylor, Zachary Jeremy	ETH Zürich	
Oleynikova, Helen	ETH Zürich	
Nieto, Juan	ETH Zürich	
Sieglwart, Roland	ETH Zurich	
Cadena Lerma, Cesar	ETH Zurich	
10:09-10:12		TuBTS9.4
<i>Challenges of Autonomous Flight in Indoor Environments (I)</i> , pp. 1003-1009.		
de Croon, Guido	TU Delft / ESA	
De Wagter, Christophe	Delft University of Technology	
10:12-10:15		TuBTS9.5
<i>A Deep Reinforcement Learning Technique for Vision-Based Autonomous Multirotor Landing on a Moving Platform (I)</i> , pp. 1010-1017.		
Rodriguez-Ramos, Alejandro	Universidad Politécnica De Madrid	
Sampedro, Carlos	Universidad Politecnica De Madrid	
Bavle, Hriday	PhD Student at Universidad Politecnica De Madrid	
Gil Moreno, Ignacio	Universidad Politécnica De Madrid	
Campoy, Pascual	Computer Vision Group. Universidad Politécnica De Madrid	

10:15-10:18		TuBTS9.6
<i>Stereo Visual Odometry and Semantics Based Localization of Aerial Robots in Indoor Environments (I)</i> , pp. 1018-1023.		
Bavle, Hriday	PhD Student at Universidad Politecnica De Madrid	
Manthe, Stephan	University of Koblenz-Landau	
de la Puente, Paloma	Universidad Politécnica De Madrid	
Rodriguez-Ramos, Alejandro	Universidad Politécnica De Madrid	
Sampedro, Carlos	Universidad Politecnica De Madrid	
Campoy, Pascual	Computer Vision Group. Universidad Politécnica De Madrid	
10:18-10:21		TuBTS9.7
<i>Laser-Based Reactive Navigation for Multirotor Aerial Robots Using Deep Reinforcement Learning (I)</i> , pp. 1024-1031.		
Sampedro, Carlos	Universidad Politecnica De Madrid	
Bavle, Hriday	PhD Student at Universidad Politecnica De Madrid	
Rodriguez-Ramos, Alejandro	Universidad Politécnica De Madrid	
de la Puente, Paloma	Universidad Politécnica De Madrid	
Campoy, Pascual	Computer Vision Group. Universidad Politécnica De Madrid	
10:21-10:24		TuBTS9.8
<i>Drone Detection Using Depth Maps (I)</i> , pp. 1032-1037.		
Carrio, Adrian	Technical University of Madrid	
Vemprala, Sai	Texas A&M University	
Ripoll, Andres	TU Delft	
Saripalli, Srikanth	Texas A&M	
Campoy, Pascual	Computer Vision Group. Universidad Politécnica De Madrid	
TuCTS1		Room 1.L5
Deep Learning III (Regular session)		
Chair: Demiris, Yiannis		Imperial College London
Co-Chair: Sakaino, Sho		Saitama University
14:30-14:33		TuCTS1.1
<i>Real-Time Dance Generation to Music for a Legged Robot</i> , pp. 1038-1044.		
Bi, Thomas	ETH Zurich	
Fankhauser, Péter	ETH Zurich	
Bellicoso, C. Dario	ETH Zurich	
Hutter, Marco	ETH Zurich	
14:33-14:36		TuCTS1.2
<i>Robust Fruit Counting Combining Deep Learning, Tracking, and Structure from Motion</i> , pp. 1045-1052.		
Liu, Xu	University of Pennsylvania	
Chen, Steven W	University of Pennsylvania	
Aditya, Shreyas	University of Pennsylvania	
Sivakumar, Nivedha	University of Pennsylvania	
Dcunha, Sandeep	University of Pennsylvania	
Qu, Chao	University of Pennsylvania	
Taylor, Camillo Jose	University of Pennsylvania	
Das, Jnaneshwar	University of Pennsylvania	
Kumar, Vijay	University of Pennsylvania	

14:36-14:39	TuCTS1.3
<i>Towards View-Invariant Intersection Recognition from Videos Using Deep Network Ensembles</i> , pp. 1053-1060.	
Kumar, Abhijeet	IIIT Hyderabad
Gunshi, Gupta	IIIT Hyderabad
Sharma, Avinash	International Institute of Information Technology, Hyderabad
Krishna, Madhava	IIIT Hyderabad
14:39-14:42	TuCTS1.4
<i>Semantically Meaningful View Selection</i> , pp. 1061-1066.	
Joris, Guérin	Arts Et Métiers ParisTech
Gibaru, Olivier	Arts Et Métiers ParisTech
Eric, Nyiri	ENSAM
Thiery, Stéphane	ENSAM
Boots, Byron	Georgia Institute of Technology
14:42-14:45	TuCTS1.5
<i>Distributed Deep Reinforcement Learning for Fighting Forest Fires with a Network of Aerial Robots</i> , pp. 1067-1074.	
Haksar, Ravi N.	Stanford University
Schwager, Mac	Stanford University
14:45-14:48	TuCTS1.6
<i>Tree Species Identification from Bark Images Using Convolutional Neural Networks</i> , pp. 1075-1081.	
Carpentier, Mathieu	Laval University
Giguere, Philippe	Université Laval
Gaudreault, Jonathan	Laval University
14:48-14:51	TuCTS1.7
<i>UnDEMoN: Unsupervised Deep Network for Depth and Ego-Motion Estimation</i> , pp. 1082-1088.	
Vankadari, Madhu Babu	TCS
Das, Kaushik	Indian Institute of Science
Majumder, Anima	Tata Consultancy Services
Kumar, Swagat	Tata Consultancy Services
14:51-14:54	TuCTS1.8
<i>Leveraging Convolutional Pose Machines for Fast and Accurate Head Pose Estimation</i> , pp. 1089-1094.	
Cao, Yuanzhouhan	IDIAP Research Institute
Canevet, Olivier	Idiap Research Institute
Odobez, Jean-Marc	IDIAP
TuCTS2	Room 2.L5 KUKA
Visual Learning (Regular session)	
Chair: Roa, Maximo A.	DLR - German Aerospace Center
14:30-14:33	TuCTS2.1
<i>Conceptualization of Object Compositions Using Persistent Homology</i> , pp. 1095-1102.	
Mueller, Christian Atanas	Jacobs University
Birk, Andreas	Jacobs University
14:33-14:36	TuCTS2.2
<i>Kitting in the Wild through Online Domain Adaptation</i> , pp. 1103-1109.	
Mancini, Massimiliano	Sapienza University of Rome
Karaoguz, Hakan	Royal Institute of Technology KTH
Ricci, Elisa	University of Perugia
Jensfelt, Patric	KTH - Royal Institute of Technology
Caputo, Barbara	Sapienza University
14:36-14:39	TuCTS2.3

<i>CalibNet: Geometrically Supervised Extrinsic Calibration Using 3D Spatial Transformer Networks</i> , pp. 1110-1117.	
Iyer, Ganesh	International Institute of Information Technology, Hyderabad
Ramesh Kumar, Karnik Ram	IIIT Hyderabad
Jatavallabhula, Krishna Murthy	International Institute of Information Technology Hyderabad
Krishna, Madhava	IIIT Hyderabad
14:39-14:42	TuCTS2.4
<i>Compact & Comprehensive Canonical Appearances Discovered Autonomously</i> , pp. 1118-1123.	
Türksoy, Kadir	Boğaziçi University
Bozma, H. Isil	Bogazici University
14:42-14:45	TuCTS2.5
<i>Deep Learning for Exploration and Recovery of Uncharted and Dynamic Targets from UAV-Like Vision</i> , pp. 1124-1131.	
Andrew, William	University of Bristol
Greatwood, Colin	University of Bristol
Burghardt, Tilo	University of Bristol
14:45-14:48	TuCTS2.6
<i>Hybrid Multi-Camera Visual Servoing to Moving Target</i> , pp. 1132-1137.	
Cuevas-Velasquez, Hanz	University of Edinburgh
Li, Nanbo	University of Edinburgh
Tylecek, Radim	University of Edinburgh
Saval-Calvo, Marcelo	University of Alicante
Fisher, Robert	University of Edinburgh
14:48-14:51	TuCTS2.7
<i>Detecting and Picking of Folded Objects with a Multiple Sensor Integrated Robot Hand</i> , pp. 1138-1145.	
Hasegawa, Shun	The University of Tokyo
Wada, Kentaro	The University of Tokyo
Okada, Kei	The University of Tokyo
Inaba, Masayuki	The University of Tokyo
TuCTS3	Room 1.L2
Localization and Mapping III (Regular session)	
Chair: Takamatsu, Jun	Nara Institute of Science and Technology
14:30-14:33	TuCTS3.1
<i>Information Sparsification in Visual Inertial Odometry</i> , pp. 1146-1153.	
Hsiung, Shih-Chieh	Carnegie Mellon University
Hsiao, Ming	Carnegie Mellon University
Westman, Eric	Carnegie Mellon University
Valencia, Rafael	Zenuity AB
Kaess, Michael	Carnegie Mellon University
14:33-14:36	TuCTS3.2
<i>Towards Robust Visual Odometry with a Multi-Camera System</i> , pp. 1154-1161.	
Liu, Peidong	ETH Zurich
Geppert, Marcel	ETH Zürich
Heng, Lionel	DSO National Laboratories
Sattler, Torsten	ETH Zurich
Geiger, Andreas	Max Planck Institute for Intelligent Systems, Tübingen
Pollefeys, Marc	ETH Zurich
14:36-14:39	TuCTS3.3
<i>Stabilize an Unsupervised Feature Learning for LiDAR-Based</i>	

Place Recognition, pp. 1162-1167.

Yin, Peng	Shenyang Institute of Automation, Chinese Academy of Sciences
Xu, Lingyun	Chinese Academy of Sciences
Liu, Zhe	The Chinese University of Hong Kong
Li, Lu	Carnegie Mellon University
Salman, Hadi	Carnegie Mellon University
He, Yuqing	Shenyang Institute of Automation, Chinese Academy of Sciences
Xu, Weiliang	The University of Auckland
Wang, Hesheng	Shanghai Jiao Tong University
Choset, Howie	Carnegie Mellon University

14:39-14:42 TuCTS3.4

DS-SLAM: A Semantic Visual SLAM towards Dynamic Environments, pp. 1168-1174.

Yu, Chao	Tsinghua University
Liu, Zuxin	Beihang University
Liu, Xin-Jun	Tsinghua University
Xie, Fugui	Tsinghua University
Yang, Yi	Tsinghua University
Wei, Qi	Tsinghua University
Qiao, Fei	Tsinghua University

14:42-14:45 TuCTS3.5

A Robust Pose Graph Approach for City Scale LiDAR Mapping, pp. 1175-1182.

Yang, Sheng	Ditu (Beijing) Technology Co., Ltd
Zhu, Xiaoling	Ditu (Beijing) Technology Co., Ltd
Xing, Nian	Didi Chuxing
Feng, Lu	Didi
Qu, Xiaozhi	Didichuxing
Ma, Teng	Ditu (Beijing) Technology Co., Ltd

14:45-14:48 TuCTS3.6

Good Feature Selection for Least Squares Pose Optimization in VO/VSLAM, pp. 1183-1189.

Zhao, Yipu	Georgia Institute of Technology
Vela, Patricio	Georgia Institute of Technology

14:48-14:51 TuCTS3.7

Dynamic Scaling Factors of Covariances for Accurate 3D Normal Distributions Transform Registration, pp. 1190-1196.

Hong, Hyunki	Seoul National University
Lee, Beom-Hee	Seoul National University

14:51-14:54 TuCTS3.8

HMAPs – Hybrid Height-Voxel Maps for Environment Representation, pp. 1197-1203.

Garrote, Luis Carlos	Institute of Systems and Robotics
Premebida, Cristiano	University of Coimbra
Silva, David	DEEC ISR-UC
Nunes, Urbano	Instituto De Sistemas E Robotica

TuCTS4 Room 2.L2
Humanoid Robots III (Regular session)

Chair: Metta, Giorgio	Istituto Italiano Di Tecnologia (IIT)
Co-Chair: Suleiman, Wael	University of Sherbrooke

14:30-14:33 TuCTS4.1

Kalman Filter Based Observer for an External Force Applied to Medium-Sized Humanoid Robots, pp. 1204-1211.

Hawley, Louis	University of Sherbrooke
Rahem, Remy	University of Sherbrooke
Suleiman, Wael	University of Sherbrooke

14:33-14:36 TuCTS4.2

CPG-Based Controllers Can Generate Both Discrete and Rhythmic Movements, pp. 1212-1217.

Jouaiti, Melanie	Université De Lorraine, CNRS, Inria, LORIA, F-54000 Nancy, Franc
Henaff, Patrick	Université De Lorraine, CNRS, INRIA, LORIA, F-54000 Nancy, Fra

14:36-14:39 TuCTS4.3

A 3D Template Model for Healthy and Impaired Walking, pp. 1218-1225.

Ahmad Sharbafi, Maziar	Technical University of Darmstadt
Zadravec, Matjaž	University Rehabilitation Institute Republic of Slovenia
Matjacic, Zlatko	University Rehabilitation Institute, Republic of Slovenia
Seyfarth, Andre	TU Darmstadt

14:39-14:42 TuCTS4.4

Exploiting Friction in Torque Controlled Humanoid Robots, pp. 1226-1232.

Nava, Gabriele	Istituto Italiano Di Tecnologia
Ferigo, Diego	Istituto Italiano Di Tecnologia
Pucci, Daniele	Italian Institute of Technology

14:42-14:45 TuCTS4.5

Structure Preserving Multi-Contact Balance Control for Series-Elastic and Visco-Elastic Humanoid Robots, pp. 1233-1240.

Werner, Alexander	German Aerospace Center (DLR)
Henze, Bernd	German Aerospace Center (DLR)
Keppler, Manuel	German Aerospace Center (DLR)
Loeffl, Florian	German Aerospace Center (DLR)
Leyendecker, Sigrid	University of Erlangen-Nuremberg
Ott, Christian	German Aerospace Center (DLR)

14:45-14:48 TuCTS4.6

Feedback Control for Cassie with Deep Reinforcement Learning, pp. 1241-1246.

Xie, Zhaoming	University of British Columbia
Bersth, Glen	University of British Columbia
Clary, Patrick	Oregon State University
Hurst, Jonathan	Oregon State University
van de Panne, Michiel	University of British Columbia

14:48-14:51 TuCTS4.7

Robust and Stretched-Knee Biped Walking Using Joint-Space Motion Control, pp. 1247-1254.

Nguyen, Kim-Ngoc-Khanh	The University of Tokyo
Noda, Shintaro	The University of Tokyo
Kojio, Yuta	The University of Tokyo
Sugai, Fumihito	The University of Tokyo
Nozawa, Shunichi	The University of Tokyo
Kakiuchi, Yohei	The University of Tokyo

Okada, Kei	The University of Tokyo
Inaba, Masayuki	The University of Tokyo
14:51-14:54	TuCTS4.8
<i>Public Perception of Android Robots: Indications from an Analysis of YouTube Comments</i> , pp. 1255-1260.	
Vlachos, Evgenios	University of Southern Denmark
Tan, Zheng-Hua	Aalborg University
TuCTS5	Room 2.R3
Medical Robots III (Regular session)	
Chair: Dario, Paolo	Scuola Superiore Sant'Anna
Co-Chair: Gonçalves, Paulo	Instituto Politecnico De Castelo Branco
14:30-14:33	TuCTS5.1
<i>Towards Automatic 3D Shape Instantiation for Deployed Stent Grafts: 2D Multiple-Class and Class-Imbalance Marker Segmentation with Equally-Weighted Focal U-Net</i> , pp. 1261-1267.	
Zhou, Xiao-Yun	Imperial College London
Riga, Celia	Imperial College London
Lee, Su-Lin	Imperial College London
Yang, Guang-Zhong	Imperial College London
14:33-14:36	TuCTS5.2
<i>A Confidence-Based Shared Control Strategy for the Smart Tissue Autonomous Robot (STAR)</i> , pp. 1268-1275.	
Saeidi, Hamed	University of Maryland College Park
Opfermann, Justin	Children's National Medical Center
Kam, Michael	University of Maryland
Raghunathan, Sudarshan	1994
Leonard, Simon	The Johns Hopkins University
Krieger, Axel	University of Maryland
14:36-14:39	TuCTS5.3
<i>A 3D Laparoscopic Imaging System Based on Stereo-Photogrammetry with Random Patterns</i> , pp. 1276-1282.	
Sui, Congying	The Chinese University of Hong Kong
Wang, Zerui	The Chinese University of Hong Kong
Liu, Yunhui	Chinese University of Hong Kong
14:39-14:42	TuCTS5.4
<i>Magnetic-Visual Sensor Fusion-Based Dense 3D Reconstruction and Localization for Endoscopic Capsule Robots</i> , pp. 1283-1289.	
Turan, Mehmet	Max Planck Institute Stuttgart
Almalioglu, Yasin	Bogazici University
Ornek, Evin Pinar	TU Munich
Araujo, Helder	University of Coimbra
Yanik, Mehmet Fatih	ETH
Sitti, Metin	Max-Planck Institute for Intelligent Systems
14:42-14:45	TuCTS5.5
<i>Robust Generalized Point Cloud Registration with Expectation Maximization Considering Anisotropic Positional Uncertainties</i> , pp. 1290-1297.	
Min, Zhe	The Chinese University of Hong Kong
Wang, Jiaole	The Chinese University of Hong Kong
Song, Shuang	Harbin Institute of Technology Shenzhen Graduate School
Meng, Max Q.-H.	The Chinese University of Hong Kong

14:45-14:48	Kong
TuCTS5.6	
<i>Vision-Based Surgical Tool Pose Estimation for the Da Vinci Robotic Surgical System</i> , pp. 1298-1305.	
Hao, Ran	Case Western Reserve University
Ozguner, Orhan	Case Western Reserve University
Cavusoglu, M. Cenk	Case Western Reserve University
14:48-14:51	TuCTS5.7
<i>A Parallel Robotic Mechanism for the Stabilization and Guidance of an Endoscope Tip in Laser Osteotomy</i> , pp. 1306-1311.	
Eugster, Manuela	University of Basel, BIROMED-Lab
C.Cattin, Philippe	Department of Biomedical Engineering, University of Basel
Zam, Azhar	Department of Biomedical Engineering, University of Basel
Rauter, Georg	University of Basel
14:51-14:54	TuCTS5.8
<i>RoboTracker: Collaborative Robotic Assistant Device with Electro-Mechanical Patient Tracking for Spinal Surgery</i> , pp. 1312-1317.	
Amarillo Espitia, Andres	Ceit, Manuel Lardizabal 15, 20018 Donostia / San Sebastián
Oñativia, Jon	EGILE Innovative Solutions, E 20850, Mendaro
Sánchez, Emilio	CEIT
TuCTS6	Room 1.L3
Human-Robot Interaction II (Regular session)	
Chair: Sugano, Shigeki	Waseda University
Co-Chair: Santos, Cristina	University of Minho
14:30-14:33	TuCTS6.1
<i>A Sliding Mode Control Architecture for Human-Manipulator Cooperative Surface Treatment Tasks</i> , pp. 1318-1325.	
Gracia, Luis	Technical University of Valencia
Solanes, J. Ernesto	Universitat Politècnica De València
Muñoz-Benavent, Pau	Universitat Politècnica De València
Valls Miro, Jaime	University of Technology Sydney
Perez, Carlos	Universidad Miguel Hernandez De Elche
Tornero, Josep	Technical University of Valencia
14:33-14:36	TuCTS6.2
<i>Human Intention Estimation Based on Neural Networks for Enhanced Collaboration with Robots</i> , pp. 1326-1333.	
Nicolis, Davide	Politecnico Di Milano
Zanchettin, Andrea Maria	Politecnico Di Milano
Rocco, Paolo	Politecnico Di Milano
14:36-14:39	TuCTS6.3
<i>Variable Admittance Control for Human-Robot Collaboration Based on Online Neural Network Training</i> , pp. 1334-1339.	
Sharkawy, Abdel-Nasser	University of Patras
Koustoumpardis, Panagiotis	University of Patras
Aspragathos, Nikos A.	University of Patras
14:39-14:42	TuCTS6.4
<i>Online Human Muscle Force Estimation for Fatigue Management in Human-Robot Co-Manipulation</i> , pp. 1340-1346.	
Peternel, Luka	Istituto Italiano Di Tecnologia
Fang, Cheng	Fondazione Istituto Italiano Di

		Tecnologia
Tsagarakis, Nikos	Istituto Italiano Di Tecnologia	
Ajoudani, Arash	Istituto Italiano Di Tecnologia	
14:42-14:45		TuCTS6.5
<i>Evolutionary Motion Control Optimization in Physical Human-Robot Interaction</i> , pp. 1347-1353.		
Nadeau, Nicholas A.	École De Technologie Supérieure	
Bonev, Ilian	École De Technologie Supérieure	
14:45-14:48		TuCTS6.6
<i>Human-Robot Cooperative Object Manipulation with Contact Changes</i> , pp. 1354-1360.		
Gienger, Michael	Honda Research Institute Europe	
Ruiken, Dirk	Honda Research Institute Europe	
Bates, Tamas	Technical University of Delft	
Regaieg, Mohamed	TU Munich	
Michael, Meißner	TU Munich	
Kober, Jens	TU Delft	
Seiwald, Philipp	Technical University of Munich	
Hildebrandt, Arne-Christoph	Technische Universität München	
14:48-14:51		TuCTS6.7
<i>From Human Physical Interaction to Online Motion Adaptation Using Parameterized Dynamical Systems</i> , pp. 1361-1366.		
Khoramshahi, Mahdi	EPFL	
Laurens, Antoine, Marin, Alix	EPFL	
Triquet, Thomas	EPFL	
Billard, Aude	EPFL	
14:51-14:54		TuCTS6.8
<i>A Series Elastic Brake Pedal to Preserve Conventional Pedal Feel under Regenerative Braking</i> , pp. 1367-1373.		
Caliskan, Umut	Sabancı University	
Apaydin, Ardan	Sabancı University	
Otaran, Ata	Queen Mary University of London	
Patoglu, Volkan	Sabancı University	
TuCTS7		Room 2.L3
Field Robotics (Regular session)		
Chair: Robuffo Giordano, Paolo	Centre National De La Recherche Scientifique (CNRS)	
Co-Chair: Malfaz, Maria	Universidad Carlos III De Madrid	
14:30-14:33		TuCTS7.1
<i>Unmanned Aerial Auger for Underground Sensor Installation</i> , pp. 1374-1381.		
Sun, Yue	University of Nebraska	
Plowcha, Adam	University of Nebraska	
Nail, Mark	University of Nebraska	
Elbaum, Sebastian	University of Nebraska - Lincoln	
Terry, Benjamin S.	University of Nebraska–Lincoln	
Detweiler, Carrick	University of Nebraska-Lincoln	
14:33-14:36		TuCTS7.2
<i>Enhanced Non-Steady Gliding Performance of the MultiMo-Bat through Optimal Airfoil Configuration and Control Strategy</i> , pp. 1382-1388.		
Kim, Hyungyu	Max Planck Institute	
Woodward, Matthew	Carnegie Mellon University	
Sitti, Metin	Max-Planck Institute for Intelligent Systems	

14:36-14:39	TuCTS7.3	
<i>Active Range and Bearing-Based Radiation Source Localization</i> , pp. 1389-1394.		
Lee, Michael	Carnegie Mellon University	
Shy, Daniel	University of Michigan	
Whittaker, William	Carnegie Mellon University	
Michael, Nathan	Carnegie Mellon University	
14:39-14:42	TuCTS7.4	
<i>Development of Camber-Flat Wing Structure Convert Mechanism for Asymmetric Flapping Micro Air Vehicle</i> , pp. 1395-1400.		
Jang, JaeHyung	Korea Institute of Industrial Technology	
Yang, Gi-Hun	KITECH	
14:42-14:45	TuCTS7.5	
<i>Robotic Boreblending: The Future of In-Situ Gas Turbine Repair</i> , pp. 1401-1406.		
Alatorre, David	University of Nottingham	
Nasser, Bilal	Rolls-Royce Plc	
Rabani, Amir	The University of Nottingham	
Nagy, Adam	University of Nottingham	
Dong, Xin	University of Nottingham	
Axinte, Dragos	University of Nottingham	
Kell, James	University of Nottingham	
14:45-14:48	TuCTS7.6	
<i>Design of an Autonomous Robot for Mapping, Navigation, and Manipulation in Underground Mines</i> , pp. 1407-1412.		
Lösch, Robert	TU Bergakademie Freiberg	
Grehl, Steve	TU Bergakademie Freiberg	
Donner, Marc	TU Bergakademie Freiberg	
Buhl, Claudia	TU Bergakademie Freiberg	
Jung, Bernhard	TU Bergakademie Freiberg	
14:48-14:51	TuCTS7.7	
<i>Design and Performance Evaluation of an Infotaxis-Based Three-Dimensional Algorithm for Odor Source Localization</i> , pp. 1413-1420.		
Ruddick, Julian	École Polytechnique Fédérale De Lausanne	
Marjovi, Ali	EPFL	
Rahbar, Faezeh	EPFL	
Martinoli, Alcherio	EPFL	
14:51-14:54	TuCTS7.8	
<i>Cognition-Enabled Framework for Mixed Human-Robot Rescue Teams</i> , pp. 1421-1428.		
Yazdani, Fereshta	University Bremen	
Kazhoyan, Gayane	University of Bremen	
Bozcuoglu, Asil Kaan	University of Bremen	
Haidu, Andrei	University Bremen	
Balint-Benczedi, Ferenc	University of Bremen	
Beßler, Daniel	Universität Bremen	
Pomarlan, Mihai	Universitatea Politehnica Timisoara	
Beetz, Michael	University of Bremen	
TuCTS8		Room 2.R1
Robot Design III (Regular session)		
Chair: Bonsignorio, Fabio Paolo	Heron Robots Srl and the Biorobotics Insitute Scuola Superiore S. Anna	
Co-Chair: Matsumoto, Yoshio	AIST	
14:30-14:33	TuCTS8.1	

Pulleys and Force Sensors Influence on Payload Estimation of Cable-Driven Parallel Robots, pp. 1429-1436.

Picard, Etienne	IRT Jules Verne and LS2N, Nantes
Caro, Stéphane	CNRS/LS2N
Claveau, Fabien	IMT-Atlantique, Nantes
Plestan, Franck	Ecole Centrale De Nantes-CNRS
14:33-14:36	TuCTS8.2
<i>3D-Printed Flexure-Based Finger Joints for Anthropomorphic Hands</i> , pp. 1437-1442.	
Garcia Rodriguez, Luis	University of Twente
Naves, Mark	University of Twente
Brouwer, Dannis M.	University of Twente
14:36-14:39	TuCTS8.3
<i>Body-Mounted Robot for Image-Guided Percutaneous Interventions: Mechanical Design and Preliminary Accuracy Evaluation</i> , pp. 1443-1448.	
Patel, Niravkumar	Johns Hopkins University
Yan, Jiawen	Harbin Institute of Technology
Levi, David	Johns Hopkins University, Galen Robotics
Monfaredi, Reza	Children's National Medical Center
Cleary, Kevin	Children's National Medical Center
Iordachita, Ioan Iulian	Johns Hopkins University
14:39-14:42	TuCTS8.4
<i>HERI II: A Robust and Flexible Robotic Hand Based on Modular Finger Design and under Actuation Principles</i> , pp. 1449-1455.	
Ren, Zeyu	Istituto Italiano Di Tecnologia
Kashiri, Navvab	Istituto Italiano Di Tecnologia
Zhou, Chengxu	Fondazione Istituto Italiano Di Tecnologia
Tsagarakis, Nikos	Istituto Italiano Di Tecnologia
14:42-14:45	TuCTS8.5
<i>Design, Modeling and Control of a Soft Robotic Arm</i> , pp. 1456-1463.	
Hofer, Matthias	ETH Zurich
D'Andrea, Raffaello	ETHZ
14:45-14:48	TuCTS8.6
<i>Energy-Efficient Design and Control of a Vibro-Driven Robot</i> , pp. 1464-1469.	
Liu, Pengcheng	University of Lincoln
Neumann, Gerhard	University of Lincoln
Fu, Qinbing	University of Lincoln
Pearson, Simon	University of Lincoln
Yu, Hongnian	Bournemouth University
14:48-14:51	TuCTS8.7
<i>Design of Compliant Mechanosensory Composite (CMC) and Its Application Toward the Sensible Mesoscale Robotics</i> , pp. 1470-1475.	
Kwak, Bokeon	Ulsan National Institute of Science and Technology (UNIST)
Bae, Joonbum	UNIST
14:51-14:54	TuCTS8.8
<i>Conductive Knit-Covered Pneumatic Artificial Muscle (k-PAM) Actuator</i> , pp. 1476-1481.	
Jamil, Babar	Hanyang University University
Lee, Seulah	Hanyang University
Choi, Youngjin	Hanyang University

TuCTS9	Room 4.L1
Special Session: Raw Materials, Tough Robots (Regular session)	
Co-Chair: Rossi, Claudio	Universidad Politecnica De Madrid
14:30-14:33	TuCTS9.1
<i>Underwater Robot Navigation for Maintenance and Inspection of Flooded Mine Shafts (I)</i> , pp. 1482-1487.	
Alvarez-Tunon, Olaya	Carlos III Madrid
Rodríguez, Angel J.	Universidad Carlos Iii
Jardon, Alberto	Universidad Carlos Iii De Madrid
Balaguer, Carlos	Universidad Carlos III De Madrid
14:33-14:36	TuCTS9.2
<i>Mechanical Subsystems Integration and Structural Analysis for the Autonomous Underwater Explorer (I)</i> , pp. 1488-1493.	
Heininen, Arttu Aleks	Tampere University of Technology
Villa, Jose	Tampere University of Technology (TUT)
Zavari, Soheil	TTY
Salomaa, Tuomas	Tampere University of Technology, Mechanical Engineering and Int
Usenius, Olli	Tampere University of Technology
Laitinen, Jouko Kalevi	Tampere University of Technology
Aaltonen, Jussi Matti	Tampere University of Technology
Koskinen, Kari Tapio	Tampere University of Technology
14:36-14:39	TuCTS9.3
<i>UX 1 System Design - a Robotic System for Underwater Mining Exploration (I)</i> , pp. 1494-1500.	
Martins, Alfredo	INESC TEC
Almeida, Jose	ISEP - Instituto Superior De Engenharia Do Porto
Almeida, Carlos	Instituto Superior De Engenharia Do Porto
Dias, André	INESC TEC and School of Engineering, Polytechnic Institute of Po
Dias, Nuno	Institute for Systems and Computer Engineering, Technology and S
Aaltonen, Jussi Matti	Tampere University of Technology
Heininen, Arttu Aleks	Tampere University of Technology
Koskinen, Kari Tapio	Tampere University of Technology
Rossi, Claudio	Universidad Politecnica De Madrid
Dominguez, Sergio	Technical University of Madrid
Voros, Csaba	Institute of Mineralogy - Geology, University of Miskolc
Henley, Stephen	Resources Computing International Ltd
McLoughlin, Mike	Resources Computing International Ltd
van Moerkerk, Hilco	Resources Computing International Ltd
Tweedie, James	Resources Computing International Ltd
Bodo, Balazs	La Palma Research Centre

Zajzon, Norbert	Institute of Mineralogy and Geology, University of Miskolc
Silva, Eduardo Alexandre Pereira da	Instituto Superior De Engenharia Do Porto
14:39-14:42	TuCTS9.4
<i>Automation in Sensing and Raw Material Characterization – a Conceptual Framework (I)</i> , pp. 1501-1506.	
Desta, Feven Solomon	Delft University of Technology
Buxton, Mike	Delft University of Technology
14:42-14:45	TuCTS9.5
<i>The Benefits and Challenges of Robotics in the Mineral Raw Materials Sector – an Overview (I)</i> , pp. 1507-1512.	
Lopes, Luis	La Palma Research Centre
Miklovicz, Tamás	La Palma Research Centre
Bakker, Edine	La Palma Research Centre
Milosevic, Zorana	Technical University of Madrid
14:45-14:48	TuCTS9.6
<i>Design, Modeling and Control of a Spherical Autonomous Underwater Vehicle for Mine Exploration (I)</i> , pp. 1513-1519.	
Suarez Fernandez, Ramon A.	Universidad Politecnica De Madrid
Parra Ricaurte, Edgar Andres	Universidad Politécnica De Madrid
Milosevic, Zorana	Technical University of Madrid
Dominguez, Sergio	Technical University of Madrid
Rossi, Claudio	Universidad Politecnica De Madrid
14:48-14:51	TuCTS9.7
<i>VAMOS Underwater Mining Machine Navigation System (I)</i> , pp. 1520-1526.	
Almeida, Jose	ISEP - Instituto Superior De Engenharia Do Porto
Almeida Bernardo Ferreira, António João	INESC TEC
Matias, Bruno	INESC TEC
Lomba, Caio	INESC TEC
Martins, Alfredo	INESC TEC
Silva, Eduardo Alexandre Pereira da	Instituto Superior De Engenharia Do Porto
14:51-14:54	TuCTS9.8
<i>Positioning, Navigation and Awareness of the VAMOS Underwater Robotic Mining System (I)</i> , pp. 1527-1533.	
Almeida, Jose	ISEP - Instituto Superior De Engenharia Do Porto
Martins, Alfredo	INESC TEC
Almeida, Carlos	Instituto Superior De Engenharia Do Porto
Dias, André	INESC TEC and School of Engineering, Polytechnic Institute of Po
Matias, Bruno	INESC TEC
Almeida Bernardo Ferreira, António João	INESC TEC
Jorge, Pedro	INESC TEC
Martins, Rui	INESC TEC
Bleier, Michael	Zentrum Fuer Telematik E.V
Nuechter, Andreas	University of Würzburg
Pidgeon, John	BMT
Kaspuniak, Stef	SMD Soil Machine Dynamics
Silva, Eduardo Alexandre Pereira da	Instituto Superior De Engenharia Do Porto

TuDTS1

Room 1.1.5

Deep Learning IV (Regular session)	
Chair: Quattrini Li, Alberto	Dartmouth College
Co-Chair: Chen, Nutan	Volkswagen Group
17:00-17:03	TuDTS1.1
<i>Multi-Agent Imitation Learning for Driving Simulation</i> , pp. 1534-1539.	
Bhattacharyya, Raunak	Stanford University
Phillips, Derek	Stanford University
Wulfe, Blake	Stanford University
Morton, Jeremy	Stanford University
Kuefler, Alex	Osaro, Inc
Kochenderfer, Mykel	Stanford University
17:03-17:06	TuDTS1.2
<i>Model-Based Action Exploration for Learning Dynamic Motion Skills</i> , pp. 1540-1546.	
Berseth, Glen	University of British Columbia
van de Panne, Michiel	University of British Columbia
17:06-17:09	TuDTS1.3
<i>Active Learning Based on Data Uncertainty and Model Sensitivity</i> , pp. 1547-1554.	
Chen, Nutan	Volkswagen Group
Klushyn, Alexej	Volkswagen Group
Paraschos, Alexandros	Volkswagen Group
Benbouzid, Djalel	Laboratoire De l'Accélérateur Linéaire, Université Paris Sud 11
van der Smagt, Patrick	TUM
17:09-17:12	TuDTS1.4
<i>Deep Reinforcement Learning for Audio-Visual Gaze Control</i> , pp. 1555-1562.	
Lathuilière, Stéphane	Inria
Massé, Benoit	Inria
Mesejo, Pablo	Inria
Horaud, Radu	INRIA Grenoble Rhone-Alpes
17:12-17:15	TuDTS1.5
<i>An Ensemble with Shared Representations Based on Convolutional Networks for Continually Learning Facial Expressions</i> , pp. 1563-1568.	
Siqueira, Henrique	University of Hamburg
Barros, Pablo	University of Hamburg
Magg, Sven	University of Hamburg
Wermter, Stefan	University of Hamburg
17:15-17:18	TuDTS1.6
<i>Deep Q-Learning for Dry Stacking Irregular Objects</i> , pp. 1569-1576.	
Liu, Yifang	University at Buffalo
Shamsi, Seyed Mahdi	SUNY at Buffalo
Fang, Le	University at Buffalo
Chen, Changyou	University at Buffalo
Napp, Nils	SUNY Buffalo
17:18-17:21	TuDTS1.7
<i>Learning Actionable Representations from Visual Observations</i> , pp. 1577-1584.	
Dwibedi, Debiddatta	Google
Tompson, Jonathan	Google
Lynch, Corey	Google Brain
Sermanet, Pierre	Google
17:21-17:24	TuDTS1.8
<i>Interactive Text2Pickup Networks for Natural Language Based Human-Robot Collaboration</i> , N/A.	
Ahn, Hyemin	Seoul National University

Choi, Sungjoon	Seoul National University
Kim, Nuri	Seoul National University
Cha, Geonho	Seoul National University
Oh, Songhwa	Seoul National University

TuDTS2		Room 2.L5 KUKA
Tactile and Force Sensing I (Regular session)		
Chair: Asfour, Tamim	Karlsruhe Institute of Technology (KIT)	
Co-Chair: Bernardino, Alexandre	IST - Técnico Lisboa	
17:00-17:03		TuDTS2.1
Efficient Distributed Torque Computation for Large Scale Robot Skin, pp. 1593-1599.		
Bergner, Florian	Technical University of Munich	
Dean-Leon, Emmanuel	Technischen Universitaet Muenchen	
Cheng, Gordon	Technical University of Munich	
17:03-17:06		TuDTS2.2
A Robust and Efficient Dynamic Network Protocol for a Large-Scale Artificial Robotic Skin, pp. 1600-1605.		
Bader, Christian	Technical University of Munich	
Bergner, Florian	Technical University of Munich	
Cheng, Gordon	Technical University of Munich	
17:06-17:09		TuDTS2.3
3D Shape Perception from Monocular Vision, Touch, and Shape Priors, pp. 1606-1613.		
Wang, Shaoxiong	MIT	
Wu, Jiajun	MIT	
Sun, Xingyuan	Shanghai Jiao Tong University	
Yuan, Wenzhen	MIT	
Freeman, William	Massachusetts Institute of Technology	
Tenenbaum, Joshua	Massachusetts Institute of Technology	
Adelson, Edward	MIT	
17:09-17:12		TuDTS2.4
Exploration and Reconstruction of Unknown Objects Using a Novel Normal and Contact Sensor, pp. 1614-1620.		
Ottenhaus, Simon	Karlsruhe Institute of Technology (KIT)	
Weiner, Pascal	Karlsruhe Institute of Technology	
Kaul, Lukas	Karlsruhe Institute of Technology	
Tulbure, Andreea Roxana	Karlsruhe Institute of Technology	
Asfour, Tamim	Karlsruhe Institute of Technology (KIT)	
17:12-17:15		TuDTS2.5
Soft Curvature and Contact Force Sensors for Deep-Sea Grasping Via Soft Optical Waveguides, pp. 1621-1627.		
Teeple, Clark	Harvard University	
Becker, Kaitlyn	Harvard University	
Wood, Robert	Harvard University	
17:15-17:18		TuDTS2.6
Realtime State Estimation with Tactile and Visual Sensing for Inserting a Suction-Held Object, pp. 1628-1635.		
Yu, Kuan-Ting	MIT	
Rodriguez, Alberto	Massachusetts Institute of Technology	
17:18-17:21		TuDTS2.7
Mechanical and Perceptual Characterizations of the Localized Shearing Using a Novel Haptic Display, pp. 1636-1642.		

Ho, Van	Japan Advanced Institute of Science and Technology
Hirai, Shinichi	Ritsumeikan Univ
17:21-17:24	TuDTS2.8
<i>Finding Safe 3D Robot Grasps through Efficient Haptic Exploration with Unscented Bayesian Optimization and Collision Penalty</i> , pp. 1643-1648.	
Castanheira, João	Institute for Systems and Robotics (ISR-Lisboa-LARSyS), Institut
Vicente, Pedro	Institute for Systems and Robotics (ISR-Lisboa-LARSyS) Institut
Martinez-Cantin, Ruben	Centro Universitario De La Defensa
Jamone, Lorenzo	Queen Mary University London
Bernardino, Alexandre	IST - Técnico Lisboa

TuDTS3	Room 1.L2
Localization and Mapping IV (Regular session)	
Chair: Choi, Hyun-Taek	Korea Institute of Oceans Science and Technology
Co-Chair: Uhm, Taeyoung	Korean Institute of Robot and Convergence
17:00-17:03	TuDTS3.1
<i>Indoor Mapping and Localization for Pedestrians Using Opportunistic Sensing with Smartphones</i> , pp. 1649-1656.	
Liang, Qing	Hong Kong University of Science and Technology
Wang, Lujia	Shenzhen Institutes of Advanced Technology
Li, You-Fu	City University of Hong Kong
Liu, Ming	Hong Kong University of Science and Technology
17:03-17:06	TuDTS3.2
<i>Navigation without Localisation: Reliable Teach and Repeat Based on the Convergence Theorem</i> , pp. 1657-1664.	
Krajník, Tomáš	Czech Technical University
Majer, Filip	FEE, Czech Technical University
Halodová, Lucie	Czech Technical University
Vintr, Tomas	FEE, Czech Technical University in Prague
17:06-17:09	TuDTS3.3
<i>Accurate Mix-Norm-Based Scan Matching</i> , pp. 1665-1671.	
Wang, Di	Xi'an Jiaotong University
Xue, Jianru	Xi'an Jiaotong University
Tao, Zhongxing	Xi'an Jiaotong University
Zhong, Yang	Xi'an Jiaotong University
Cui, Dixiao	Xi'an Jiaotong University
Du, Shaoyi	Xi'an Jiaotong University
Zheng, Nanning	Xi'an Jiaotong University
17:09-17:12	TuDTS3.4
<i>StreetMap - Mapping and Localization on Ground Planes Using a Downward Facing Camera</i> , pp. 1672-1679.	
Chen, Xu	ETH Zürich
Vempati, Anurag Sai	ETH Zurich, Disney Research Zurich
Beardsley, Paul	Disney Research Zurich
17:12-17:15	TuDTS3.5
<i>The TUM VI Benchmark for Evaluating Visual-Inertial Odometry</i> , pp. 1680-1687.	
Schubert, David	Technical University of Munich

Goll, Thore	Technische Universität München
Demmel, Nikolaus	Technische Universität München
Usenko, Vladyslav	TU Munich
Stueckler, Joerg	Max-Planck Institute for Intelligent Systems
Cremers, Daniel	Technical University of Munich
17:15-17:18	TuDTS3.6
<i>Scale-Robust Localization Using General Object Landmarks</i> , pp. 1688-1694.	
Holliday, Andrew	McGill University
Dudek, Gregory	McGill University
17:18-17:21	TuDTS3.7
<i>Localization of an Acoustic Fish-Tag Using the Time-Of-Arrival Measurements: Preliminary Results Using Exogenous Kalman Filter</i> , pp. 1695-1702.	
Jain, R. Praveen	Faculty of Engineering (FEUP), University of Porto
Zolich, Artur Piotr	Norwegian University of Science and Technology
Erstorp, Elias Strandell	KTH Royal Institute of Technology
Johansen, Tor Arne	Norwegian University of Science and Technology
Alfredsen, Jo Arve	Norwegian University of Science and Technology
Aguiar, A. Pedro	Faculty of Engineering, University of Porto (FEUP)
Kuttenkeuler, Jakob	KTH Royal Institute of Technology
Sousa, João	Universidade Porto - Faculdade Engenharia
17:21-17:24	TuDTS3.8
<i>Invariant Smoothing on Lie Groups</i> , pp. 1703-1710.	
Chauchat, Paul	Mines Paristech, Safran
Bonnabel, Silvere	Mines ParisTech
Barrau, Axel	Safran
TuDTS4 Room 2.L2	
Legged Robots I (Regular session)	
Chair: Kheddar, Abderrahmane	CNRS-AIST JRL (Joint Robotics Laboratory), UMI3218/CRT
Co-Chair: Meek, Sanford	University of Utah
17:00-17:03	TuDTS4.1
<i>Online Self-Body Image Acquisition Considering Changes in Muscle Routes Caused by Softness of Body Tissue for Tendon-Driven Musculoskeletal Humanoids</i> , pp. 1711-1717.	
Kawaharazuka, Kento	The University of Tokyo
Makino, Shogo	The University of Tokyo
Kawamura, Masaya	The University of Tokyo
Fujii, Ayaka	University of Tokyo
Asano, Yuki	The University of Tokyo
Okada, Kei	The University of Tokyo
Inaba, Masayuki	The University of Tokyo
17:03-17:06	TuDTS4.2
<i>A Combined RGB and Depth Descriptor for SLAM with Humanoids</i> , pp. 1718-1724.	
Sheikh, Rasha	University of Bonn
Osswald, Stefan	University of Bonn
Bennewitz, Maren	University of Bonn
17:06-17:09	TuDTS4.3
<i>Neural-Network-Controlled Spring Mass Template for Humanoid</i>	

<i>Running</i> , pp. 1725-1731.	
Xin, Songyan	Istituto Italiano Di Tecnologia (IIT)
Delhaisse, Brian	Istituto Italiano Di Tecnologia
You, Yangwei	Istituto Italiano Di Tecnologia
Zhou, Chengxu	Fondazione Istituto Italiano Di Tecnologia
Shahbazi, Mohammad	Istituto Italiano Di Tecnologia (IIT)
Tsagarakis, Nikos	Istituto Italiano Di Tecnologia
17:09-17:12	TuDTS4.4
<i>Quadruped Locomotion Control Based on Two Bipedes Jointly Carrying Model</i> , pp. 1732-1738.	
Zhang, Guoteng	Ritsumeikan University
Ma, Shugen	Ritsumeikan University
Liang, Felix	University of Washington
Li, Yibin	Shandong University
17:12-17:15	TuDTS4.5
<i>An Investigation of 2nd-Order Fixed Point SLIP Behavior</i> , pp. 1739-1744.	
Kontolatis, Ioannis	National Technical University of Athens
Papadopoulos, Evangelos	National Technical University of Athens
17:15-17:18	TuDTS4.6
<i>Cost of Transport Estimation for Legged Robot Based on Terrain Features Inference from Aerial Scan</i> , pp. 1745-1750.	
Pragr, Milos	Czech Technical University in Prague, FEE
Cizek, Petr	Czech Technical University in Prague, Faculty of Electrical Engi
Faigl, Jan	Czech Technical University in Prague
17:18-17:21	TuDTS4.7
<i>Determining Optimal Gait Parameters for a Statically Stable Walking Human Assistive Quadruped Robot</i> , pp. 1751-1756.	
McClain, Eric	University of Utah
Meek, Sanford	University of Utah
17:21-17:24	TuDTS4.8
<i>An Adaptive Landing Gear for Extending the Operational Range of Helicopters</i> , pp. 1757-1763.	
Stolz, Boris	ETH Zürich
Brödermann, Tim	ETH Zürich
Castiello, Enea	ZHAW
Englberger, Gokula	ETH Zürich
Erne, Daniel	ETH Zürich
Gasser, Jan	ETH Zürich
Hayoz, Eric	ETH Zürich
Müller, Stephan	ETH Zürich
Mühlebach, Lorin	ETH Zürich
Löw, Tobias	ETH Zürich
Scheuer, Dominique	ZHAW
Vandeventer, Luca	ETH Zürich
Bjelonic, Marko	ETH Zurich
Günther, Fabian	ETH Zürich
Kolvenbach, Hendrik	ETHZ
Höpfinger, Mark	Armasuisse
Hutter, Marco	ETH Zurich

TuDTS5	Room 2.R3
---------------	-----------

Medical Robots IV (Regular session)		
Chair: Stramigioli, Stefano		University of Twente
17:00-17:03		TuDTS5.1
Designing Concentric Tube Manipulators for Stability Using Topology Optimization, pp. 1764-1769.		
Ai Xin Jue Luo, Kevin		University of Toronto
Looi, Thomas		Hospital for Sick Children
Sabetian, Saba		University of Toronto
Drake, James		Hospital for Sick Children, University of Toronto
17:03-17:06		TuDTS5.2
Haptic Feedback and Dynamic Active Constraints for Robot-Assisted Endovascular Catheterization, pp. 1770-1775.		
Dagnino, Giulio		Imperial College London
Liu, Jindong		Imperial College London
Abdelaziz, Mohamed Essam		Imperial College London
Mohamed Kassem		
Chi, Wenqiang		Imperial College London
Riga, Celia		Imperial College London
Yang, Guang-Zhong		Imperial College London
17:06-17:09		TuDTS5.3
Intuitive Gaze-Control of a Robotized Flexible Endoscope, pp. 1776-1782.		
Oude Vrielink, Timo Joric Corman		Imperial College London
González-Bueno Puyal, Juana		Imperial College London
Kogkas, Alexandros		Imperial College London
Mylonas, George		Imperial College London
Darzi, Ara		Imperial College London
17:09-17:12		TuDTS5.4
A Soft Robot to Navigate the Lumens of the Body Using Undulatory Locomotion Generated by a Rotating Magnetic Dipole Field, pp. 1783-1788.		
Pham, Lan		University of Utah
Abbott, Jake		University of Utah
17:12-17:15		TuDTS5.5
A Robot System for Automated Wound Filling with Jetted Materials, pp. 1789-1794.		
Hosseini Jafari, Bashir		Universit of Texas Atdallas
Lee, Namhyung		University of Texas at Dallas
Thompson, Rachael		MIT
Schellhorn, Jackson		University of Texas at Dallas
Antohe, Bogdan		Microfab Inc
Gans, Nicholas (Nick)		University Texas at Dallas
17:15-17:18		TuDTS5.6
State Estimation for MRI-Actuated Catheters Via Catadioptric Stereo Camera, pp. 1795-1800.		
Greigarn, Tipakorn		Case Western Reserve University
Jackson, Russell		Case Western Reserve University
Cavusoglu, M. Cenk		Case Western Reserve University
17:18-17:21		TuDTS5.7
Unsupervised Odometry and Depth Learning for Endoscopic Capsule Robots, pp. 1801-1807.		
Turan, Mehmet		Max Planck Institute Stuttgart
Ornek, Evin Pinar		TU Munich
Ibrahimli, Nail		Technical University of Munich
Giracoglu, Can		Technical University of Munich
Almalioglu, Yasin		Boqazici University

Yanik, Mehmet Fatih	ETH
Sitti, Metin	Max-Planck Institute for Intelligent Systems
17:21-17:24	TuDTS5.8
<i>Evaluation of Torque Measurement Surrogates As Applied to Grip Torque and Jaw Angle Estimation of Robotic Surgical Tools</i> , N/A.	
ONeill, John	University of Minnesota
Stephens, Trevor Keith	University of Minnesota
Kowalewski, Timothy	University of Minnesota
TuDTS6	Room 1.L3
Human-Robot Interaction III (Regular session)	
Chair: Asada, Minoru	Osaka University
Co-Chair: Hagita, Norihiro	ATR
17:00-17:03	TuDTS6.1
<i>Bayesian-Inferred Flexible Path Generation in Human-Robot Collaborative Networks</i> , pp. 1816-1822.	
Bentz, William	University of Michigan
Panagou, Dimitra	University of Michigan, Ann Arbor
17:03-17:06	TuDTS6.2
<i>Head-Mounted Augmented Reality for Explainable Robotic Wheelchair Assistance</i> , pp. 1823-1829.	
Zolotas, Mark	Imperial College London
Elsdon, Joshua	Imperial College London
Demiris, Yiannis	Imperial College London
17:06-17:09	TuDTS6.3
<i>Progressive Automation with DMP Synchronization and Variable Stiffness Control</i> , N/A.	
Kastritsi, Theodora	Aristotle University of Thessaloniki
Dimeas, Fotios	Aristotle University of Thessaloniki
Doulgeri, Zoe	Aristotle University of Thessaloniki
17:09-17:12	TuDTS6.4
<i>Robot Programming through Augmented Trajectories in Augmented Reality</i> , pp. 1838-1844.	
Perez Quintero, Camilo Alfonso	University of Alberta
Li, Hui Qing	University of Washington
Pan, Matthew	University of British Columbia
Chan, Wesley Patrick	University of British Columbia
Van der Loos, H.F. Machiel	University of British Columbia (UBC)
Croft, Elizabeth	Monash University
17:12-17:15	TuDTS6.5
<i>The HRC Model Set for Human-Robot Collaboration Research</i> , pp. 1845-1852.	
Zeylikman, Sofya	Yale University
Widder, Sarah	Yale University
Ronccone, Alessandro	Yale University
Mangin, Olivier	Yale University
Scassellati, Brian	Yale
17:15-17:18	TuDTS6.6
<i>Band of Brothers and Bolts: Caring about Your Robot Teammate</i> , pp. 1853-1858.	
Wen, James	United States Air Force Academy
Stewart, Amanda	United States Air Force Academy

Billinghurst, Mark	Univ of Canterbury
Tossell, Chad	USAF Academy
17:18-17:21	TuDTS6.7
<i>DNN-Based Speech Recognition System Dealing with Motor State As Auxiliary Information of DNN for Head Shaking Robot</i> , pp. 1859-1863.	
Lee, Moa	Hanyang University
Chang, Joon-Hyuk	Hanyang University
17:21-17:24	TuDTS6.8
<i>The Power of a Hand-Shake in Human-Robot Interactions</i> , pp. 1864-1869.	
Avelino, João	Instituto Superior Técnico, Universidade De Lisboa
Correia, Filipa	INESC-ID and Instituto Superior Técnico, Technical University Of
Catarino, João	Departamento De Engenharia Informática, Instituto Superior Técnico
Ribeiro, Pedro	Departamento De Engenharia Informática, Instituto Superior Técnico
Moreno, Plinio	IST-ID
Bernardino, Alexandre	IST - Técnico Lisboa
Paiva, Ana	INESC-ID and Instituto Superior Técnico, TechnicalUniversity Of
TuDTS7	Room 2.L3
Marine Robotics I (Regular session)	
Chair: Ridao, Pere	Universitat De Girona
Co-Chair: From, Pål Johan	Norwegian University of Life Sciences
17:00-17:03	TuDTS7.1
<i>Received Signal Strength of Electromagnetic Waves Aided Integrated Inertial Navigation System for Underwater Vehicle</i> , pp. 1870-1876.	
Park, Daegil	POSTECH
Jung, Jaehoon	Pohang University of Science and Technology(POSTECH)
Kwak, Kyung min	Seoul National University of Science and Technology (SEOULTECH)
Kim, Jinhyun	Seoul National University of Science and Technology
Chung, Wan Kyun	POSTECH
17:03-17:06	TuDTS7.2
<i>Multibeam Data Processing for Underwater Mapping</i> , pp. 1877-1884.	
Vaz Teixeira, Pedro	Massachusetts Institute of Technology
Kaess, Michael	Carnegie Mellon University
Hover, Franz	MIT
Leonard, John	MIT
17:06-17:09	TuDTS7.3
<i>Vision-Based Autonomous Underwater Swimming in Dense Coral for Combined Collision Avoidance and Target Selection</i> , pp. 1885-1891.	
Manderson, Travis	McGill University
Gamboa Higuera, Juan Camilo	McGill University
Cheng, Ran	McGill University
Dudek, Gregory	McGill University
17:09-17:12	TuDTS7.4
<i>Robust Continuous System Integration for Critical Deep-Sea</i>	

<i>Robot Operations Using Knowledge-Enabled Simulation in the Loop</i> , pp. 1892-1899.	
Mueller, Christian Atanas	Jacobs University
Doernbach, Tobias	Jacobs University
Gomez Chavez, Arturo	Jacobs University Bremen GmbH
Köhntopp, Daniel	Jacobs University
Birk, Andreas	Jacobs University
17:12-17:15	TuDTS7.5
<i>Reliable Fusion of Black-Box Estimates of Underwater Localization</i> , pp. 1900-1905.	
Ferreira Chame, Hendry	Federal University of Rio Grande (FURG)
Machado, dos Santos, Matheus	FURG
Botelho, Silvia	University Federal of Rio Grande (FURG)
17:15-17:18	TuDTS7.6
<i>Coverage Optimization with Non-Actuated, Floating Mobile Sensors Using Iterative Trajectory Planning in Marine Flow Fields</i> , pp. 1906-1912.	
Hansen, Johanna	McGill University
Dudek, Gregory	McGill University
17:18-17:21	TuDTS7.7
<i>A Deformable Spiral Based Algorithm to Smooth Coverage Path Planning for Marine Growth Removal</i> , pp. 1913-1918.	
Hassan, Mahdi	University of Technology, Sydney
Liu, Dikai	University of Technology, Sydney
17:21-17:24	TuDTS7.8
<i>Acoustic Tag State Estimation with Unsynchronized Hydrophones on AUVs</i> , pp. 1919-1926.	
Shi, Jingnan	Harvey Mudd College
Ma, Tianyi	Harvey Mudd College
Lee, Chi-Yen	Harvey Mudd College
Shimelis, Eyassu	Harvey Mudd College
Van Eijk, Charles	Harvey Mudd College
Lowe, Christopher G.	California State University, Long Beach
Clark, Christopher M.	Harvey Mudd College
TuDTS8	Room 2.R1
Robot Design IV (Regular session)	
Chair: Gimenez, Antonio	University of Almeria
Co-Chair: Tolley, Michael T.	University of California, San Diego
17:00-17:03	TuDTS8.1
<i>GelSlim: A High-Resolution, Compact, Robust, and Calibrated Tactile-Sensing Finger</i> , pp. 1927-1934.	
Donlon, Elliott	MIT
Dong, Siyuan	MIT
Liu, Melody	MIT
Li, Jianhua	Massachusetts Institute of Technology
Adelson, Edward	MIT
Rodriguez, Alberto	Massachusetts Institute of Technology
17:03-17:06	TuDTS8.2
<i>Long Duration Surface Anchoring with a Hybrid Electrostatic and Gecko-Inspired Adhesive</i> , N/A.	
Ruffatto III, Donald	NASA Jet Propulsion Lab

Glick, Paul	UCSD Bioinspired Robotics and Design Lab
Tolley, Michael T.	University of California, San Diego
Parness, Aaron	Nasa Jet Propulsion Laboratory
17:06-17:09	TuDTS8.3
<i>Single-Grasp, Model-Free Object Classification Using a Hyper-Adaptive Hand, Google Soli, and Tactile Sensors</i> , pp. 1943-1950.	
Flintoff, Zak Jake	University of Auckland
Johnston, Bruno Douglas	The University of Auckland
Liarokapis, Minas	The University of Auckland
17:09-17:12	TuDTS8.4
<i>Design of a Bioinspired Robotic Hand: Magnetic Synapse Sensor Integration for a Robust Remote Tactile Sensing</i> , N/A.	
Kim, Sang-Hun	Seoul National University
Oh, Sunjong	Korea Institute of Machinery and Materials
Kim, Kyu Bum	Seoul National University
Jung, Youngdo	Korea Institute of Machinery and Materials
Lim, Hyuneui	Korea Institute of Machinery & Materials
Cho, Kyu-Jin	Seoul National University, Biorobotics Laboratory
17:12-17:15	TuDTS8.5
<i>A Soft Optical Waveguide Coupled with Fiber Optics for Dynamic Pressure and Strain Sensing</i> , N/A.	
To, Celeste	Carnegie Mellon
Hellebrekers, Tess	Carnegie Mellon University
Jung, Jaewoong	Seoul National University
Yoon, Sohee John	Seoul National University
Park, Yong-Lae	Seoul National University
17:15-17:18	TuDTS8.6
<i>Development of New Terminal Fixation Method for Synthetic Fiber Rope</i> , N/A.	
Horigome, Atsushi	Tokyo Institute of Technology
Endo, Gen	Tokyo Institute of Technology
Takata, Atsushi	Tokyo Institute of Technology
Wakabayashi, Youki	Tokyo Institute of Technology
17:18-17:21	TuDTS8.7
<i>The PREHydra: A Passive Return, High Force Density, Electro-Hydrostatic Actuator Concept for Wearable Robotics</i> , N/A.	
Staman, Kyrian	University of Twente
Veale, Allan Joshua	University of Twente
Van der Kooij, Herman	University of Twente
17:21-17:24	TuDTS8.8
<i>Analytical and Experimental Analysis for Position Optimization of a Grasp Assistance Supernumerary Robotic Hand</i> , N/A.	
Ciullo, Andrea Stefano	Istituto Italiano Di Tecnologia
Felici, Federica	Istituto Italiano Di Tecnologia
Catalano, Manuel Giuseppe	Istituto Italiano Di Tecnologia
Grioli, Giorgio	Istituto Italiano Di Tecnologia
Ajoudani, Arash	Istituto Italiano Di Tecnologia
Bicchi, Antonio	Università Di Pisa
TuDTS9	Room 4.L1
Special Session: Cultural Factors in Human-Robot Interaction (Regular session)	
Chair: Sgorbissa, Antonio	University of Genova
Co-Chair: Chong, Nak Young	Japan Advanced Inst. of Sci. and

	Tech
17:00-17:03	TuDTS9.1
<i>Encoding Guidelines for a Culturally Competent Robot for Elderly Care (I)</i> , pp. 1988-1995.	
Sgorbissa, Antonio	University of Genova
Papadopoulos, Irena	Middlesex University Higher Education Corporation
Bruno, Barbara	University of Genova
Koulouglioti, Christina	Middlesex University Higher Education Corporation, the Burroughs
Recchiuto, Carmine Tommaso	University of Genova
17:03-17:06	TuDTS9.2
<i>Embedding Ethics in the Design of Culturally Competent Socially Assistive Robots (I)</i> , pp. 1996-2001.	
Battistuzzi, Linda	University of Genova
Papadopoulos, Chris	University of Bedfordshire
Papadopoulos, Irena	Middlesex University Higher Education Corporation
Koulouglioti, Christina	Middlesex University Higher Education Corporation, the Burroughs
Sgorbissa, Antonio	University of Genova
17:06-17:09	TuDTS9.3
<i>Developing a New Brand of Culturally-Aware Personal Robots Based on Local Cultural Practices in the Danish Health Care System (I)</i> , pp. 2002-2007.	
Rehm, Matthias	Aalborg University
Krummheuer, Antonia	Aalborg University
Rodil, Kasper	Aalborg University
17:09-17:12	TuDTS9.4
<i>Emotional Bodily Expressions for Culturally Competent Robots through Long Term Human-Robot Interaction (I)</i> , pp. 2008-2013.	
Tuyen, Nguyen Tan Viet	Japan Advanced Institute of Science and Technology
Jeong, Sungmoon	Japan Advanced Institute of Science and Technology
Chong, Nak Young	Japan Advanced Inst. of Sci. and Tech
17:12-17:15	TuDTS9.5
<i>Identification of the User's Habits Based on Activity Information (I)</i> , pp. 2014-2019.	
Melo, Nicholas	Chubu University
Lee, Jaeryoung	Chubu University
Suzuki, Ryo	Chubu University
17:15-17:18	TuDTS9.6
<i>AIBO Robot Mortuary Rites in the Japanese Cultural Context (I)</i> , pp. 2020-2025.	
Knox, Elena	Waseda University
Watanabe, Katsumi	Waseda University
17:18-17:21	TuDTS9.7
<i>Social Robots As a Means of Integration? an Explorative Acceptance Study Considering Gender and Non-Verbal Behaviour (I)</i> , pp. 2026-2032.	
Lugrin, Birgit	University of Wuerzburg
Bergmann, Kirsten	University of Applied Sciences Bielefeld
Dippold, Jessica	University of Wuerzburg
17:21-17:24	TuDTS9.8
<i>Do I Act Familiar? Investigating the Similarity-Attraction Principle on Culture-Specific Communicative Behaviour for Social Robots (I)</i> , pp. 2033-2039.	

Lugrin, Birgit	University of Wuerzburg
Bartl, Andrea	University of Wuerzburg
Striepe, Hendrik	University of Wuerzburg
Lax, Jennifer	University of Wuerzburg
Toriizuka, Takashi	Nihon University

TuETS1		Room 1.L5
Deep Learning V (Regular session)		
Co-Chair: Matellan, Vicente		Universidad De Leon
18:00-18:03		TuETS1.1
Dexterous Manipulation Graphs, pp. 2040-2047.		
Cruciani, Silvia	KTH Royal Institute of Technology	
Smith, Claes Christian	KTH Royal Institute of Technology	
Kragic, Danica	KTH	
Hang, Kaiyu	Yale University	
18:03-18:06		TuETS1.2
Instance Segmentation of Visible and Occluded Regions for Finding and Picking Target from a Pile of Objects, pp. 2048-2055.		
Wada, Kentaro	The University of Tokyo	
Kitagawa, Shingo	University of Tokyo	
Okada, Kei	The University of Tokyo	
Inaba, Masayuki	The University of Tokyo	
18:06-18:09		TuETS1.3
Online Prediction of Threading Task Failure Using Convolutional Neural Networks, pp. 2056-2061.		
Ribeiro Moreira, Guilherme	University of Sao Paulo	
Giardini Lahr, Gustavo Jose	University of Sao Paulo	
Savazzi, Jose Otavio	EMBRAER	
Boaventura, Thiago	University of Sao Paulo	
Caurin, Glaucio Augusto de Paula	Eesc - Usp	
18:09-18:12		TuETS1.4
Deep Reinforcement Learning for Robotic Assembly of Mixed Deformable and Rigid Objects, pp. 2062-2069.		
Luo, Jianlan	UC Berkeley	
Solowjow, Eugen	Hamburg University of Technology	
Wen, Chengtao	Siemens	
Aparicio Ojea, Juan	Siemens	
Agogino, Alice	University of California Berkeley	
18:12-18:15		TuETS1.5
More Than a Feeling: Learning to Grasp and Regrasp Using Vision and Touch, N/A.		
Calandra, Roberto	University of California Berkeley	
Owens, Andrew	MIT	
Jayaraman, Dinesh	University of California, Berkeley	
Lin, Justin	University of California, Berkeley	
Yuan, Wenzhen	MIT	
Malik, Jitendra	UC Berkeley	
Adelson, Edward	MIT	
Levine, Sergey	UC Berkeley	
18:15-18:18		TuETS1.6
A Multimodal Classifier Generative Adversarial Network for Carry and Place Tasks from Ambiguous Language Instructions, N/A.		
Magassoubra, Aly	NICT	
Sugiura, Komei	National Institute of Information and Communications Tech	
Kawai, Hisashi	National Institute of Information	

		and Communications Technology
18:18-18:21	TuETS1.7	
RT3D: Real-Time 3D Vehicle Detection in LiDAR Point Cloud for Autonomous Driving, N/A.		
Zeng, Yiming	Institute of Computing Technology, Chinese Academy of Sciences,	
Hu, Yu	Institute of Computing Technology Chinese Academy of Sciences	
Liu, Shice	Institute of Computing Technology Chinese Academy of Sciences	
Ye, Jing	Institute of Computing Technology, Chinese Academy of Sciences	
Han, Yinhe	Institute of Computing Technology, Chinese Academy of Sciences	
Li, Xiaowei	Institute of Computing Technology, Chinese Academy of Sciences	
Sun, Ninghui	Institute of Computing Technology, Chinese Academy of Sciences	
18:21-18:24	TuETS1.8	
Inference Over Distribution of Posterior Class Probabilities for Reliable Bayesian Classification and Object-Level Perception, N/A.		
Tchuev, Vladimir	Technion Israel Institute of Technology	
Indelman, Vadim	Technion - Israel Institute of Technology	
TuETS2		Room 2.L5 KUKA
Tactile and Force Sensing II (Regular session)		
Chair: Lepora, Nathan		University of Bristol
Co-Chair: Feliu, Vicente		Escuela Técnica Superior De Ingenieros Industriales/Universidad De Castilla La-Mancha
18:00-18:03	TuETS2.1	
A Sensor-Less Catheter Contact Force Estimation Approach in Endovascular Intervention Procedures, pp. 2100-2106.		
Razban, Masoud	Concordia University	
Dargahi, Javad	Concordia University	
Boulet, Benoit	McGill University, Centre for Intelligent Machines	
18:03-18:06	TuETS2.2	
Contact Force Control of an Aerial Manipulator in Pressing an Emergency Switch Process, pp. 2107-2113.		
Meng, Xiangdong	Shenyang Institute of Automation, Chinese Academy of Sciences	
He, Yuqing	Shenyang Institute of Automation, Chinese Academy of Sciences	
Li, Qi	SAP	
Gu, Feng	Shenyang Institute of Automation, CAS	
Yang, Liying	Shenyang Institute of Automation	
Yan, Tengfei	State Key Laboratory of Robotics, Shenyang Institute of Automati	
Han, Jianda	Shenyang Institute of	

Automation, Chinese Academy of Sciences	
18:06-18:09	TuETS2.3
Mechatronic Fingernail with Static and Dynamic Force Sensing, pp. 2114-2119.	
Kõiva, Risto	Bielefeld University
Schwank, Tobias	Bielefeld University
Walck, Guillaume	Bielefeld University
Haschke, Robert	Bielefeld University
Ritter, Helge Joachim	Bielefeld University
18:09-18:12	TuETS2.4
Contact Force and Joint Torque Estimation Using Skin, N/A.	
Andrade Chavez, Francisco Javier	Istituto Italiano Di Tecnologia
Kangro, Joan	Italian Institute of Technology
Traversaro, Silvio	Istituto Italiano Di Tecnologia
Nori, Francesco	DeepMind
Pucci, Daniele	Italian Institute of Technology
18:12-18:15	TuETS2.5
Slip Detection with a Biomimetic Tactile Sensor, N/A.	
James, Jasper Wollaston	University of Bristol
Pestell, Nicholas	University of Bristol
Lepora, Nathan	University of Bristol
18:15-18:18	TuETS2.6
Active Sensing for Measuring Contact of Thin Film Gecko-Inspired Adhesives, N/A.	
Huh, Tae Myung	Stanford University
Liu, Cheng	Stanford University
Hashizume, Jiro	Hitachi America Ltd
Chen, Tony G.	Stanford University
Chang, Fu-Kuo	Stanford University
Cutkosky, Mark	Stanford University
18:18-18:21	TuETS2.7
Dynamic Locomotion Gaits of a Compliantly Actuated Quadruped with SLIP-Like Articulated Legs Embodied in the Mechanical Design, N/A.	
Lakatos, Dominic	German Aerospace Center (DLR)
Ploeger, Kai	Technische Universität Darmstadt
Loeffl, Florian	German Aerospace Center (DLR)
Seidel, Daniel	Technische Universität München
Schmidt, Florian	German Aerospace Center
Gumpert, Thomas	German Aerospace Center (DLR)
John, Freia Irina	TU Dortmund University
Bertram, Prof. Dr. Prof. h.c. Torsten	Technical University Ilmenau
Albu-Schäffer, Alin	DLR - German Aerospace Center
18:21-18:24	TuETS2.8
Friction Variability in Planar Pushing Data: Anisotropic Friction and Data-Collection Bias, N/A.	
Ma, Daolin	Massachusetts Institute of Technology
Rodriguez, Alberto	Massachusetts Institute of Technology
TuETS3	
Room 1.L2	
Localization and Mapping V (Regular session)	

Chair: Sandamirskaya, Yulia	University and ETH Zurich
Co-Chair: Uhm, Taeyoung	Korean Institute of Robot and Convergence
18:00-18:03	TuETS3.1
<i>Pose Estimation and Map Formation with Spiking Neural Networks: Towards Neuromorphic SLAM</i> , pp. 2159-2166.	
Kreiser, Raphaela	Institute of Neuroinformatics, University Zurich and ETH Zurich
Pienroj, Panin	D-ITET, ETH Zurich
Renner, Alpha	Institute of Neuroinformatics, University of Zurich and ETH Zurich
Sandamirskaya, Yulia	University and ETH Zurich
18:03-18:06	TuETS3.2
<i>Precise Localization in High-Definition Road Maps for Urban Regions</i> , pp. 2167-2174.	
Poggenhans, Fabian	FZI Research Center for Information Technology
Salscheider, Niels Ole	FZI Forschungszentrum Informatik
Stiller, Christoph	Karlsruhe Institute of Technology
18:06-18:09	TuETS3.3
<i>Virtual Occupancy Grid Map for Submap-Based Pose Graph SLAM and Planning in 3D Environments</i> , pp. 2175-2182.	
Ho, Bing-Jui	Carnegie Mellon University
Sodhi, Paloma	Carnegie Mellon University
Vaz Teixeira, Pedro	Massachusetts Institute of Technology
Hsiao, Ming	Carnegie Mellon University
Kusnur, Tushar	BITS Pilani, K. K. Birla Goa Campus
Kaess, Michael	Carnegie Mellon University
18:09-18:12	TuETS3.4
<i>Decentralized Localization Framework Using Heterogeneous Map-Matchings</i> , pp. 2183-2189.	
Lee, Soomok	Seoul National University
Kim, Junghoon	Seoul National University
Kim, JungWoo	Seoul National University
Oh, Gyu-Min	Seoul National University
Seo, Seung-Woo	Seoul National University
18:12-18:15	TuETS3.5
<i>HBST: A Hamming Distance Embedding Binary Search Tree for Feature-Based Visual Place Recognition</i> , N/A.	
Schlegel, Dominik	Sapienza - University of Rome
Grisetti, Giorgio	Sapienza University of Rome
18:15-18:18	TuETS3.6
<i>LDSO: Direct Sparse Odometry with Loop Closure</i> , pp. 2198-2204.	
Gao, Xiang	Technical University of Munich
Wang, Rui	Technical University of Munich
Demmel, Nikolaus	Technische Universität München
Cremers, Daniel	Technical University of Munich
18:18-18:21	TuETS3.7
<i>Omnidirectional DSO: Direct Sparse Odometry with Fisheye Cameras</i> , N/A.	
Matsuki, Hidenobu	The University of Tokyo
von Stumberg, Lukas	Technische Universität München
Usenko, Vladyslav	TU Munich
Stueckler, Joerg	Max-Planck Institute for Intelligent Systems
Cremers, Daniel	Technical University of Munich

18:21-18:24	TuETS3.8
<i>Parking Spot Estimation and Mapping for Mobile Robots</i> , N/A.	
Westfechtel, Thomas	Tohoku University
Ohno, Kazunori	Tohoku University
Mizuno, Naoki	Tohoku University
Hamada, Ryunosuke	Tohoku University
Kojima, Shotaro	Tohoku University
Tadokoro, Satoshi	Tohoku University
TuETS4	Room 2.L2
Legged Robots II (Regular session)	
Chair: Yoshida, Eiichi	National Inst. of AIST
Co-Chair: Ramirez-Amaro, Karinne	Institute for Cognitive Systems. Technische Universität München
18:00-18:03	TuETS4.1
<i>Energetic Efficiency of a Compositional Controller on a Monoped with an Articulated Leg and SLIP Dynamics</i> , pp. 2221-2228.	
Yu, Jeffrey	UCLA
Hong, Dennis	UCLA
Haberland, Matt	University of California, Los Angeles
18:03-18:06	TuETS4.2
<i>Precision Jumping Limits from Flight-Phase Control in Salto-1P</i> , pp. 2229-2236.	
Yim, Justin K.	University of California, Berkeley
Fearing, Ronald	University of California at Berkeley
18:06-18:09	TuETS4.3
<i>Analytically-Guided Design of a Tailed Bipedal Hopping Robot</i> , pp. 2237-2244.	
Shamsah, Abdulaziz	University of Pennsylvania
De, Avik	University of Pennsylvania
Koditschek, Daniel	University of Pennsylvania
18:09-18:12	TuETS4.4
<i>MIT Cheetah 3: Design and Control of a Robust, Dynamic Quadruped Robot</i> , pp. 2245-2252.	
Bledt, Gerardo	Massachusetts Institute of Technology (MIT)
Powell, Matthew	Massachusetts Institute of Technology
Katz, Benjamin	Massachusetts Institute of Technology
Di Carlo, Jared	Massachusetts Institute of Technology
Wensing, Patrick M.	University of Notre Dame
Kim, Sangbae	Massachusetts Institute of Technology
18:12-18:15	TuETS4.5
<i>Magneto: A Versatile Multi-Limbed Inspection Robot</i> , pp. 2253-2260.	
Bandyopadhyay, Tirthankar	CSIRO
Steindl, Ryan James	CSIRO
Talbot, Fletcher	CSIRO
Kottege, Navinda	CSIRO
Dungavell, Ross	CSIRO
Wood, Brett	CSIRO
Barker, James	CSIRO
Hoehn, Karsten	CSIRO
Elfes, Alberto	CSIRO
18:15-18:18	TuETS4.6

Data-Driven Discrete Planning for Targeted Hopping of Compliantly Actuated Robotic Legs, pp. 2261-2266.

Seidel, Daniel	Technische Universität München
Lakatos, Dominic	German Aerospace Center (DLR)
Albu-Schäffer, Alin	DLR - German Aerospace Center

18:18-18:21 TuETS4.7

Quadrupedal Walking Motion and Footstep Placement through Linear Model Predictive Control, pp. 2267-2273.

Laurenzi, Arturo	Istituto Italiano Di Tecnologia
Mingo Hoffman, Enrico	Fondazione Istituto Italiano Di Tecnologia
Tsagarakis, Nikos	Istituto Italiano Di Tecnologia

TuETS5 Room 2.R3
Rehabilitation Robotics (Regular session)

Co-Chair: Jardon, Alberto Universidad Carlos III De Madrid

18:00-18:03 TuETS5.1

A Synergetic Voluntary Control for Exoskeleton Based on Spinal Cord Mapping of Peripheral Bioelectric Activity, pp. 2274-2279.

Ishikawa, Shotaro	University of Tsukuba
Kadone, Hideki	University of Tsukuba
Suzuki, Kenji	University of Tsukuba

18:03-18:06 TuETS5.2

Learning-Based Walking Assistance Control Strategy for a Lower Limb Exoskeleton with Hemiplegia Patients, pp. 2280-2285.

Huang, Rui	University of Electronic Science and Technology of China
Peng, Zhinan	University of Electronic Science and Technology of China
Cheng, Hong	University of Electronic Science and Technology
Hu, Jiangping	University of Electronic Science and Technology of China
Qiu, Jing	University of Electronic Science and Technology of China
Zou, Chaobin	University of Electronic Science and Technology of China
Chen, Qiming	University of Electronic Science and Technology of China

18:06-18:09 TuETS5.3

Similarity of the Impact of Humanoid and In-Person Communications on Frontal Brain Activity of Older People, pp. 2286-2291.

Keshmiri, Soheil	Advanced Telecommunications Research Institute International (ATR)
Sumioka, Hidenobu	ATR
Yamazaki, Ryuji	Advanced Telecommunications Research Institute
Okubo, Masataka	Osaka Univ
Ishiguro, Hiroshi	Osaka University

18:09-18:12 TuETS5.4

A Phase Variable Approach to Volitional Control of Powered Knee-Ankle Prostheses, pp. 2292-2298.

Rezazadeh, Siavash	University of Texas at Dallas
Quintero, David	University of Texas at Dallas
Divekar, Nikhil	University of Texas at Dallas
Gregg, Robert D.	University of Texas at Dallas

18:12-18:15 TuETS5.5

Pre-Clinical Validation of the UHP Multifunctional Upper-Limb Rehabilitation Robot Based Platform, pp. 2299-2304.

Mancisidor, Aitziber	University of the Basque Country (UPV/EHU)
Zubizarreta, Asier	University of the Basque Country (UPV/EHU)
Cabanes, Itziar	University of the Basque Country
Asier, Brul	University of the Basque Country
Ana, Rodriguez-Larrad	University of the Basque Country (UPV/EHU)
Jung, Je Hyung	Tecnalia
18:15-18:18	TuETS5.6
<i>Cable Actuated Dexterous (CADEX) Glove for Effective Rehabilitation of the Hand for Patients with Neurological Diseases</i> , pp. 2305-2310.	
Kim, Dong Hyun	Korea Advanced Institute of Science and Technology
Park, Hyung-Soon	Korea Advanced Institute of Science and Technology
18:18-18:21	TuETS5.7
<i>Modified Adaptive Control of an Actuated Ankle Foot Orthosis to Assist Paretic Patients</i> , pp. 2311-2317.	
Arnez-Paniagua, Victor	Université Paris-Est Créteil
Rifai, Hala	University of Paris Est Créteil
Amirat, Yacine	University of Paris Est Créteil (UPEC)
Ghedira, Mouna	Laboratoire Analyse Et Restauration Du Mouvement - GHU Henri Mon
Gracies, Jean-Michel	APHP - CHU Henri Mondor
Mohammed, Samer	University of Paris Est Créteil - (UPEC)
18:21-18:24	TuETS5.8
<i>SMA Based Wrist Exoskeleton for Rehabilitation Therapy</i> , pp. 2318-2323.	
Serrano del Cerro, David	Universidad Carlos III De Madrid
Copaci, Dorin Sabin	Universidad Carlos III De Madrid
Moreno, Luis	Carlos III University
Blanco, M. Dolores	Carlos III University

TuETS6	Room 1.L3
Human-Robot Interaction IV (Regular session)	
Chair: Sanfeliu, Alberto	Universitat Politècnica De Catalunya
Co-Chair: Wermter, Stefan	University of Hamburg
18:00-18:03	TuETS6.1
<i>Utility Model Re-Description within a Motivational System for Cognitive Robotics</i> , pp. 2324-2329.	
Romero, Alejandro	University of Coruna
Bellas, Francisco	University of Coruna
Prieto, Abraham	Universidade Da Coruna
Duro, Richard	University of Coruna
18:03-18:06	TuETS6.2
<i>A Neurobotic Experiment for Crossmodal Conflict Resolution in Complex Environments</i> , pp. 2330-2335.	
Parisi, German Ignacio	University of Hamburg
Barros, Pablo	University of Hamburg
Fu, Di	Chinese Academy of Sciences
Magg, Sven	University of Hamburg
Wu, Haiyan	CAS Key Laboratory of Behavioral Science, Chinese Academy of Sci
Liu, Xun	CAS Key Laboratory of Behavioral Science, Chinese Academy of Sci

Wermter, Stefan	University of Hamburg
18:06-18:09	TuETS6.3
<i>Robust Object Recognition through Symbiotic Deep Learning in Mobile Robots</i> , pp. 2336-2341.	
Cartucho, João	Institute for Systems and Robotics, Instituto Superior Técnico,
Ventura, Rodrigo	Instituto Superior Técnico
Veloso, Manuela	Carnegie Mellon University
18:09-18:12	TuETS6.4
<i>People As Sensors: Imputing Maps from Human Actions</i> , pp. 2342-2348.	
Afolabi, Oladapo	University of California, Berkeley
Driggs-Campbell, Katherine Rose	Stanford University
Dong, Roy	University of California, Berkeley
Kochenderfer, Mykel	Stanford University
Sastry, Shankar	University of California, Berkeley
18:12-18:15	TuETS6.5
<i>How Do Humans Read Robotics? the Matter of the Lexical Ambiguity Resolution</i> , pp. 2349-2354.	
Pieters, Céline	LAAS-CNRS, INSA Toulouse, France - ULB, Belgium
Danblon, Emmanuelle	ULB
Laumond, Jean-Paul	LAAS-CNRS
18:15-18:18	TuETS6.6
<i>Free-View, 3D Gaze-Guided, Assistive Robotic System for Activities of Daily Living</i> , pp. 2355-2361.	
Wang, Ming-Yao	Imperial College London
Kogkas, Alexandros	Imperial College London
Mylonas, George	Imperial College London
Darzi, Ara	Imperial College London
18:21-18:24	TuETS6.8
<i>The Future of Legal and Ethical Regulations for Autonomous Robotics</i> , pp. 2362-2366.	
Xu, Huan	University of Maryland
Borson, Joseph	Unaffiliated

TuETS7	Room 2.L3
Marine Robotics II (Regular session)	
Chair: Kim, Ayoung	Korea Advanced Institute of Science Technology
Co-Chair: Kermorgant, Olivier	École Centrale Nantes
18:00-18:03	TuETS7.1
<i>Uncertainty-Based Online Mapping and Motion Planning for Marine Robotics Guidance</i> , pp. 2367-2374.	
Pairet, Èric	Edinburgh Centre for Robotics
Hernández, Juan David	Rice University
Lahijanian, Morteza	University of Oxford
Carreras, Marc	Universitat De Girona
18:03-18:06	TuETS7.2
<i>Heterogeneous Vehicles Routing for Water Canal Damage Assessment</i> , pp. 2375-2382.	
Deng, Di	Carnegie Mellon University
Pang, Tao	Massachusetts Institute of Technology
Palli, Prasanth	Carnegie Mellon University
Shu, Fang	Carnegie Mellon University
Shimada, Kenji	Carnegie Mellon University
18:06-18:09	TuETS7.3

Passive Acoustic Tracking for Behavior Mode Classification between Surface and Underwater Vehicles, pp. 2383-2388.

Fischell, Erin Marie	Woods Hole Oceanographic Institution
Viquez, Oscar	Massachusetts Institute of Technology
Schmidt, Henrik	Massachusetts Institute of Technology

18:09-18:12 TuETS7.4

A Rationale-Driven Team Plan Representation for Autonomous Intra-Robot Replanning, pp. 2389-2394.

Cooksey, Philip	Carnegie Mellon University
Velooso, Manuela	Carnegie Mellon University

18:12-18:15 TuETS7.5

Stochastic Optimization for Autonomous Vehicles with Limited Control Authority, pp. 2395-2401.

Jones, Dylan	Oregon State University
Kuhlman, Michael J.	University of Maryland
Sofge, Donald	Naval Research Laboratory
Gupta, Satyandra K.	University of Southern California
Hollinger, Geoffrey	Oregon State University

18:15-18:18 TuETS7.6

Proactive Collision Avoidance for ASVs Using a Dynamic Reciprocal Velocity Obstacles Method, pp. 2402-2409.

Kufoalor, Dzordzoenyeny	Norwegian University of Science and Technology
Kwame Minde	
Brekke, Edmund	NTNU
Johansen, Tor Arne	Norwegian University of Science and Technology

18:18-18:21 TuETS7.7

A Multi-Task Priority Framework for Redundant Robots with Multiple Kinematic Chains under Hard Joint and Cartesian Constraints, pp. 2410-2417.

Peñalver, Antonio	Jaume I
Fernández, José Javier	University of Jaume-I
Soriano, Antonio	University of Valencia
Sanz, Pedro J	Jaume I

TuETS8 Room 2.R1
Wheeled Robots (Regular session)

Chair: Oh, Sehoon	DGIST (Daegu Gyeongbuk Institute of Science and Technology)
-------------------	---

Co-Chair: Torres-Torriti, Miguel	Pontificia Universidad Catolica De Chile
----------------------------------	--

18:00-18:03 TuETS8.1

Vision-Based Target Tracking for a Skid-Steer Vehicle Using Guided Policy Search with Field-Of-View Constraint, pp. 2418-2425.

Kim, Taewan	Seoul National University
Lee, Chungkeun	Seoul National Univ
Seo, Hoseong	Seoul National University
Choi, Seungwon	Seoul Nat'l University
Kim, Wonchul	Seoul National University
Kim, H. Jin	Seoul National University

18:03-18:06 TuETS8.2

On the Kinematics of Wheeled Motion Control of a Hybrid Wheeled-Legged CENTAURO Robot, pp. 2426-2433.

Kamedula, Malgorzata	Istituto Italiano Di Tecnologia
Kashiri, Navvab	Istituto Italiano Di Tecnologia
Tsagarakis, Nikos	Istituto Italiano Di Tecnologia

18:06-18:09 TuETS8.3

Development of Stone Throwing Robot and High Precision Driving Control for Curling, pp. 2434-2440.

Choi, Jung Hyun	DGIST
Song, ChangYong	NT Robot
Kim, Kyunghwan	NT Robot
Oh, Sehoon	DGIST (Daegu Gyeongbuk Institute of Science and Technology)

18:09-18:12 TuETS8.4

MAP - a Mobile Agile Printer Robot for On-Site Construction, pp. 2441-2448.

Sustarevas, Julius	University College London
Butters, Daniel Benjamin	University College London
Hammid, Mohammad	University College London
Stuart-Smith, Robert	University College London
Dwyer, George	University College London
Pawar, Vijay Manohar	University College London

18:12-18:15 TuETS8.5

Slip Modeling and Estimation for a Planetary Exploration Rover: Experimental Results from Mt. Etna, pp. 2449-2456.

Bussmann, Kristin	German Aerospace Center (DLR)
Meyer, Lukas	German Aerospace Center (DLR)
Steidle, Florian	German Aerospace Center
Wedler, Armin	DLR - German Aerospace Center

18:15-18:18 TuETS8.6

User-Specific Gaussian Process Model of Wheelchair Drivers with a Haptic Joystick Interface, pp. 2457-2463.

Huntemann, Alexander	Katholieke Universiteit Leuven
Vander Poorten, Emmanuel B	KU Leuven
Demeester, Eric	KU Leuven

18:18-18:21 TuETS8.7

A Minimalist Stair Climbing Robot (SCR) Formed As a Leg Balancing and Climbing Mobile Inverted Pendulum (MIP), pp. 2464-2469.

Yang, Daniel	University of California San Diego
Bewley, Thomas	Flow Control & Coordinated Robotics Labs

18:21-18:24 TuETS8.8

Tire Force Estimation of Dynamic Wheeled Mobile Robots Using Tire-Model Based Constrained Kalman Filtering, pp. 2470-2477.

Jeon, Sang-Yun	Seoul National University
Chung, Rakjoon	Seoul National University
Lee, Dongjun	Seoul National University

TuETS9 Room 4.L1
Special Session: Robot Audition (Regular session)

Chair: Okuno, Hiroshi G.	Waseda University
Co-Chair: Ince, Gokhan	Istanbul Technical University

18:00-18:03 TuETS9.1

Online Spatial Sound Perception Using Microphone Array on Mobile Robot (I), pp. 2478-2484.

Sasaki, Yoko	National Inst. of Advanced Industrial Science and Technology
Tanabe, Ryo	Tokyo University of Science
Takemura, Hiroshi	Tokyo University of Science

18:03-18:06 TuETS9.2

Extracting the Relationship between the Spatial Distribution and Types of Bird Vocalizations Using Robot Audition System HARK (I), pp. 2485-2490.

Sumitani, Shinji	Nagoya University
Suzuki, Reiji	Nagoya University
Matsubayashi, Shiho	Osaka University
Arita, Takaya	Nagoya University
Nakadai, Kazuhiro	Honda Research Inst. Japan Co., Ltd
Okuno, Hiroshi G.	Waseda University

18:06-18:09 TuETS9.3

Failure Detection Using Proprioceptive, Auditory and Visual Modalities (I), pp. 2491-2496.

Inceoglu, Arda	Istanbul Technical University
Ince, Gokhan	Istanbul Technical University
Yaslan, Yusuf	Istanbul Teknik Universitesi
Sariel, Sanem	Istanbul Technical University

18:09-18:12 TuETS9.4

HARK-Bird-Box: A Portable Real-Time Bird Song Scene Analysis System (I), pp. 2497-2502.

Kojima, Ryosuke	Tokyo Institute of Technology
Sugiyama, Osamu	Kyoto University Hospital
Hoshiba, Kotaro	Kanagawa University
Suzuki, Reiji	Nagoya University
Nakadai, Kazuhiro	Honda Research Inst. Japan Co., Ltd

18:12-18:15 TuETS9.5

Multi-Timescale Feature-Extraction Architecture of Deep Neural Networks for Acoustic Model Training from Raw Speech Signal (I), pp. 2503-2510.

Takeda, Ryu	Osaka University
Nakadai, Kazuhiro	Honda Research Inst. Japan Co., Ltd
Komatani, Kazunori	Osaka University

18:15-18:18 TuETS9.6

Tracking a Moving Sound Source from a Multi-Rotor Drone (I), pp. 2511-2516.

Wang, Lin	Queen Mary University of London
Sanchez Matilla, Ricardo	Queen Mary University of London
Cavallaro, Andrea	Queen Mary University of London

Technical Program for Wednesday October 3, 2018

WeATS1	Room 1.L5
Deep Learning VI (Regular session)	
Chair: Shafti, Ali	Imperial College London
09:00-09:03	WeATS1.1
<i>Kinematic Morphing Networks for Manipulation Skill Transfer</i> , pp. 2517-2523.	
Englert, Peter	U Stuttgart
Toussaint, Marc	University of Stuttgart
09:03-09:06	WeATS1.2
<i>Vision-Aided Absolute Trajectory Estimation Using an Unsupervised Deep Network with Online Error Correction</i> , pp. 2524-2531.	
Shamwell, Earl Jared	University of Maryland, College Park; Army Research Laboratory
Leung, Sarah	GTS/Army Research Laboratory
Nothwang, William	Army Research Laboratory
09:06-09:09	WeATS1.3
<i>Distributed Deep Reinforcement Learning Based Indoor Visual Navigation</i> , pp. 2532-2537.	
Hsu, Shih-Hsi	National Taiwan University
Chan, Shao-Hung	National Taiwan University
Wu, Ping-Tsang	National Taiwan University
Xiao, Kun	Beihang University
Fu, Li-Chen	National Taiwan University
09:09-09:12	WeATS1.4
<i>Synthesizing Neural Network Controllers with Probabilistic Model-Based Reinforcement Learning</i> , pp. 2538-2544.	
Gamboa Higuera, Juan Camilo	McGill University
Meger, David Paul	McGill University
Dudek, Gregory	McGill University
09:12-09:15	WeATS1.5
<i>Sequence-To-Sequence Model for Trajectory Planning of Nonprehensile Manipulation Including Contact Model</i> , N/A.	
Kutsuzawa, Kyo	Saitama University
Sakaino, Sho	Saitama University
Tsuji, Toshiaki	Saitama University
09:15-09:18	WeATS1.6
<i>Composite Reinforcement Learning for Social Robot Navigation</i> , pp. 2553-2558.	
Ciou, Pei Hwai	National Taiwan University
Hsiao, Yu-Ting	National Taiwan University
Wu, Zong-Ze	National Taiwan University
Tseng, Shih-Huan	National Taiwan University
Fu, Li-Chen	National Taiwan University
09:18-09:21	WeATS1.7
<i>Apple Counting Using Convolutional Neural Networks</i> , pp. 2559-2565.	
Häni, Nicolai	University of Minnesota
Roy, Pravakar	University of Minnesota
Isler, Volkan	University of Minnesota
09:21-09:24	WeATS1.8
<i>Target Localization with Drones Using Mobile CNNs</i> , pp. 2566-2573.	
Lu, Yongxi	University of California San Diego
Wang, Zeyangyi	University of California, San Diego

Tang, Ziyao	University of California, San Diego
Javidi, Tara	University of California, San Diego

WeATS2	Room 2.L5 KUKA
Sensors (Regular session)	
Chair: Kwon, Dong-Soo	KAIST
Co-Chair: Svoboda, Tomas	Faculty of Electrical Engineering, Czech Technical University in Prague
09:00-09:03	WeATS2.1
<i>A Plenum Based Calibration Device for Tactile Sensor Arrays</i> , N/A.	
Kangro, Joan	Italian Institute of Technology
Vazhapilli Sureshabu, Anand	Istituto Italiano Di Tecnologia
Traversaro, Silvio	Istituto Italiano Di Tecnologia
Pucci, Daniele	Italian Institute of Technology
Nori, Francesco	DeepMind
09:03-09:06	WeATS2.2
<i>An Adjustable Force Sensitive Sensor with an Electromagnet for a Soft, Distributed, Digital 3-Axis Skin Sensor</i> , pp. 2582-2588.	
Holgado, Alexis Carlos	Waseda University
Alvarez Lopez, Javier Alejandro	Waseda University, Sugano Lab
Schmitz, Alexander	Waseda University
Tomo, Tito Pradhono	Waseda University
Somlor, Sophon	Waseda University
Jamone, Lorenzo	Queen Mary University London
Sugano, Shigeki	Waseda University
09:06-09:09	WeATS2.3
<i>Object Recognition through Active Sensing Using a Multi-Fingered Robot Hand with 3D Tactile Sensors</i> , pp. 2589-2595.	
Funabashi, Satoshi	Waseda University, Sugano Lab
Morikuni, Shu	Waseda University, Graduate School of Creative Science and Engin
Geier, Andreas	Waseda University
Schmitz, Alexander	Waseda University
Ogasa, Shun	Waseda University, Graduate School of Creative Science, Engineer
Tomo, Tito Pradhono	Waseda University
Somlor, Sophon	Waseda University
Sugano, Shigeki	Waseda University
09:09-09:12	WeATS2.4
<i>Sensory-Motor Augmentation of the Robot with Shared Human Perception</i> , pp. 2596-2603.	
Ishida, Ryuya	Nagoya Institute of Technology
Meli, Leonardo	University of Siena
Tanaka, Yoshihiro	Nagoya Institute of Technology
Minamizawa, Kouta	Keio University
Prattichizzo, Domenico	Università Di Siena
09:12-09:15	WeATS2.5
<i>Data-Driven Policy Transfer with Imprecise Perception Simulation</i> , N/A.	
Pecka, Martin	Czech Technical University in Prague
Zimmermann, Karel	Czech Technical University Prague
Petrlík, Matej	Czech Technical University in

	Prague, Faculty of Electrical Engi	
Svoboda, Tomas	Faculty of Electrical Engineering, Czech Technical University In	
09:15-09:18	WeATS2.6	
<i>HTC Vive: Analysis and Accuracy Improvement</i> , pp. 2610-2615.		
Borges, Miguel	Instituto Superior Técnico	
Symington, Andrew	Stinger Ghaffarian Technologies	
Coltin, Brian	Carnegie Mellon University	
Smith, Trey	NASA Ames Research Center	
Ventura, Rodrigo	Instituto Superior Técnico	
09:18-09:21	WeATS2.7	
<i>Improving Indoor Robots Localisation by Fusing Different Sensors</i> , pp. 2616-2623.		
Alvarado, Biel Piero Eloy	Universidad Politécnica De Madrid	
Matia, Fernando	Universidad Politecnica De Madrid	
Galan, Ramon	Universidad Politecnica De Madrid	
09:21-09:24	WeATS2.8	
<i>Robust Camera Pose Estimation Via Consensus on Ray Bundle and Vector Field</i> , pp. 2624-2631.		
Li, Haoang	Wuhan University	
Zhao, Ji	ReadSense Ltd	
Bazin, Jean-Charles	CVG/CGL, ETHZ	
Luo, Lei	Wuhan University	
Wu, Junlin	Wuhan University	
Yao, Jian	Wuhan University	
WeATS3	Room 1.L2	
Localization and Mapping VI (Regular session)		
Chair: Ohno, Kazunori	Tohoku University	
Co-Chair: Cheng, Hui	JD.COM	
09:00-09:03	WeATS3.1	
<i>Challenges in Monocular Visual Odometry: Photometric Calibration, Motion Bias and Rolling Shutter Effect</i> , N/A.		
Yang, Nan	Technical University of Munich	
Wang, Rui	Technical University of Munich	
Gao, Xiang	Technical University of Munich	
Cremers, Daniel	Technical University of Munich	
09:03-09:06	WeATS3.2	
<i>Integrating Deep Semantic Segmentation into 3D Point Cloud Registration</i> , N/A.		
Zaganidis, Anestis	University of Lincoln	
Sun, Li	University of Birmingham	
Duckett, Tom	University of Lincoln	
Cielniak, Grzegorz	University of Lincoln	
09:06-09:09	WeATS3.3	
<i>Probabilistic Terrain Mapping for Mobile Robots with Uncertain Localization</i> , N/A.		
Fankhauser, Péter	ETH Zurich	
Bloesch, Michael	Imperial College	
Hutter, Marco	ETH Zurich	
09:09-09:12	WeATS3.4	
<i>Colourising Point Clouds Using Independent Cameras</i> , N/A.		
Vechersky, Pavel	CSIRO	
Cox, Mark	CSIRO	
Borges, Paulo Vinicius	CSIRO	

Koerich		
Lowe, Tom		CSIRO
09:12-09:15	WeATS3.5	
<i>Local Positioning System Using UWB Range Measurements for an Unmanned Blimp</i> , N/A.		
Mai, Vincent		Université De Montréal
Kamel, Mina		Autonomous Systems Lab, ETH Zurich
Krebs, Matthias		ETH Zurich
Schaffner, Andreas		ETH Zurich
Meier, Daniel		ETH Zurich
Paull, Liam		Université De Montréal
Sieglwart, Roland		ETH Zurich
09:15-09:18	WeATS3.6	
<i>IBoW-LCD: An Appearance-Based Loop Closure Detection Approach Using Incremental Bags of Binary Words</i> , N/A.		
Garcia-Fidalgo, Emilio		University of the Balearic Islands
Ortiz, Alberto		University of the Balearic Islands
09:18-09:21	WeATS3.7	
<i>Efficient Map Representations for Multi-Dimensional Normal Distributions Transforms</i> , pp. 2679-2686.		
Schulz, Cornelia		University of Tübingen
Hanten, Richard		University of Tübingen
Zell, Andreas		University of Tübingen
09:21-09:24	WeATS3.8	
<i>DynaSLAM: Tracking, Mapping and Inpainting in Dynamic Scenes</i> , N/A.		
Bescos, Berta		University of Zaragoza
Fácil, José M.		Universidad De Zaragoza
Civera, Javier		Universidad De Zaragoza
Neira, José		Universidad De Zaragoza
WeATS4	Room 2.L2	
Legged Robots III (Regular session)		
Chair: Mombaur, Katja		Heidelberg University
Co-Chair: Khamis, Alaa		University of Waterloo
09:00-09:03	WeATS4.1	
<i>Modeling and Control of an Articulated Tail for Maneuvering a Reduced Degree of Freedom Legged Robot</i> , pp. 2695-2700.		
Saab, Wael		Virginia Tech
Yang, Jiteng		Virginia Tech
Ben-Tzvi, Pinhas		Virginia Tech
09:03-09:06	WeATS4.2	
<i>Modeling and Fuzzy Control of One-Legged Somersaulting Robot</i> , pp. 2701-2706.		
Zabihi, Mehdi		Sharif University of Technology
Alasty, Aria		Sharif University of Technology
09:06-09:09	WeATS4.3	
<i>Towards a Passive Adaptive Planar Foot with Ground Orientation and Contact Force Sensing for Legged Robots</i> , pp. 2707-2714.		
Käslin, Roman		ETH Zurich
Kolvenbach, Hendrik		ETHZ
Paez, Laura		KM-RoBoTa
Lika, Klajd		National Technical University of Athens
Hutter, Marco		ETH Zurich
09:09-09:12	WeATS4.4	
<i>SLIP-Model-Based Dynamic Motion Transition between Different Fixed Points in One Stride in a Leg-Wheel Transformable Robot</i> ,		

pp. 2715-2720.

Lin, Hung-Sheng	National Taiwan University
Lin, Yun-Meng	National Taiwan University
Lin, Pei-Chun	National Taiwan University

09:12-09:15 WeATS4.5

Continuous Shape Changing Locomotion of 32-Legged Spherical Robot, pp. 2721-2726.

Nozaki, Hiroki	Keio University
Kujirai, Yusei	Keio University
Niiyama, Ryuma	University of Tokyo
Kawahara, Yoshihiro	The University of Tokyo
Yonezawa, Takuro	Keio University
Nakazawa, Jin	Keio University

09:15-09:18 WeATS4.6

End-Effector with a Hook and Two Fingers for the Locomotion and Simple Work of a Four-Limbed Robot, pp. 2727-2732.

Matsuzawa, Takashi	Waseda University
Imai, Asaki	Waseda University
Hashimoto, Kenji	Meiji University
Teramachi, Tomotaka	Waseda University
Sun, Xiao	Waseda University
Kimura, Shunsuke	Waseda University
Sakai, Nobuaki	Waseda University
Yoshida, Yuki	Waseda University
Kumagai, Kengo	Waseda University
Matsubara, Takanobu	Waseda University
Yamaguchi, Koki	WASEDA University
Takanishi, Atsuo	Waseda University

09:18-09:21 WeATS4.7

A Framework for Modeling Closed Kinematic Chains with a Focus on Legged Robots, pp. 2733-2738.

Kamidi, Vinaykarthik	Robotics and Mechatronics Lab
Williams, Adam	Virginia Tech
Ben-Tzvi, Pinhas	Virginia Tech

09:21-09:24 WeATS4.8

Steering of an Underactuated Legged Robot through Terrain Contact with an Active Tail, pp. 2739-2746.

Casarez, Carlos	University of California, Berkeley
Fearing, Ronald	University of California at Berkeley

WeATS5 Room 2.R3 **Prosthetics and Exoskeletons I** (Regular session)

Chair: Moreno, Luis	Carlos III University
Co-Chair: Fontana, Marco	University of Trento

09:00-09:03 WeATS5.1

Characterization of Active/Passive Pneumatic Actuators for Assistive Devices, pp. 2747-2754.

Kaneishi, Daisuke	University of California, Berkeley
Matthew, Robert, Peter	UC Berkeley
Tomizuka, Masayoshi	University of California

09:03-09:06 WeATS5.2

Unpowered Lower-Body Exoskeleton with Torso Lifting Mechanism for Supporting Sit-To-Stand Transitions, pp. 2755-2761.

Paez Granados, Diego Felipe	University of Tsukuba
Kadone, Hideki	University of Tsukuba
Suzuki, Kenji	University of Tsukuba

09:06-09:09 WeATS5.3

Development of Master-Slave Type Lower Limb Motion Teaching System, pp. 2762-2767.

Tagami, Toshihiro	Tokyo Medical and Dental University
Kawase, Toshihiro	Tokyo Medical and Dental University
Morisaki, Daisuke	Tokyo Medical and Dental University
Miyazaki, Ryoken	Tokyo Medical and Dental University
Miyazaki, Tetsuro	Tokyo Medical and Dental University
Kanno, Takahiro	Tokyo Medical and Dental University
Kawashima, Kenji	Tokyo Medical and Dental University

09:09-09:12 WeATS5.4

Design and Experimental Characterisation of a Hydrostatic Transmission for Upper Limb Exoskeletons, pp. 2768-2773.

Bolignari, Marco	University of Trento
Moretti, Giacomo	Scuola Sant'Anna
Fontana, Marco	University of Trento

09:12-09:15 WeATS5.5

Development of Tendon Driven Under-Actuated Mechanism Applied in an EMG Prosthetic Hand with Three Major Grasps for Daily Life, pp. 2774-2779.

Jing, Xiaobei	The University of Electro-Communications, Shenzhen Institutes Of
Yong, Xu	The University of Electro-Communications, Shenzhen Institutes Of
Tian, Lan	Shenzhen Institutes of Advanced Technology Chinese Academy of Sc
Togo, Shunta	Graduate School of Informatics and Engineering, the University O
Jiang, Yinlai	The University of Electro-Communications
Yokoi, Hiroshi	The University of Electro-Communications
Li, Guanglin	Shenzhen Institutes of Advanced Technology Chinese

09:15-09:18 WeATS5.6

Muscle Activation Source Model-Based Ssem Signal Decomposition and Recognition of Interface Rotation, pp. 2780-2786.

Kim, Minjae	POSTECH
Chung, Wan Kyun	POSTECH

09:18-09:21 WeATS5.7

Design, Control and Preliminary Test of Robotic Ankle Prosthesis, pp. 2787-2793.

Sun, Xiaojun	The University of Tokyo
Sugai, Fumihito	The University of Tokyo
Okada, Kei	The University of Tokyo
Inaba, Masayuki	The University of Tokyo

09:21-09:24 WeATS5.8

Design Criteria for Hand Exoskeletons: Measurement of Forces Needed to Assist Finger Extension in Traumatic Brain Injury Patients, N/A..

Nycz, Christopher J	Worcester Polytechnic Institute
Meier, Tess B.	Worcester Polytechnic Institute
Carvalho, Paulo	Worcester Polytechnic Institute
Meier, Gretchen R.	Pine Bush Physical Therapy

Fischer, Gregory Scott Worcester Polytechnic Institute, WPI

WeATS6		Room 1.L3
Human-Robot Interaction V (Regular session)		
Chair: Prattichizzo, Domenico	University of Siena	
Co-Chair: Ghalamzan Esfahani, Amir Masoud	University of Birmingham	
09:00-09:03		WeATS6.1
Operator Awareness in Human-Robot Collaboration through Wearable Vibrotactile Feedback, N/A..		
Casalino, Andrea	Politecnico Di Milano	
Messeri, Costanza	Politecnico Di Milano	
Pozzi, Maria	University of Siena	
Zanchettin, Andrea Maria	Politecnico Di Milano	
Rocco, Paolo	Politecnico Di Milano	
Prattichizzo, Domenico	University of Siena	
09:03-09:06		WeATS6.2
Human Intention Detection As a Multiclass Classification Problem: Application in Physical Human-Robot Interaction While Walking, N/A.		
Lanini, Jessica	EPFL, Biorobotics Laboratory	
Razavi, Hamed	EPFL	
Urain, Julien	IK4 - Tekniker	
Ijspeert, Auke	EPFL	
09:06-09:09		WeATS6.3
Trust and Social Engineering in Human Robot Interaction: Will a Robot Make You Disclose Sensitive Information, Conform to Its Recommendations or Gamble?, N/A.		
Aroyo, Alexander Mois	Istituto Italiano Di Tecnologia	
Rea, Francesco	Istituto Italiano Di Tecnologia	
Sandini, Giulio	Italian Institute of Technology	
Sciutti, Alessandra	Istituto Italiano Di Tecnologia	
09:09-09:12		WeATS6.4
FlyCam: Multi-Touch Gesture Controlled Drone Gimbal Photography, N/A.		
Kang, Hao	Purdue University	
Li, Haoxiang	Adobe Research	
Zhang, Jianming	Adobe Research	
Lu, Xin	Adobe Research	
Benes, Bedrich	Purdue University	
09:12-09:15		WeATS6.5
Haptic-Based Shared-Control Methods for a Dual-Arm System, N/A.		
Selvaggio, Mario	Università Degli Studi Di Napoli Federico II	
Abi-Farraj, Firas	CNRS-Irisa	
Pacchierotti, Claudio	Centre National De La Recherche Scientifique (CNRS)	
Robuffo Giordano, Paolo	Centre National De La Recherche Scientifique (CNRS)	
Siciliano, Bruno	Univ. Napoli Federico II	
09:15-09:18		WeATS6.6
How Should a Robot React before People's Touch?: Modeling a Pre-Touch Reaction Distance for a Robot's Face, N/A.		
Shiomi, Masahiro	ATR	
Shatani, Kodai	Osaka Univ	
Minato, Takashi	ATR	
Ishiguro, Hiroshi	Osaka University	
09:18-09:21		WeATS6.7

A Method for Robot Motor Fatigue Management in Physical Interaction and Human-Robot Collaboration Tasks, pp. 2850-2856.

Peternel, Luka Istituto Italiano Di Tecnologia
Tsagarakis, Nikos Istituto Italiano Di Tecnologia
Ajoudani, Arash Istituto Italiano Di Tecnologia

09:21-09:24 WeATS6.8

Adaptive Task Planner for Performing Home Service Tasks in Cooperation with a Human, pp. 2857-2864.

Lee, Seung-Jae KAIST
Park, Jin-Man KAIST
Kim, Deok-Hwa KAIST
Kim, Jong-Hwan KAIST

WeATS7 Room 2.L3

Space Robotics (Regular session)

Co-Chair: Daney, David Inria Bordeaux - Sud Ouest

09:00-09:03 WeATS7.1

Design of SUPERball V2, a Compliant Tensegrity Robot for Absorbing Large Impacts, pp. 2865-2871.

Vespignani, Massimo Usra / Nasa Arc-Ti
Friesen, Jeffrey Michael University of California, San Diego

SunSpiral, Vytas SGT Inc. / NASA Ames Research Center

Bruce, Jonathan Usra / Nasa Arc-Ti

09:03-09:06 WeATS7.2

Slip Avoidance in Dual-Arm Manipulation, pp. 2872-2879.

Carabis, David Rensselaer Polytechnic Institute
Wen, John Rensselaer Polytechnic Institute

09:06-09:09 WeATS7.3

Relative and Inertial Attitude Determination in Three-Vehicle Long Formations, pp. 2880-2885.

Cruz, Pedro Instituto Superior Tecnico, Universidade De Lisboa

Batista, Pedro Instituto Superior Técnico, Universidade De Lisboa

09:09-09:12 WeATS7.4

Steerable Locomotion Controller for Six-Strut Icosahedral Tensegrity Robots, pp. 2886-2892.

Vespignani, Massimo Usra / Nasa Arc-Ti
Ercolani, Chiara EPFL
Friesen, Jeffrey Michael University of California, San Diego

Bruce, Jonathan Usra / Nasa Arc-Ti

09:12-09:15 WeATS7.5

Series Elastic Tether Management for Rappelling Rovers, pp. 2893-2900.

Brown, Travis NASA Jet Propulsion Laboratory, California Institute of Technolo

Stefanini, Alessandro Politecnico Di Torino
Georgiev, Nikola Caltech

Sawoniewicz, Jacek NASA Jet Propulsion Laboratory, California Institute of Technolo

Nesnas, Issa Jet Propulsion Laboratory

09:15-09:18 WeATS7.6

Image Based Visual Servoing for Tumbling Objects, pp. 2901-2908.

P, Mithun International Institute of Information Technology Hyderabad

Pandya, Harit IIIT Hyderabad

Gaud, Ayush	International Institute of Information Technology Hyderabad
Shah, Suril Vijaykumar	Indian Institute of Technology Jodhpur
Krishna, Madhava	IIIT Hyderabad
09:18-09:21	WeATS7.7
<i>Online Path Planning and Compliance Control of Space Robot for Capturing Tumbling Large Object</i> , pp. 2909-2916.	
Hirano, Daichi	Japan Aerospace Exploration Agency
Kato, Hiroki	Japan Aerospace Exploration Agency
Saito, Tatsuhiko	Japan Aerospace Exploration Agency
WeATS8 Room 2.R1	
Grasping I (Regular session)	
Chair: Zanchettin, Andrea	Politecnico Di Milano
Co-Chair: Ortenzi, Valerio	Queensland University of Technology / ACRV
09:00-09:03	WeATS8.1
<i>Workspace Aware Online Grasp Planning</i> , pp. 2917-2924.	
Akinola, Ireaiyo	Columbia University
Varley, Jacob	Columbia University
Chen, Boyuan	Columbia University
Allen, Peter	Columbia University
09:03-09:06	WeATS8.2
<i>Robotic Grasping Using Proximity Sensors for Detecting Both Target Object and Support Surface</i> , pp. 2925-2932.	
Sasaki, Koichi	The University of Electro Communications
Koyama, Keisuke	University of Tokyo
Ming, Aiguo	The University of Electro- Communications
Shimojo, Makoto	University of Electro- Communications
Plateaux, Régis	ISMEP (SUPMECA)
Choley, Jean-Yves	SUPMECA-LISMMA
09:06-09:09	WeATS8.3
<i>Model-Free and Learning-Free Grasping by Local Contact Moment Matching</i> , pp. 2933-2940.	
Adjigble, Komlan Jean Maxime	University of Birmingham
Marturi, Naresh	University of Birmingham
Ortenzi, Valerio	Queensland University of Technology / ACRV
Rajasekaran, Vijaykumar	University of Birmingham
Corke, Peter	Queensland University of Technology
Stolkin, Rustam	University of Birmingham
09:09-09:12	WeATS8.4
<i>A Framework for Robot Grasping Transferring with Non-Rigid Transformation</i> , pp. 2941-2948.	
Lin, Hsien-Chung	University of California, Berkeley
Tang, Te	University of California, Berkeley
Fan, Yongxiang	University of California, Berkeley
Tomizuka, Masayoshi	University of California
09:12-09:15	WeATS8.5
<i>Using Human Studies to Analyze Capabilities in Underactuated and Compliant Hands in Manipulation Tasks</i> , pp. 2949-2954.	

Morrow, John	Oregon State University
Kothari, Ammar	Oregon State University
Ong, Yi Herng	Oregon State University
Harlan, Nathan	Oregon State University
Balasubramanian, Ravi	Oregon State University
Grimm, Cindy	Oregon State University
09:15-09:18	WeATS8.6
<i>Affordance Wayfields for Task and Motion Planning</i> , pp. 2955-2962.	
McMahon, Troy	University of Michigan
Jenkins, Odest Chadwicke	University of Michigan
Amato, Nancy	Texas A&M University
09:18-09:21	WeATS8.7
<i>Tactile Regrasp: Grasp Adjustments Via Simulated Tactile Transformations</i> , pp. 2963-2970.	
Hogan, Francois	Massachusetts Institute of Technology
Bauza Villalonga, Maria	Massachusetts Institute of Technology
Canal Anton, Oleguer	Massachusetts Institute of Technology
Donlon, Elliott	MIT
Rodriguez, Alberto	Massachusetts Institute of Technology
09:21-09:24	WeATS8.8
<i>Adaptive Autonomous Grasp Selection Via Pairwise Ranking</i> , pp. 2971-2976.	
Kent, David	Georgia Institute of Technology
Toris, Russell	Fetch Robotics
WeATS9 Room 4.L1	
Model Learning for Control (Regular session)	
Chair: Hein, Björn	Karlsruhe Institute of Technology (KIT)
09:00-09:03	WeATS9.1
<i>Experience-Based Model Selection to Enable Long-Term, Safe Control for Repetitive Tasks under Changing Conditions</i> , pp. 2977-2984.	
McKinnon, Christopher	University of Toronto
Schoellig, Angela P.	University of Toronto
09:03-09:06	WeATS9.2
<i>Efficient Model Identification for Tensegrity Locomotion</i> , pp. 2985-2990.	
Zhu, Shaojun	Rutgers University
Surovik, David	Rutgers University
Bekris, Kostas E.	Rutgers, the State University of New Jersey
Boularias, Abdeslam	Carnegie Mellon University
09:06-09:09	WeATS9.3
<i>Robot-Driven Trajectory Improvement for Feeding Tasks</i> , pp. 2991-2996.	
Rhodes, Travers	Carnegie Mellon University
Veloso, Manuela	Carnegie Mellon University
09:09-09:12	WeATS9.4
<i>Accelerating Learning in Constructive Predictive Frameworks with the Successor Representation</i> , pp. 2997-3003.	
Sherstan, Craig	University of Alberta
Machado, Marlos C	University of Alberta
Pilarski, Patrick M.	University of Alberta
09:12-09:15	WeATS9.5
<i>Reinforcement Learning with Symbolic Input-Output Models</i> , pp.	

3004-3009.	
Derner, Erik	Czech Technical University in Prague
Kubalik, Jiri	CTU in Prague
Babuska, Robert	Delft University of Technology
09:15-09:18	WeATS9.6
<i>A Framework for Teaching Impedance Behaviours by Combining Human and Robot 'Best Practice', pp. 3010-3015.</i>	
Zhao, YuChen	King's College London
Sena, Aran	King's College London
Wu, Fan	King's College London
Howard, Matthew	King's College London
09:18-09:21	WeATS9.7
<i>Automated Tuning of Nonlinear Model Predictive Controller by Reinforcement Learning, pp. 3016-3021.</i>	
Mehndiratta, Mohit	Nanyang Technological University
Camci, Efe	Nanyang Technological University
Kayacan, Erdal	Aarhus University
09:21-09:24	WeATS9.8
<i>Soft-Obstacle Avoidance for Redundant Manipulators with Recurrent Neural Network, pp. 3022-3027.</i>	
Li, Yangming	University of Washington
Hannaford, Blake	University of Washington
WeATS10	Room 4.R1
Special Session: Deep Learning in Robotics (Regular session)	
Chair: Demiris, Yiannis	Imperial College London
Co-Chair: Calandra, Roberto	University of California Berkeley
09:00-09:03	WeATS10.1
<i>Motion-Based Object Segmentation Based on Dense RGB-D Scene Flow, N/A.</i>	
Shao, Lin	Stanford University
Shah, Parth	Stanford University
Dwaracherla, Vikranth	Stanford University
Bohg, Jeannette	Stanford University
09:03-09:06	WeATS10.2
<i>Learning a Structured Neural Network Policy for a Hopping Task, N/A.</i>	
Viereck, Julian	Max Planck Institute for Intelligent Systems
Kozolinsky, Jules	École Normale Supérieure Paris-Saclay
Herzog, Alexander	X, Inc. (Google)
Righetti, Ludovic	New York University
09:06-09:09	WeATS10.3
<i>GONet: A Semi-Supervised Deep Learning Approach for Traversability Estimation, pp. 3044-3051.</i>	
Hirose, Noriaki	Toyota Central R&D Labs., INC
Sadeghian, Amir	Stanford University
Vázquez, Marynel	Carnegie Mellon University
Goebel, Patrick	Stanford University
Savarese, Silvio	Stanford University
09:09-09:12	WeATS10.4
<i>Motion Planning among Dynamic, Decision-Making Agents with Deep Reinforcement Learning, pp. 3052-3059.</i>	
Everett, Michael	Massachusetts Institute of Technology
Chen, Yufan	Massachusetts Institute of Technology

How, Jonathan Patrick	Massachusetts Institute of Technology
09:12-09:15	WeATS10.5
<i>Real-Time Workload Classification During Driving Using HyperNetworks, pp. 3060-3065.</i>	
Wang, Ruohan	Imperial College London
Amadori, Pierluigi Vito	Imperial College London
Demiris, Yiannis	Imperial College London
09:15-09:18	WeATS10.6
<i>Augmenting Physical Simulators with Stochastic Neural Networks: Case Study of Planar Pushing and Bouncing, pp. 3066-3073.</i>	
Ajay, Anurag	MIT
Wu, Jiajun	MIT
Fazeli, Nima	Massachusetts Institute of Technology
Bauza Villalonga, Maria	Massachusetts Institute of Technology
Kaelbling, Leslie	MIT
Tenenbaum, Joshua	Massachusetts Institute of Technology
Rodriguez, Alberto	Massachusetts Institute of Technology
WeBTS1	Room 1.L5
Deep Learning VII (Regular session)	
Chair: Caldwell, Darwin G.	Istituto Italiano Di Tecnologia
Co-Chair: Burrus, Nicolas	Occipital
11:30-11:33	WeBTS1.1
<i>Learning to Pour Using Deep Deterministic Policy Gradients, pp. 3074-3079.</i>	
Do, Chau	University of Freiburg
Gordillo Chaves, Camilo Andres	University of Freiburg
Burgard, Wolfram	University of Freiburg
11:33-11:36	WeBTS1.2
<i>Learning Sample-Efficient Target Reaching for Mobile Robots, pp. 3080-3087.</i>	
Khan, Arbaaz	University of Pennsylvania
Kumar, Vijay	University of Pennsylvania
Ribeiro, Alejandro	University of Pennsylvania
11:36-11:39	WeBTS1.3
<i>Generative Modeling of Multimodal Multi-Human Behavior, pp. 3088-3095.</i>	
Ivanovic, Boris	Stanford University
Schmerling, Edward	Stanford University
Leung, Karen Yan Ming	Stanford University
Pavone, Marco	Stanford University
11:39-11:42	WeBTS1.4
<i>Predicting Part Affordances of Objects Using Two-Stream Fully Convolutional Network with Multimodal Inputs, pp. 3096-3101.</i>	
Chaudhary, Krishneel Chand	The University of Tokyo
Chen, Xiangyu	The University of Tokyo
Okada, Kei	The University of Tokyo
Inaba, Masayuki	The University of Tokyo
11:42-11:45	WeBTS1.5
<i>Deep Multi-Sensor Lane Detection, pp. 3102-3109.</i>	
Bai, Min	University of Toronto and Uber Advanced Technologies Group
Mattyus, Gellert	Uber ATG
Homayounfar, Namdar	Uber ATG
Wang, Shenlong	University of Toronto

Kowshika Lakshmikanth, Shrinidhi	Uber
Urtasun, Raquel	University of Toronto
11:45-11:48	WeBTS1.6
<i>Deep Reinforcement Learning to Acquire Navigation Skills for Wheel-Legged Robots in Complex Environments</i> , pp. 3110-3116.	
Chen, Xi	KTH
Ghadirzadeh, Ali	KTH Royal Institute of Technology
Folkesson, John	KTH
Björkman, Mårten	KTH
Jensfelt, Patric	KTH - Royal Institute of Technology
11:48-11:51	WeBTS1.7
<i>Learning and Generalization of Dynamic Movement Primitives by Hierarchical Deep Reinforcement Learning from Demonstration</i> , pp. 3117-3123.	
Kim, Wonchul	Seoul National University
Lee, Chungkeun	Seoul National Univ
Kim, H. Jin	Seoul National University
11:51-11:54	WeBTS1.8
<i>Fast Shadow Detection from a Single Image Using a Patched Convolutional Neural Network</i> , pp. 3124-3129.	
Hosseinzadeh, Sepideh	University of Alberta
Shakeri, Moein	University of Alberta
Zhang, Hong	University of Alberta
WeBTS2	Room 2.L5 KUKA
Sensor Networks (Regular session)	
Chair: Lee, C. S. George	Purdue University
Co-Chair: Hagita, Norihiro	ATR
11:30-11:33	WeBTS2.1
<i>Robust Decentralized Context-Aware Sensor Fault Detection with In-Place Self-Calibration</i> , pp. 3130-3136.	
Paneque, Julio L.	University of Sevilla
Martinez-de-Dios, Jose Ramiro	University of Seville
Ollero, Anibal	University of Seville
11:33-11:36	WeBTS2.2
<i>Heterogeneous Sensor-Robot Team Positioning and Mixed Strategy Scheduling</i> , pp. 3137-3144.	
Hartman, Benjamin	Government
Tatum, Richard	NSWCPCD
Bays, Matthew	Naval Surface Warfare Center
11:36-11:39	WeBTS2.3
<i>Robotic Subsurface Pipeline Mapping with a Ground-Penetrating Radar and a Camera</i> , pp. 3145-3150.	
Li, Haifeng	Civil Aviation University of China
Chou, Chieh	Texas A&M University
Fan, Longfei	Civil Aviation University of China
Li, Binbin	Texas A&M University
Wang, Di	Texas A&M University
Song, Dezheng	Texas A&M University
11:39-11:42	WeBTS2.4
<i>UAV Based Wireless Charging of Sensor Networks without Prior Knowledge</i> , pp. 3151-3158.	
Najeeb, Najeeb	University of Nebraska-Lincoln
Detweiler, Carrick	University of Nebraska-Lincoln
11:42-11:45	WeBTS2.5
<i>Mobile Robot Localization Considering Class of Sensor</i>	

<i>Observations</i> , pp. 3159-3166.	
Akai, Naoki	Nagoya University
Morales Saiki, Luis Yoichi	ATR / Nagoya University
Murase, Hiroshi	Nagoya University
11:45-11:48	WeBTS2.6
<i>Robust Odometry Using Sensor Consensus Analysis</i> , pp. 3167-3173.	
Palmer, Andrew William	Siemens
Nourani-Vatani, Navid	Siemens
11:48-11:51	WeBTS2.7
<i>Octree Map Based on Sparse Point Cloud and Heuristic Probability Distribution for Labeled Images</i> , pp. 3174-3181.	
Berrio Perez, Julie Stephany	ACFR - the University of Sydney
Zhou, Wei	University of Sydney
Ward, James Robert	University of Sydney
Worrall, Stewart	University of Sydney
Nebot, Eduardo	University of Sydney
11:51-11:54	WeBTS2.8
<i>SuMo-SS: Submodular Optimization Sensor Scattering for Deploying Sensor Networks by Drones</i> , N/A.	
Sugiura, Komei	National Institute of Information and Communications Tech

WeBTS3	Room 1.L2
Localization and Mapping VII (Regular session)	
Chair: Dias, Jorge	University of Coimbra
Co-Chair: Asmar, Daniel	American University of Beirut
11:30-11:33	WeBTS3.1
<i>Human-In-The-Loop Augmented Mapping</i> , pp. 3190-3195.	
Sidaoui, Abbas	American University of Beirut
Elhajj, Imad	American University of Beirut
Asmar, Daniel	American University of Beirut
11:33-11:36	WeBTS3.2
<i>VLASE: Vehicle Localization by Aggregating Semantic Edges</i> , pp. 3196-3203.	
Yu, Xin	University of Utah
Chaturvedi, Sagar	American Family Insurance
Feng, Chen	New York University
Taguchi, Yuichi	Mitsubishi Electric Research Labs
Lee, Teng-Yok	Mitsubishi Electric Research Laboratories
Fernandes, Clinton	University of Utah
Ramalingam, Srikumar	University of Utah
11:36-11:39	WeBTS3.3
<i>A B-Spline Mapping Framework for Long-Term Autonomous Operations</i> , pp. 3204-3209.	
T. Rodrigues, Rômulo	Faculty of Engineering, University of Porto
Aguiar, A. Pedro	Faculty of Engineering, University of Porto (FEUP)
Pascoal, Antonio	Instituto Superior Tecnico
11:39-11:42	WeBTS3.4
<i>Building Dense Reflectance Maps of Indoor Environments Using an RGB-D Camera</i> , pp. 3210-3217.	
Krawez, Michael	University of Freiburg
Caseltiz, Tim	University of Freiburg
Büscher, Daniel	Albert-Ludwigs-Universität Freiburg
Van Loock, Mark	Toyota Motor Europe NV/SA

Burgard, Wolfram	University of Freiburg
11:42-11:45	WeBTS3.5
<i>3D Underground Mapping with a Mobile Robot and a GPR Antenna</i> , pp. 3218-3224.	
Kouros, Georgios	CERTH
Kostavelis, Ioannis	Center for Research and Technology Hellas
Skartados, Evangelos	CERTH, Thessaloniki, Greece
Giakoumis, Dimitris	Centre for Research and Technology Hellas
Simi, Alessandro	IDS GeoRadar
Guido, Manacorda	IDS GeoRadar
Tzovaras, Dimitrios	Centre for Research and Technology Hellas
11:45-11:48	WeBTS3.6
<i>Adaptive Baseline Monocular Dense Mapping with Inter-Frame Depth Propagation</i> , pp. 3225-3232.	
Wang, Kaixuan	Hong Kong University of Science and Technology
Shen, Shaojie	Hong Kong University of Science and Technology
11:48-11:51	WeBTS3.7
<i>Real Time Incremental Foveal Texture Mapping for Autonomous Vehicles</i> , pp. 3233-3240.	
Kumar, Ashish	Indian Institute of Technology, Kanpur
McBride, James	Ford Motor Company
Pandey, Gaurav	Ford Motor Company
11:51-11:54	WeBTS3.8
<i>Directional Grid Maps: Modeling Multimodal Angular Uncertainty in Dynamic Environments</i> , pp. 3241-3248.	
Senanayake, Ransalu	University of Sydney
Ramos, Fabio	University of Sydney
WeBTS4	Room 2.L2
Legged Robots IV (Regular session)	
Chair: Vasudevan, Ram	University of Michigan
Co-Chair: Malzahn, Jörn	Istituto Italiano Di Tecnologia
11:30-11:33	WeBTS4.1
<i>On the Dynamic Similarity between Bipeds and Quadrupeds: A Case Study on Bounding</i> , N/A.	
Gan, Zhenyu	University of Michigan
Jiao, Ziyuan	The University of Michigan
Remy, C. David	University of Michigan
11:33-11:36	WeBTS4.2
<i>The Effect of Swing Leg Retraction on Biped Walking Stability Is Influenced by the Walking Speed and Step-Length</i> , pp. 3257-3262.	
Bao, Ruizhi	Brunel University
Geng, Tao	Middlesex University
11:36-11:39	WeBTS4.3
<i>Body Flexibility Effects on Foot Loading in Quadruped Bounding Based on a Simple Analytical Model</i> , N/A.	
Kamimura, Tomoya	Kyoto University
Aoi, Shinya	Kyoto University
Tsuchiya, Kazuo	Kyoto University
Matsuno, Fumitoshi	Kyoto University
11:39-11:42	WeBTS4.4
<i>Application of Wrench Based Feasibility Analysis to the Online Trajectory Optimization of Legged Robots</i> , N/A.	
Orsolino, Romeo	Istituto Italiano Di Tecnologia

Focchi, Michele	Fondazione Istituto Italiano Di Tecnologia
Mastalli, Carlos	CNRS
Dai, Hongkai	Massachusetts Institute of Technology
Caldwell, Darwin G.	Istituto Italiano Di Tecnologia
Semini, Claudio	Istituto Italiano Di Tecnologia
11:42-11:45	WeBTS4.5
<i>An Analytical Study on Trotting at Constant Velocity and Height</i> , pp. 3279-3284.	
Machairas, Konstantinos	National Technical University of Athens
Papadopoulos, Evangelos	National Technical University of Athens
11:45-11:48	WeBTS4.6
<i>Development of a Musculoskeletal Humanoid Robot As a Platform for Biomechanical Research on the Underwater Dolphin Kick</i> , pp. 3285-3291.	
Ishii, Yasuaki	University of Tokyo
Nishikawa, Satoshi	University of Tokyo
Niyama, Ryuma	University of Tokyo
Kuniyoshi, Yasuo	The University of Tokyo
11:48-11:51	WeBTS4.7
<i>Design and Experiments of a Novel Hydraulic Wheel-Legged Robot (WLR)</i> , pp. 3292-3297.	
Li, Xu	Harbin Institute of Technology
Zhou, Haitao	Harbin Institute of Technology
Feng, Haibo	Harbin Institute of Technology
Zhang, Songyuan	Harbin Institute of Technology
Fu, Yili	Harbin Institute of Technology
11:51-11:54	WeBTS4.8
<i>Sensor-Based Reactive Execution of Symbolic Rearrangement Plans by a Legged Mobile Manipulator</i> , pp. 3298-3305.	
Vasilopoulos, Vasileios	University of Pennsylvania
Topping, Turner	University of Pennsylvania
Vega-Brown, William	Massachusetts Institute of Technology
Roy, Nicholas	Massachusetts Institute of Technology
Koditschek, Daniel	University of Pennsylvania
WeBTS5	Room 2.R3
Prosthetics and Exoskeletons II (Regular session)	
Chair: Tamosiunaite, Minija	University of Goettingen
Co-Chair: Torricelli, Diego	Consejo Superior De Investigaciones Cientificas
11:30-11:33	WeBTS5.1
<i>Soft Wearable Augmented Walking Suit with Pneumatic Gel Muscles and Stance Phase Detection System to Assist Gait</i> , N/A.	
Thakur, Chetan	Hiroshima University
Ogawa, Kazunori	DAIYA Industry
Tsuji, Toshio	Hiroshima University
Kurita, Yuichi	Hiroshima University
11:33-11:36	WeBTS5.2
<i>Comfort-Centered Design of a Lightweight and Backdrivable Knee Exoskeleton</i> , N/A.	
Wang, Junlin	City University of New York, City College
Li, Xiao	The City College of New York
Huang, Tzu-Hao	City College of New York
Yu, Shuangyue	City University of New York, City

	College	
Li, Yanjun	The City College of New York	
Chen, Tianyao	Catholic University of America	
Carriero, Alessandra	The City College of New York	
Oh-Park, Mooyeon	Burke Rehabilitation Hospital	
Su, Hao	City University of New York, City College	
11:36-11:39	WeBTS5.3	
<i>An Assist-As-Needed Velocity Field Control Scheme for Rehabilitation Robots</i> , pp. 3322-3327.		
Jabbariasl, Hamed	Toyota Technological Institute	
Narikiyo, Tatsuo	Toyota Technological Institute	
Kawanishi, Michihiro	Toyota Technological Institute	
11:39-11:42	WeBTS5.4	
<i>The KIT Prosthetic Hand: Design and Control</i> , pp. 3328-3334.		
Weiner, Pascal	Karlsruhe Institute of Technology	
Starke, Julia	Karlsruhe Institute of Technology	
Hundhausen, Felix	Karlsruhe Institute of Technology	
Beil, Jonas	Karlsruhe Institute of Technology (KIT)	
Asfour, Tamim	Karlsruhe Institute of Technology (KIT)	
11:42-11:45	WeBTS5.5	
<i>Robot Controllers Compatible with Human Beam Balancing Behavior</i> , pp. 3335-3341.		
Lee, Jongwoo	Massachusetts Institute of Technology (MIT)	
Huber, Meghan	Massachusetts Institute of Technology	
Sternad, Dagmar	Northeastern University	
Hogan, Neville	Massachusetts Institute of Technology	
11:45-11:48	WeBTS5.6	
<i>Shock Absorbing Exoskeleton for Vertical Mobility System: Concept and Feasibility Study</i> , pp. 3342-3349.		
Ueda, Jun	Georgia Institute of Technology	
Turkseven, Melih	Georgia Institute of Technology	
Kim, Euisun	Georgia Institute of Technology	
Lowery, Quincey	Georgia Tech	
Bivens, Courtland	Georgia Tech Research Institute	
Mayo, Michael	Georgia Tech Research Institute	
11:48-11:51	WeBTS5.7	
<i>Prediction of Manipulation Action Classes Using Semantic Spatial Reasoning</i> , pp. 3350-3357.		
Ziaetabar, Fatemeh	Georg August University_Physics 3-BCCN	
Kulvicius, Tomas	University of Goettingen	
Tamosiunaite, Minija	University of Goettingen	
Wörgötter, Florentin	University of Göttingen	
WeBTS6	Room 1.L3	
Human-Robot Interaction VI (Regular session)		
Chair: Dillmann, Rüdiger	Karlsruhe Institute of Technology (KIT)	
Co-Chair: Giakoumis, Dimitris	Centre for Research and Technology Hellas	
11:30-11:33	WeBTS6.1	
<i>Human Motion Prediction under Social Grouping Constraints</i> , pp. 3358-3364.		
Rudenko, Andrey	Robert Bosch GmbH	
Palmieri, Luigi	Robert Bosch GmbH	

Lilienthal, Achim J.	Örebro University
Arras, Kai Oliver	Bosch Research
11:33-11:36	WeBTS6.2
<i>Risk-Based Human-Aware Multi-Robot Coordination in Dynamic Environments Shared with Humans</i> , pp. 3365-3372.	
Talebpour, Zeynab	École Polytechnique Fédérale De Lausanne
Martinoli, Alcherio	EPFL
11:36-11:39	WeBTS6.3
<i>Modeling Social Interaction Based on Joint Motion Significance</i> , pp. 3373-3380.	
Cho, Nam Jun	Hanyang University
Lee, Sang Hyoung	Korea Institute of Industrial Technology
Suh, Il Hong	Hanyang University
Kwon, Taesoo	Carnegie Mellon University
Kim, Hong-Seok	Korea Institute of Industrial Technology
11:39-11:42	WeBTS6.4
<i>Effects of Integrated Intent Recognition and Communication on Human-Robot Collaboration</i> , pp. 3381-3386.	
Chang, Mai Lee	University of Texas at Austin
Gutierrez, Reymundo A.	University of Texas at Austin
Khante, Priyanka	University of Texas at Austin
Short, Elaine Schaertl	University of Texas at Austin
Thomaz, Andrea Lockerd	University of Texas at Austin
11:42-11:45	WeBTS6.5
<i>After You: Doorway Negotiation for Human-Robot and Robot-Robot Interaction</i> , pp. 3387-3394.	
Thomas, Jack	Simon Fraser University
Vaughan, Richard	Simon Fraser University
11:45-11:48	WeBTS6.6
<i>The Power of Color: A Study on the Effective Use of Colored Light in Human-Robot Interaction</i> , pp. 3395-3402.	
Pörtner, Aljoscha	Bielefeld University of Applied Sciences
Schröder, Lilian	University of Applied Sciences Bielefeld, Campus Minden
Rasch, Robin	Bielefeld University of Applied Sciences
Sprute, Dennis	Bielefeld University of Applied Sciences
Hoffmann, Martin	Bielefeld University of Applied Sciences
König, Matthias	Bielefeld University of Applied Sciences
11:48-11:51	WeBTS6.7
<i>Neuroscientifically-Grounded Research for Improved Human-Robot Interaction</i> , pp. 3403-3408.	
Kompatsiari, Kyveli	Istituto Italiano Di Tecnologia
Perez-Osorio, Jairo	Istituto Italiano Di Tecnologia
Davide, De Tommaso	Istituto Italiano Di Tecnologia
Metta, Giorgio	Istituto Italiano Di Tecnologia (IIT)
Wykowska, Agnieszka	Istituto Italiano Di Tecnologia
WeBTS7	Room 2.L3
Autonomous Vehicles I (Regular session)	
Chair: Laugier, Christian	INRIA
Co-Chair: Yan, Zhi	University of Technology of Belfort-Montbéliard (UTBM)
11:30-11:33	WeBTS7.1

Robust LIDAR Localization for Autonomous Driving in Rain, pp. 3409-3415.

Zhang, Chen	Singapore-MIT Alliance for Research and Technology
Ang Jr, Marcelo H	National University of Singapore
Rus, Daniela	MIT

11:33-11:36 WeBTS7.2

Move Base Flex: A Highly Flexible Navigation Framework for Mobile Robots, pp. 3416-3421.

Pütz, Sebastian	Osnabrueck University
Santos, Jorge	Magazino GmbH
Hertzberg, Joachim	University of Osnabrueck

11:36-11:39 WeBTS7.3

Just-In-Time Emergency Trajectories: A Formulation towards Safety in Autonomous Navigation, pp. 3422-3429.

Todoran, George	Vienna University of Technology
Bader, Markus	Vienna University of Technology

11:39-11:42 WeBTS7.4

PoseMap: Lifelong, Multi-Environment 3D LiDAR Localization, pp. 3430-3437.

Egger, Philipp	ETH Zürich
Borges, Paulo Vinicius Koerich	CSIRO
Catt, Gavin	CSIRO
Pfrunder, Andreas	ETH Zurich
Siegwart, Roland	ETH Zurich
Dubé, Renaud	ETH Zürich

11:42-11:45 WeBTS7.5

Personal Mobility Vehicle Autonomous Navigation through Pedestrian Flow: A Data Driven Approach for Parameter Extraction, pp. 3438-3444.

Morales Saiki, Luis Yoichi	ATR / Nagoya University
Akai, Naoki	Nagoya University
Murase, Hiroshi	Nagoya University

11:45-11:48 WeBTS7.6

Identifying Driver Behaviors Using Trajectory Features for Vehicle Navigation, pp. 3445-3452.

Cheung, Ernest C.	The University of North Carolina at Chapel Hill
Bera, Aniket	University of North Carolina at Chapel Hill
Kubin, Emily	University of North Carolina at Chapel Hill
Gray, Kurt	University of North Carolina at Chapel Hill
Manocha, Dinesh	University of North Carolina at Chapel Hill

11:48-11:51 WeBTS7.7

Preliminary Evaluation of Null-Space Dynamic Process Model Identification with Application to Cooperative Navigation of Underwater Vehicles, pp. 3453-3459.

Harris, Zachary	Johns Hopkins University
Paine, Tyler	Johns Hopkins University
Whitcomb, Louis	The Johns Hopkins University

11:51-11:54 WeBTS7.8

Autonomous Acquisition of Behavior Trees for Robot Control, pp. 3460-3467.

Banerjee, Bikramjit	University of Southern Mississippi
---------------------	------------------------------------

WeBTS8 Room 2.R1
Grasping II (Regular session)

Chair: Sun, Dong

Co-Chair: Natale, Lorenzo

City University of Hong Kong

Istituto Italiano Di Tecnologia

11:30-11:33 WeBTS8.1

Learning-Based Modular Task-Oriented Grasp Stability Assessment, pp. 3468-3475.

Xu, Jingyi	Technical University of Munich
Bhardwaj, Amit	Technical University of Munich, Munich

Sun, Ge	Technical University of Munich
Aykut, Tamay	Technical University of Munich
Alt, Nicolas	Technische Universität München
Karimi, Mojtaba	Technical University of Munich
Steinbach, Eckehard	Munich University of Technology

11:33-11:36 WeBTS8.2

Interactive Robotic Manipulation of Elastic Objects, pp. 3476-3481.

Dünser, Simon	ETH Zurich
Bern, James	ETH Zurich
Poranne, Roi	ETHZ
Coros, Stelian	Carnegie Mellon University

11:36-11:39 WeBTS8.3

Domain Randomization and Generative Models for Robotic Grasping, pp. 3482-3489.

Tobin, Joshua	UC Berkeley
Zaremba, Wojciech	OpenAI
Abbeel, Pieter	UC Berkeley

11:39-11:42 WeBTS8.4

Improving Grasping Forces During the Manipulation of Unknown Objects, pp. 3490-3495.

Montano, Andres	Universitat Politècnica De Catalunya
Suarez, Raul	Universitat Politècnica De Catalunya (UPC)

11:42-11:45 WeBTS8.5

Intrinsically Motivated Self-Supervised Deep Sensorimotor Learning for Grasping, pp. 3496-3502.

Takahashi, Takeshi	University of Massachusetts, Amherst
Lanighan, Michael	University of Massachusetts Amherst
Gruppen, Rod	University of Massachusetts

11:45-11:48 WeBTS8.6

Manipulation Planning under Changing External Forces, pp. 3503-3510.

Chen, Lipeng	University of Leeds
Figueredo, Luis Felipe Cruz	University of Leeds
Dogar, Mehmet Remzi	University of Leeds

11:48-11:51 WeBTS8.7

Jacquard: A Large Scale Dataset for Robotic Grasp Detection, pp. 3511-3516.

Depierre, Amaury	Ecole Centrale De Lyon/Siléane
Dellandrea, Emmanuel	Ecole Centrale De Lyon
Chen, Liming	Ecole Centrale De Lyon

11:51-11:54 WeBTS8.8

Planning Hand-Arm Grasping Motions with Human-Like Appearance, pp. 3517-3522.

Garcia, Nestor	Universitat Politècnica De Catalunya
Suarez, Raul	Universitat Politècnica De Catalunya (UPC)
Rosell, Jan	Universitat Politècnica De Catalunya (UPC)

WeBTS9	Room 4.L1
Planning and Mapping (Regular session)	
Chair: Hamel, William R.	University of Tennessee
Co-Chair: Kaelbling, Leslie	MIT
11:30-11:33	WeBTS9.1
<i>Efficient Computation of Invariably Safe States for Motion Planning of Self-Driving Vehicles</i> , pp. 3523-3530.	
Pek, Christian	Technical University of Munich and BMW Group
Althoff, Matthias	Technische Universität München
11:33-11:36	WeBTS9.2
<i>Improving Offline Value-Function Approximations for POMDPs by Reducing Discount Factors</i> , pp. 3531-3536.	
Chen, Yi-Chun	University of California, Los Angeles
Kochenderfer, Mykel	Stanford University
Spaan, Matthijs T. J.	Delft University of Technology
11:36-11:39	WeBTS9.3
<i>Robust Exploration with Multiple Hypothesis Data Association</i> , pp. 3537-3544.	
Wang, Jinkun	Stevens Institute of Technology
Englot, Brendan	Stevens Institute of Technology
11:39-11:42	WeBTS9.4
<i>Reactive Collision Avoidance Using Real-Time Local Gaussian Mixture Model Maps</i> , pp. 3545-3550.	
Dhawale, Aditya	Carnegie Mellon University
Yang, Xuning	Carnegie Mellon University
Michael, Nathan	Carnegie Mellon University
11:42-11:45	WeBTS9.5
<i>Integrating Human-Provided Information into Belief State Representation Using Dynamic Factorization</i> , pp. 3551-3558.	
Chitnis, Rohan	Massachusetts Institute of Technology
Kaelbling, Leslie	MIT
Lozano-Perez, Tomas	MIT
11:45-11:48	WeBTS9.6
<i>Simultaneous Task Allocation and Planning under Uncertainty</i> , pp. 3559-3564.	
Faruq, Fatma	University of Birmingham
Lacerda, Bruno	University of Oxford
Hawes, Nick	University of Oxford
Parker, David	University of Birmingham

WeBTS10	Room 4.R1
Special Session: Robotics in Challenging Environments (Regular session)	
Chair: Burroughes, Guy	RACE, UKAEA
11:30-11:33	WeBTS10.1
<i>Strategic-Tactical Planning for Autonomous Underwater Vehicles Over Long Horizons (I)</i> , pp. 3565-3572.	
Bukasz, Dorian	King's College London
Cashmore, Michael	King's College London
Krarp, Benjamin	King's College London
Magazzeni, Daniele	King's College London
Ridder, Bram	King's College London
11:33-11:36	WeBTS10.2
<i>Grid-Based Motion Planning Using Advanced Motions for Hexapod Robots (I)</i> , pp. 3573-3578.	
Cheah, Wei	The University of Manchester

Hakim Khalili, Hassan	University of Manchester
Watson, Simon	University of Manchester
Lennox, Barry	The University of Manchester
Green, Peter	University of Manchester
11:36-11:39	WeBTS10.3
<i>Learning from Demonstration for Hydraulic Manipulators (I)</i> , pp. 3579-3586.	
Suomalainen, Markku Heikki	Aalto University
Koivumäki, Janne	Tampere University of Technology
Lampinen, Santeri	Tampere University of Technology
Kyrki, Ville	Aalto University
Mattila, Jouni	Tampere University of Technology
11:39-11:42	WeBTS10.4
<i>Development and Error Compensation of a Flexible Multi-Joint Manipulator Applied in Nuclear Fusion Environment (I)</i> , pp. 3587-3592.	
Shi, Shanshuang	Institute of Plasma Physics, Chinese Academy of Sciences
Cheng, Yong	Institute of Plasma Physics, Chinese Academy of Sciences
Pan, Hongtao	Shenzhen University
Zhao, Wenlong	Institute of Plasma Physics, Chinese Academy of Sciences
Wu, Huapeng	Lappeenranta University of Technology
11:42-11:45	WeBTS10.5
<i>Progress and Prospects of EAST Remote Maintenance System (I)</i> , pp. 3593-3598.	
Pan, Hongtao	Shenzhen University
Shi, Shanshuang	Institute of Plasma Physics, Chinese Academy of Sciences
Cheng, Yong	Institute of Plasma Physics, Chinese Academy of Sciences
Zhao, Wenlong	Institute of Plasma Physics, Chinese Academy of Sciences
11:45-11:48	WeBTS10.6
<i>Pose Estimation for Mobile Robots to Maximise Data Quality of Fixed-Focus Laser Diagnostics in Hazardous Environments (I)</i> , pp. 3599-3604.	
West, Andrew	The University of Manchester
Watson, Simon	University of Manchester
Lennox, Barry	The University of Manchester

WeCTS1	Room 1.L5
Deep Learning VIII (Regular session)	
Co-Chair: Detweiler, Carrick	University of Nebraska-Lincoln
12:30-12:33	WeCTS1.1
<i>A Variational Feature Encoding Method of 3D Object for Probabilistic Semantic SLAM</i> , pp. 3605-3612.	
Yu, Hyeonwoo	Seoul National University
Lee, Beom-Hee	Seoul National University
12:33-12:36	WeCTS1.2
<i>End to End Vehicle Lateral Control Using Fisheye Camera</i> , pp. 3613-3619.	
Toromanoff, Marin	Mines ParisTech/ Valeo
Wirbel, Emilie	Valeo
Wilhelm, Frédéric	Valeo
Vejarano, Camilo	Valeo
Perrotton, Xavier	Valeo

Moutarde, Fabien	MINES ParisTech - PSL Research University
12:36-12:39	WeCTS1.3
<i>Learning Trajectories for Real-Time Optimal Control of Quadrotors</i> , pp. 3620-3625.	
Tang, Gao	Duke University
Sun, Weidong	Duke University
Hauser, Kris	Duke University
12:39-12:42	WeCTS1.4
<i>A Novel OCR-RCNN for Elevator Button Recognition</i> , pp. 3626-3631.	
Zhu, Delong	The Chinese University of Hong Kong
Li, Tingguang	The Chinese University of Hong Kong
Ho, Danny	The Chinese University of Hong Kong
Zhou, Tong	The Chinese University of Hong Kong
Meng, Max Q.-H.	The Chinese University of Hong Kong
12:42-12:45	WeCTS1.5
<i>Cost Functions for Robot Motion Style</i> , pp. 3632-3639.	
Zhou, Allan	University of California, Berkeley
Dragan, Anca	University of California Berkeley
12:45-12:48	WeCTS1.6
<i>Game-Theoretic Cooperative Lane Changing Using Data-Driven Models</i> , pp. 3640-3647.	
Ding, Guohui	University of Colorado Boulder
Aghli, Sina	University of Colorado Boulder
Heckman, Christoffer	University of Colorado at Boulder
Chen, Lijun	University of Colorado at Boulder
12:48-12:51	WeCTS1.7
<i>Imitation Learning for Object Manipulation Based on Position/Force Information Using Bilateral Control</i> , pp. 3648-3653.	
Adachi, Tsuyoshi	Saitama University
Fujimoto, Kazuki	Saitama University
Sakaino, Sho	Saitama University
Tsuji, Toshiaki	Saitama University
12:51-12:54	WeCTS1.8
<i>Learning Implicit Sampling Distributions for Motion Planning</i> , pp. 3654-3661.	
Zhang, Clark	University of Pennsylvania
Huh, Jinwook	University of Pennsylvania
Lee, Daniel	Cornell Tech
WeCTS2	Room 2.L5 KUKA
Sensor Fusion (Regular session)	
Co-Chair: Castro González, Universidad Carlos III De Madrid Álvaro	
12:30-12:33	WeCTS2.1
<i>Online Temporal Calibration for Monocular Visual-Inertial Systems</i> , pp. 3662-3669.	
Qin, Tong	Hong Kong University of Science and Technology
Shen, Shaojie	Hong Kong University of Science and Technology
12:33-12:36	WeCTS2.2
<i>Modular Sensor Fusion for Semantic Segmentation</i> , pp. 3670-3677.	
Blum, Hermann	ETH Zurich

Gawel, Abel Roman	Autonomous Systems Lab, ETH Zurich
Sieglwart, Roland	ETH Zurich
Cadena Lerma, Cesar	ETH Zurich
12:36-12:39	WeCTS2.3
<i>Robust Sensor Fusion with Self-Tuning Mixture Models</i> , pp. 3678-3685.	
Pfeifer, Tim	Chemnitz University of Technology
Protzel, Peter	Chemnitz University of Technology
12:39-12:42	WeCTS2.4
<i>Trifo-VIO: Robust and Efficient Stereo Visual Inertial Odometry Using Points and Lines</i> , pp. 3686-3693.	
Zheng, Feng	Trifo
Tsai, Grace	PerceptIn
Zhang, Zhe	PerceptIn
Liu, Shaoshan	PerceptIn
Chu, Chen-Chi	PerceptIn
Hu, Hongbing	PerceptIn
12:42-12:45	WeCTS2.5
<i>Scale Correct Monocular Visual Odometry Using a LiDAR Altimeter</i> , pp. 3694-3700.	
Giubilato, Riccardo	University of Padova
Chiodini, Sebastiano	Università Degli Studi Di Padova
Pertile, Marco	Università Degli Studi Di Padova
Debei, Stefano	Università Degli Studi Di Padova
12:45-12:48	WeCTS2.6
<i>Robust Visual-Inertial State Estimation with Multiple Odometries and Efficient Mapping on an MAV with Ultra-Wide FOV Stereo Vision</i> , pp. 3701-3708.	
Müller, Marcus Gerhard	German Aerospace Center
Steidle, Florian	German Aerospace Center
Schuster, Martin Johannes	German Aerospace Center (DLR)
Lutz, Philipp	German Aerospace Center (DLR)
Maier, Moritz	German Aerospace Center (DLR)
Stoneman, Samantha	DLR (German Space Center)
Tomic, Teodor	Skydio
Stuerzl, Wolfgang	DLR, Institute of Robotics and Mechatronics
12:48-12:51	WeCTS2.7
<i>Plugo: A Scalable Visible Light Communication System towards Low-Cost Indoor Localization</i> , pp. 3709-3714.	
Liang, Qing	Hong Kong University of Science and Technology
Wang, Lujia	Shenzhen Institutes of Advanced Technology
Li, You-Fu	City University of Hong Kong
Liu, Ming	Hong Kong University of Science and Technology
12:51-12:54	WeCTS2.8
<i>On the Comparison of Gauge Freedom Handling in Optimization-Based Visual-Inertial State Estimation</i> , N/A.	
Zhang, Zichao	Robotics and Perception Group, University of Zurich
Gallego, Guillermo	University of Zurich
Scaramuzza, Davide	University of Zurich
WeCTS3	Room 1.L2

Swarm and Multi-Robots I (Regular session)	
Chair: Basilico, Nicola	University of Milan
Co-Chair: Jha, Devesh	Mitsubishi Electric Research Laboratories
12:30-12:33	WeCTS3.1
<i>Formally Correct Composition of Coordinated Behaviors Using Control Barrier Certificates</i> , pp. 3723-3729.	
Li, Anqi	Georgia Institute of Technology
Wang, Li	Georgia Institute of Technology
Pierpaoli, Pietro	Georgia Institute of Technology
Egerstedt, Magnus	Georgia Institute of Technology
12:33-12:36	WeCTS3.2
<i>Approximate Distributed Spatiotemporal Topic Models for Multi-Robot Terrain Characterization</i> , pp. 3730-3737.	
Doherty, Kevin	Massachusetts Institute of Technology
Flaspohler, Genevieve	Massachusetts Institute of Technology
Roy, Nicholas	Massachusetts Institute of Technology
Girdhar, Yogesh	Woods Hole Oceanographic Institution
12:36-12:39	WeCTS3.3
<i>On the Use of Energy Tanks for Multi-Robot Interconnection</i> , pp. 3738-3743.	
Riggio, Giuseppe	University of Modena and Reggio Emilia
Fantuzzi, Cesare	Università Di Modena E Reggio Emilia
Secchi, Cristian	Univ. of Modena & Reggio Emilia
12:39-12:42	WeCTS3.4
<i>A Workbench for Quantitative Comparison of Databases in Multi-Robot Applications</i> , pp. 3744-3750.	
Ravichandran, Rubanraj	Bonn Rhein Sieg University of Applied Science
Huebel, Nico	KU Leuven
Blumenthal, Sebastian	Locomotec
Prassler, Erwin	Bonn-Rhein-Sieg Univ. of Applied Sciences
12:42-12:45	WeCTS3.5
<i>Self-Assembly of a Class of Infinitesimally Shape-Similar Frameworks</i> , pp. 3751-3756.	
Buckley, Ian	Georgia Institute of Technology
Egerstedt, Magnus	Georgia Institute of Technology
12:45-12:48	WeCTS3.6
<i>Optimal Redeployment of Multirobot Teams for Communication Maintenance</i> , pp. 3757-3764.	
Banfi, Jacopo	Politecnico Di Milano
Basilico, Nicola	University of Milan
Carpin, Stefano	University of California, Merced
12:48-12:51	WeCTS3.7
<i>Visibility-Based Monitoring of a Path Using a Heterogeneous Robot Team</i> , pp. 3765-3770.	
Maini, Parikshit	Indraprastha Institute of Information Technology, Delhi
Gupta, Gautam	IIIT Delhi
Tokekar, Pratap	Virginia Tech
Pb, Sujit	Indraprastha Institute of Information Technology Delhi
12:51-12:54	WeCTS3.8
<i>Algorithms for Task Allocation in Homogeneous Swarm of Robots</i> , pp. 3771-3776.	

Jha, Devesh

Pennsylvania State University

WeCTS4		Room 2.L2
Legged Robots V (Regular session)		
Chair: Nori, Francesco		DeepMind
Co-Chair: Ayusawa, Ko		AIST
12:30-12:33		WeCTS4.1
<i>Implementation of a Versatile 3D ZMP Trajectory Optimization Algorithm on a Multi-Modal Legged Robotic Platform</i> , pp. 3777-3782.		
Hooks, Joshua		UCLA
Hong, Dennis		UCLA
12:33-12:36		WeCTS4.2
<i>Hybrid Contact Preintegration for Visual-Inertial-Contact State Estimation Using Factor Graphs</i> , pp. 3783-3790.		
Hartley, Ross		University of Michigan
Ghaffari Jadidi, Maani		Univ. of Michigan
Gan, Lu		University of Michigan
Huang, Jiunn-Kai		University of Michigan
Grizzle, J.W		University of Michigan
Eustice, Ryan		University of Michigan
12:36-12:39		WeCTS4.3
<i>Stable, Autonomous, Unknown Terrain Locomotion for Quadrupeds Based on Visual Feedback and Mixed-Integer Convex Optimization</i> , pp. 3791-3798.		
Ahn, Min Sung		University of California: Los Angeles
Chae, Hosik		University of California at Los Angeles
Hong, Dennis		UCLA
12:39-12:42		WeCTS4.4
<i>Leg Design to Enable Dynamic Running and Climbing on BOBCAT</i> , pp. 3799-3806.		
Austin, Max		Florida State University
Brown, Jason		Florida State University
Young, Charles		Florida State University
Clark, Jonathan		Florida State University
12:42-12:45		WeCTS4.5
<i>Learning Hardware Dynamics Model from Experiments for Locomotion Optimization</i> , pp. 3807-3814.		
Chen, Kuo		Rutgers University
Ha, Sehoon		Disney Research
Yamane, Katsu		Honda Research Institute, USA
12:45-12:48		WeCTS4.6
<i>Iterative Learning of Energy-Efficient Dynamic Walking Gaits</i> , pp. 3815-3820.		
Kong, Felix Honglim		The University of Sydney
Manchester, Ian		University of Sydney
12:48-12:51		WeCTS4.7
<i>Bipedal Hopping: Reduced-Order Model Embedding Via Optimization-Based Control</i> , pp. 3821-3828.		
Xiong, Xiaobin		California Institute of Technology
Ames, Aaron		Caltech
12:51-12:54		WeCTS4.8
<i>An Actuator Design Criterion to Maximize Physical Balance Recovery</i> , pp. 3829-3836.		
Driessen, Josephus Johannes Maria		Istituto Italiano Di Tecnologia
Featherstone, Roy		Istituto Italiano Di Tecnologia
Gkikakis, Antonios Emmanouil		Istituto Italiano Di Tecnologia

WeCTS5		Room 2.R3
Surgical Robots I (Regular session)		
Chair: Muñoz, Victor	University of Malaga	
Co-Chair: Shi, Chaoyang	University of Toronto	
12:30-12:33	WeCTS5.1	
Passive Virtual Fixtures Adaptation in Minimally Invasive Robotic Surgery, N/A.		
Selvaggio, Mario	Università Degli Studi Di Napoli Federico II	
Fontanelli, Giuseppe Andrea	University of Naples Federico II	
Ficuciello, Fanny	Università Di Napoli Federico II	
Villani, Luigi	Univ. Napoli Federico II	
Siciliano, Bruno	Univ. Napoli Federico II	
12:33-12:36	WeCTS5.2	
Vessel Pose Estimation for Obstacle Avoidance in Needle Steering Surgery Using Multiple Forward Looking Sensors, pp. 3845-3852.		
Virdyawan, Vani	Imperial College London	
Rodriguez y Baena, Ferdinando	Imperial College, London, UK	
12:36-12:39	WeCTS5.3	
A Critical Analysis of Eight-Electromagnet Manipulation Systems: The Role of Electromagnet Configuration on Strength, Isotropy, and Access, N/A.		
Pourkand, Ashkan	Univerisyt of Utah	
Abbott, Jake	University of Utah	
12:39-12:42	WeCTS5.4	
Frequency-Based Temperature Compensation for a Tactile Sensor Using Acoustic Reflection, N/A.		
Akita, Shun	Nagoya Institute of Technology	
Fukuda, Tomohiro	Nagoya Institute of Technology	
Tanaka, Yoshihiro	Nagoya Institute of Technology	
Fujiwara, Michitaka	Nagoya University, Graduate School of Medicine	
Sano, Akihito	Nagoya Institute of Technology	
12:42-12:45	WeCTS5.5	
A Compliant Robotic Instrument with Coupled Tendon Driven Articulated Wrist Control for Organ Retraction, N/A.		
Chu, Xiangyu	The Chinese University of Hong Kong	
Cai, Yuanpei	CUHK	
Chung, Tsz Yin	The Chinese University of Hong Kong	
Au, Samuel	The Chinese University of Hong Kong	
Yip, Hoi Wut	The Chinese University of Hong Kong	
Moran, Stuart	Retraction, Inc	
12:45-12:48	WeCTS5.6	
Trajectory Optimization of Robot-Assisted Endovascular Catheterization with Reinforcement Learning, pp. 3875-3881.		
Chi, Wenqiang	Imperial College London	
Liu, Jindong	Imperial College London	
Abdelaziz, Mohamed Essam	Imperial College London	
Mohamed Kassem		
Dagnino, Giulio	Imperial College London	
Riga, Celia	Imperial College London	
Bicknell, Colin	Imperial College London	
Yang, Guang-Zhong	Imperial College London	
12:48-12:51	WeCTS5.7	

ArthroSLAM: Multi-Sensor Robust Visual Localization for Minimally Invasive Orthopedic Surgery, pp. 3882-3889.		
Marmol, Andres	Queensland University of Technology	
Corke, Peter	Queensland University of Technology	
Peynot, Thierry	Queensland University of Technology (QUT)	
12:51-12:54	WeCTS5.8	
Towards Robotic Eye Surgery: Marker-Free, Online Hand-Eye Calibration Using Optical Coherence Tomography Images, N/A.		
Zhou, Mingchuan	Technische Universität München	
Hamad, Mahdi	Mr	
Weiss, Jakob	Technische Universität München	
Eslami, Abouzar	Carl Zeiss Meditec AG	
Huang, Kai	Sun Yat-Sen University	
Maier, Mathias	Klinikum Rechts Der Isar Der TU München	
Lohmann, Chris P.	Klinikum Rechts Der Isar Der TU München	
Navab, Nassir	TU Munich	
Knoll, Alois	Tech. Univ. Muenchen TUM	
Nasseri, M. Ali	Technische Universitaet Muenchen	
WeCTS6		Room 1.L3
Human-Robot Interaction VII (Regular session)		
Chair: Padir, Taskin	Northeastern University	
Co-Chair: Magnusson, Martin	Örebro University	
12:30-12:33	WeCTS6.1	
I Can See Your Aim: Estimating User Attention from Gaze for Handheld Robot Collaboration, pp. 3897-3904.		
Stolzenwald, Schachar Janis Immanuel	University of Bristol	
Mayol, Walterio	University of Bristol	
12:33-12:36	WeCTS6.2	
Recursive Bayesian Human Intent Recognition in Shared-Control Robotics, pp. 3905-3912.		
Jain, Siddarth	Northwestern University, Rehabilitation Institute of Chicago	
Argall, Brenna	Northwestern University	
12:36-12:39	WeCTS6.3	
A Novel Shared Position Control Method for Robot Navigation Via Low Throughput Human-Machine Interfaces, pp. 3913-3920.		
Sinyukov, Dmitry	Worcester Polytechnic Institute	
Padir, Taskin	Northeastern University	
12:39-12:42	WeCTS6.4	
Robot Identification and Localization with Pointing Gestures, pp. 3921-3928.		
Gromov, Boris	IDSIA	
Gambardella, Luca	USI-SUPSI	
Giusti, Alessandro	IDSIA Lugano, SUPSI	
12:42-12:45	WeCTS6.5	
Establishing Appropriate Trust Via Critical States, pp. 3929-3936.		
Huang, Sandy H.	UC Berkeley	
Bhatia, Kush	University of California Berkeley	
Abbeel, Pieter	UC Berkeley	
Dragan, Anca	University of California Berkeley	
12:45-12:48	WeCTS6.6	

Learned Hand Gesture Classification through Synthetically Generated Training Samples, pp. 3937-3942.

Lindgren, Kyle	University of Washington
Kalavakonda, Niveditha	University of Washington
Caballero, David	University of Washington
Huang, Kevin	Trinity College
Hannaford, Blake	University of Washington

12:48-12:51 WeCTS6.7

Interaction System Based on an Avatar Projected on a Pyramidal Display, pp. 3943-3948.

Loza Matovelle, David César	Universidad De La Fuerzas Armadas ESPE
Marcos, Samuel	CARTIF Foundation
Zalama, Eduardo	Instituto De Las Tecnologías de la Producción (ITAP). University of Va
Gomez Garcia Bermejo, Jaime	University of Valladolid

WeCTS7 Room 2.L3 Autonomous Vehicles II (Regular session)

Chair: Topp, Elin Anna	Lund University - LTH
Co-Chair: Stachniss, Cyrill	University of Bonn

12:30-12:33 WeCTS7.1

Multimotion Visual Odometry (MVO): Simultaneous Estimation of Camera and Third-Party Motions, pp. 3949-3956.

Judd, Kevin Michael	University of Oxford
Gammell, Jonathan	University of Oxford
Newman, Paul	Oxford University

12:33-12:36 WeCTS7.2

Underwater Surveying Via Bearing Only Cooperative Localization, pp. 3957-3963.

Damron, Hunter	University of South Carolina
Quattrini Li, Alberto	Dartmouth College
Rekleitis, Ioannis	University of South Carolina

12:36-12:39 WeCTS7.3

Ego-Motion Estimate Corruption Due to Violations of the Range Flow Constraint, pp. 3964-3969.

Monaco, Chris	Pennsylvania State University
Brennan, Sean	Penn State University

12:39-12:42 WeCTS7.4

Semi-Supervised SLAM: Leveraging Low-Cost Sensors on Underground Autonomous Vehicles for Position Tracking, pp. 3970-3977.

Jacobson, Adam	Queensland University of Technology
Zeng, Fan	Queensland University of Technology
Smith, David	Caterpillar
Boswell, Nigel	Caterpillar
Peynot, Thierry	Queensland University of Technology (QUT)
Milford, Michael J	Queensland University of Technology

12:42-12:45 WeCTS7.5

An Automatic Tracked Robot Chain System for Gas Pipeline Inspection and Maintenance Based on Wireless Relay Communication, pp. 3978-3983.

Zhao, Wen	Waseda University
Kamezaki, Mitsuhiro	Waseda University
Yoshida, Kento	Waseda University
Konno, Minoru	Tokyo Gas Co. Ltd

Onuki, Akihiko	Tokyogas
Sugano, Shigeki	Waseda University

12:45-12:48 WeCTS7.6

Multi-Level Bayesian Decision-Making for Safe and Flexible Autonomous Navigation in Highway Environment, pp. 3984-3990.

Iberraken, Dimia	Sherpa Engineering, Institut Pascal UMR CNRS 6602
Adouane, Lounis	Institut Pascal, UMR CNRS 6602
Denis, Dieumet	Sherpa Engineering

12:48-12:51 WeCTS7.7

Estimating Achievable Range of Ground Robots Operating on Single Battery Discharge for Operational Efficacy Amelioration, pp. 3991-3998.

Tiwari, Kshitij	Aalto University
Xiao, Xuesu	Texas A&M University
Chong, Nak Young	Japan Advanced Inst. of Sci. and Tech

12:51-12:54 WeCTS7.8

Interaction-Aware Probabilistic Behavior Prediction in Urban Environments, pp. 3999-4006.

Schulz, Jens	Technical University of Munich, BMW Group
Hubmann, Constantin	Karlsruhe Institute of Technology, BMW Group
Löchner, Julian	BMW Group
Burschka, Darius	Technische Universität München

WeCTS8 Room 2.R1 Grasping III (Regular session)

Chair: Morales, Antonio	Universitat Jaume I
Co-Chair: Surdilovic, Dragoljub	Fraunhofer IPK

12:30-12:33 WeCTS8.1

FEM-Based Deformation Control for Dexterous Manipulation of 3D Soft Objects, pp. 4007-4013.

Ficuciello, Fanny	Università Di Napoli Federico II
Migliozzi, Alessandro	University of Naples
Coevoet, Eulalie	INRIA
Petit, Antoine	Inia
Duriez, Christian	INRIA

12:33-12:36 WeCTS8.2

Robotic Edge-Rolling Manipulation: A Grasp Planning Approach, N/A.

Specian, Andrew	University of Pennsylvania
Mucchiani, Caio	University of Pennsylvania
Yim, Mark	University of Pennsylvania
Seo, Jungwon	The Hong Kong University of Science and Technology

12:36-12:39 WeCTS8.3

An Adaptive Robotic Gripper with L-Shape Fingers for Peg-In-Hole Tasks, pp. 4022-4028.

Nie, Kaidi	大阪大学
Wan, Weiwei	Osaka University
Harada, Kensuke	Osaka University

12:39-12:42 WeCTS8.4

Caging Polygonal Objects Using Formationally Similar Three-Finger Hands, N/A.

Bunis, Hallel A.	Technion - Israel Institute of Technology
Rimon, Elon	Technion - Israel Institute of Technology

Golan, Yoav	Technology
Shapiro, Amir	Ben Gurion University of the Negev
12:42-12:45	WeCTS8.5
<i>High-Speed High-Precision Proximity Sensor for Detection of Tilt, Distance and Contact, N/A.</i>	
Koyama, Keisuke	University of Tokyo
Shimojo, Makoto	University of Electro-Communications
Senoo, Taku	University of Tokyo
Ishikawa, Masatoshi	University of Tokyo
12:45-12:48	WeCTS8.6
<i>Real-Time Grasp Planning for Multi-Fingered Hands by Finger Splitting, pp. 4045-4052.</i>	
Fan, Yongxiang	University of California, Berkeley
Tang, Te	University of California, Berkeley
Lin, Hsien-Chung	University of California, Berkeley
Tomizuka, Masayoshi	University of California
12:48-12:51	WeCTS8.7
<i>Grasp Stiffness Control in Robotic Hands through Coordinated Optimization of Pose and Joint Stiffness, N/A.</i>	
Ruiz Garate, Virginia	Istituto Italiano Di Tecnologia
Pozzi, Maria	University of Siena
Prattichizzo, Domenico	University of Siena
Tsarakakis, Nikos	Istituto Italiano Di Tecnologia
Ajoudani, Arash	Istituto Italiano Di Tecnologia
12:51-12:54	WeCTS8.8
<i>Interleaving Hierarchical Task Planning and Motion Constraint Testing for Dual-Arm Manipulation, pp. 4061-4066.</i>	
Suárez-Hernández, Alejandro	UPC-CSIC
Alenyà, Guillem	CSIC-UPC
Torras, Carme	Csic - Upc
WeCTS9	
Learning and Adaptive Systems I (Regular session)	
Chair: Lima, Pedro U.	Instituto Superior Técnico - Institute for Systems and Robotics
Co-Chair: Liu, Ming	Hong Kong University of Science and Technology
12:30-12:33	WeCTS9.1
<i>Sequence Pattern Extraction by Segmenting Time Series Data Using GP-HSMM with Hierarchical Dirichlet Process, pp. 4067-4074.</i>	
Nagano, Masatoshi	University of Electro-Communications
Nakamura, Tomoaki	The University of Electro-Communications
Nagai, Takayuki	University of Electro-Communications
Mochihashi, Daichi	Institute of Statistical Mathematics
Kobayashi, Ichiro	Ochanomizu University
Kaneko, Masahide	Graduate School of Electro-Communications, the University of Elect
12:33-12:36	WeCTS9.2
<i>Persistent Anytime Learning of Objects from Unseen Classes, pp. 4075-4082.</i>	
Denninger, Maximilian	German Aerospace Center (DLR)

Triebel, Rudolph	German Aerospace Center (DLR)
12:36-12:39	WeCTS9.3
<i>Adaptive Robot Body Learning and Estimation through Predictive Coding, pp. 4083-4090.</i>	
Lanillos, Pablo	Technische Universität München
Cheng, Gordon	Technical University of Munich
12:39-12:42	WeCTS9.4
<i>Online Learning of Body Orientation Control on a Humanoid Robot Using Finite Element Goal Babbling, pp. 4091-4098.</i>	
Loviken, Pontus	Softbank Robotics Europe
Hemion, Nikolas	SoftBank Robotics Europe
Laflaquière, Alban	AI Lab, SoftBank Robotics EU
Spranger, Michael	Sony Computer Science Laboratories Inc
Cangelosi, Angelo	University of Plymouth
12:42-12:45	WeCTS9.5
<i>Cost Adaptation for Robust Decentralized Swarm Behaviour, pp. 4099-4106.</i>	
Henderson, Peter	McGill University
Vertescher, Matthew	McGill University
Meger, David Paul	McGill University
Coates, Mark	McGill University
12:45-12:48	WeCTS9.6
<i>Active Model Learning and Diverse Action Sampling for Task and Motion Planning, pp. 4107-4114.</i>	
Wang, Zi	Massachusetts Institute of Technology
Garrett, Caelan	Massachusetts Institute of Technology
Kaelbling, Leslie	MIT
Lozano-Perez, Tomas	MIT
12:48-12:51	WeCTS9.7
<i>Improving Reinforcement Learning Pre-Training with Variational Dropout, pp. 4115-4122.</i>	
Blau, Tom	University of Sydney
Ott, Lionel	University of Sydney
Ramos, Fabio	University of Sydney
12:51-12:54	WeCTS9.8
<i>Deep Episodic Memory: Encoding, Recalling, and Predicting Episodic Experiences for Robot Action Execution, N/A..</i>	
Rothfuss, Jonas	Karlsruhe Institute of Technology
Ferreira, Fabio	Karlsruhe Institute of Technology
Aksoy, Eren Erdal	Halmstad University
Zhou, You	Karlsruhe Institute of Technology (KIT)
Asfour, Tamim	Karlsruhe Institute of Technology (KIT)
WeCTS10	
Special Session: IROSfan (Regular session)	
Chair: Alvarez, David	University Carlos III of Madrid
Co-Chair: Saltaren, Roque	Universidad Politecnica De Madrid
12:30-12:33	WeCTS10.1
<i>A Framework for Dexterous Manipulation, pp. 4131-4138.</i>	
Ku, Li Yang	Umass Amherst
Rogers, Jonathan	NASA Johnson Space Center
Strawser, Philip	NASA
Badger, Julia	NASA Johnson Space Center
Learned-Miller, Erik	University of Massachusetts,

Gruppen, Rod	Amherst University of Massachusetts
12:33-12:36	WeCTS10.2
<i>An Extrinsic Dexterity Approach to the IROS 2018 Fan Robotic Challenge</i> , pp. 4139-4144.	
Kwiatkowski, Jennifer	École De Technologie Supérieure
Roberge, Jean-Philippe	École De Technologie Supérieure
Nadeau, Nicholas A.	École De Technologie Supérieure
L'Écuyer-Lapierre, Louis	École De Technologie Supérieure
Duchaine, Vincent	Ecole De Technologie Superieure
12:36-12:39	WeCTS10.3
<i>Development of a Low-Inertia High-Stiffness Manipulator LIMS2 for High-Speed Manipulation of Foldable Objects</i> , pp. 4145-4151.	
Song, Hansol	Koreatech
Kim, Yun-Soo	Koreatech
Yoon, Junsuk	Korea University of Technology and Education (Koreatech)
Yun, Seong-Ho	Koreatech, IRIM Lab
Seo, Jiwon	Koreatech
Kim, Yong-Jae	Korea University of Technology and Education
12:39-12:42	WeCTS10.4
<i>Flamen – 7 DOF Robotic Arm to Manipulate a Spanish Fan</i> , pp. 4152-4157.	
Nair, Manu Harikrishnan	SRM Institute of Science and Technology
Singh, Tarush Ghanshyam	SRM Institute of Science and Technology
Chourasia, Gunjan	SRM Institute of Science and Technology
Das, Amrit	SRM Institute of Science and Tecgnology
Shrivastava, Akarsh	SRM Institute of Science and Technology
Bhatt, Zeel Shaileshkumar	SRM Institute of Science and Technology
12:42-12:45	WeCTS10.5
<i>IROS 2018 Fan Challenge - Team DLR Augsburg</i> , pp. 4158-4163.	
Schönheits, Manfred	German Aerospace Center (DLR)
Larsen, Lars	German Aerospace Center
Schuster, Alfons	German Aerospace Center
Gänswürger, Philipp	German Aerospace Center (DLR)
WeDTS1 Room 1.L5	
Aerial Systems I (Regular session)	
Chair: Ollero, Anibal	University of Seville
Co-Chair: Wolfe, Kevin	Johns Hopkins University Applied Physics Laboratory
14:30-14:33	WeDTS1.1
<i>Improved Quadcopter Disturbance Rejection Using Added Angular Momentum</i> , pp. 4164-4170.	
Bucki, Nathan	University of California, Berkeley
Mueller, Mark Wilfried	University of California, Berkeley
14:33-14:36	WeDTS1.2
<i>A Universal Controller for Unmanned Aerial Vehicles</i> , pp. 4171-4176.	

Bulka, Eitan	McGill University
Nahon, Meyer	McGill University
14:36-14:39	WeDTS1.3
<i>Passive Compliance Control of Aerial Manipulators</i> , pp. 4177-4184.	
Kim, Min Jun	DLR
Balachandran, Ribin	DLR
De Stefano, Marco	DLR - German Aerospace Center
Kondak, Konstantin	German Aerospace Center
Ott, Christian	German Aerospace Center (DLR)
14:39-14:42	WeDTS1.4
<i>Guidance Laws for Partially-Observable Interception Based on Linear Covariance Analysis</i> , pp. 4185-4191.	
Arneberg, Jasper	MIT
Tal, Ezra Amram	MIT
Karaman, Sertac	Massachusetts Institute of Technology
14:42-14:45	WeDTS1.5
<i>MMAC Height Control System of a Quadrotor for Constant Unknown Load Transportation</i> , pp. 4192-4197.	
Outeiro, Pedro	Instituto Superior Técnico
Cardeira, Carlos	IDMEC / Instituto Superior Técnico, TU Lisbon
Oliveira, Paulo	Instituto Superior Técnico
14:45-14:48	WeDTS1.6
<i>Decentralized Motion Control in a Cabled-Based Multi-Drone Load Transport System</i> , pp. 4198-4203.	
Mohammadi, Keyvan	McMaster University
Jafarinasab, Mohammad	McMaster University
Sirouspour, Shahin	McMaster University
Dyer, Eric	McMaster University
14:48-14:51	WeDTS1.7
<i>SwarmTouch: Tactile Interaction of Human with Impedance Controlled Swarm of Nano-Quadrotors</i> , pp. 4204-4209.	
Tsykunov, Evgeny	Skolkovo Institute of Science and Technology
Labazanova, Luiza	Skolkovo Institute of Science and Technology
Tleugazy, Akerke	Skoltech
Tsetserukou, Dzmitry	Skolkovo Institute of Science and Technology
14:51-14:54	WeDTS1.8
<i>Design and Implementation of a Novel Aerial Manipulator with Tandem Ducted Fans</i> , pp. 4210-4217.	
Zhang, Yibo	Beijing Institute of Technology
Xiang, Changle	Beijing Institute of Technology
Xu, Bin	Beijing Institute of Technology
Wang, Yang	China North Vehicle Research Institute
Wang, Xiaoliang	Beijing Institute of Technology
WeDTS2 Room 2.L5 KUKA	
Sensorial Perception I (Regular session)	
Chair: Suh, Il Hong	Hanyang University
Co-Chair: Haschke, Robert	Bielefeld University
14:30-14:33	WeDTS2.1
<i>Real-Time Light Field Processing for Autonomous Robotics</i> , pp. 4218-4225.	
Bajpayee, Abhishek	MIT

Techet, Alexandra	MIT
Singh, Hanumant	Northeastern University
14:33-14:36	WeDTS2.2
<i>Video Motion Capture from the Part Confidence Maps of Multi-Camera Images by Spatiotemporal Filtering Using the Human Skeletal Model</i> , pp. 4226-4231.	
Ohashi, Takuya	The University of Tokyo
Ikegami, Yosuke	University of Tokyo
Yamamoto, Kazuki	The University of Tokyo
Takano, Wataru	University of Tokyo
Nakamura, Yoshihiko	University of Tokyo
14:36-14:39	WeDTS2.3
<i>Development of Wide Angle Fovea Lens for High-Definition Imager Over 3 Mega Pixels</i> , pp. 4232-4237.	
Shimizu, Sota	Shibaura Institute of Technology
Murakami, Rei	Shibaura Institute of Technology
Tominaga, Motonori	SOKEN
14:39-14:42	WeDTS2.4
<i>Learning Synergies between Pushing and Grasping with Self-Supervised Deep Reinforcement Learning</i> , pp. 4238-4245.	
Zeng, Andy	Princeton University
Song, Shuran	Princeton University
Welker, Stefan	Albert-Ludwigs-Universitaet Freiburg
Lee, Johnny	Google
Rodriguez, Alberto	Massachusetts Institute of Technology
Funkhouser, Thomas A.	Princeton University
14:42-14:45	WeDTS2.5
<i>Model Assisted Multi-Band Fusion for Single Image Enhancement and Applications to Robot Vision</i> , N/A.	
Cho, Younggun	Korea Advanced Institute of Science and Technology
Jeong, Jinyong	KAIST
Kim, Ayoung	Korea Advanced Institute of Science Technology
14:45-14:48	WeDTS2.6
<i>Fast Ellipse Detection Via Gradient Information for Robotic Manipulation of Cylindrical Objects</i> , N/A.	
Dong, Huixu	Nanyang Technological University
Sun, Guangbin	Nanyang Technological University
Pang, Wee-Ching	Nanyang Technological University
Asadi, Ehsan	Nanyang Technological University
Prasad, Dilip	Nanyang Technological University
Chen, I-Ming	Nanyang Technological University
14:48-14:51	WeDTS2.7
<i>Towards Material Classification of Scenes Using Active Thermography</i> , pp. 4262-4269.	
Bai, Haoping	Georgia Institute of Technology
Bhattacharjee, Tapomayukh	University of Washington
Chen, Haofeng	Georgia Institute of Technology
Kapusta, Ariel	Georgia Institute of Technology
Kemp, Charlie	Georgia Institute of Technology
14:51-14:54	WeDTS2.8
<i>Vision-Based State Estimation and Trajectory Tracking Control of Car-Like Mobile Robots with Wheel Skidding and Slipping</i> , pp. 4270-4275.	

Zhou, Shunbo	The Chinese University of Hong Kong
Miao, Zhiqiang	Hunan University
Liu, Zhe	The Chinese University of Hong Kong
Zhao, Hongchao	The Chinese University of Hong Kong
Wang, Hesheng	Shanghai Jiao Tong University
Chen, Haoyao	Harbin Institute of Technology
Liu, Yunhui	Chinese University of Hong Kong
WeDTS3 Room 1.L2	
Swarm and Multi-Robots II (Regular session)	
Chair: Althoefer, Kaspar	Queen Mary University of London
Co-Chair: Chen, Mo	Simon Fraser University
14:30-14:33	WeDTS3.1
<i>Recruitment Near Worksites Facilitates Robustness of Foraging E-Puck Swarms to Global Positioning Noise</i> , pp. 4276-4281.	
Pitonakova, Lenka	University of Bristol
Winfield, Alan	University of the West of England, Bristol
Crowder, Richard	University of Southampton
14:33-14:36	WeDTS3.2
<i>Robust and Adaptive Robot Self-Assembly Based on Vascular Morphogenesis</i> , pp. 4282-4287.	
Divband Soorati, Mohammad	University of Luebeck
Ghofrani, Javad	Dresden University of Applied Sciences
Zahadat, Payam	Karl-Franzens University Graz
Hamann, Heiko	University of Luebeck
14:36-14:39	WeDTS3.3
<i>\$Phi\$Clust: Pheromone-Based Aggregation for Robotic Swarms</i> , pp. 4288-4294.	
Arvin, Farshad	University of Manchester
Turgut, Ali Emre	University
Krajník, Tomáš	Czech Technical University
Rahimi, Salar	Middle East Technical University
Okay, Ilkin Ege	Middle East Technical University
Yue, Shigang	University of Lincoln
Watson, Simon	University of Manchester
Lennox, Barry	The University of Manchester
14:39-14:42	WeDTS3.4
<i>Decentralized Connectivity-Preserving Deployment of Large-Scale Robot Swarms</i> , pp. 4295-4302.	
Majcherczyk, Nathalie	Worcester Polytechnic Institute
Jayabalan, Adhavan	Worcester Polytechnic Institute
Beltrame, Giovanni	Ecole Polytechnique De Montreal
Pincirol, Carlo	Worcester Polytechnic Institute
14:42-14:45	WeDTS3.5
<i>A Distributed Swarm Aggregation Algorithm for Bar Shaped Multi-Agent Systems</i> , pp. 4303-4308.	
Carpio, Renzo Fabrizio	Roma Tre University
Di Giulio, Letizia	Safety Office of the Experimental Department at CERN, 1211 Genev
Garone, Emanuele	Université Libre De Bruxelles
Ulivi, Giovanni	Università Di Roma Tre
Gasparri, Andrea	Università Degli Studi Roma Tre

14:45-14:48	WeDTS3.6
<i>Resilient Active Information Gathering with Mobile Robots</i> , pp. 4309-4316.	
Schlotfeldt, Brent	University of Pennsylvania
Tzoumas, Vasileios	Massachusetts Institute of Technology
Thakur, Dinesh	University of Pennsylvania
Pappas, George J.	University of Pennsylvania
14:48-14:51	WeDTS3.7
<i>Generation of Context-Dependent Policies for Robot Rescue Decision-Making in Multi-Robot Teams</i> , pp. 4317-4324.	
Al-Hussaini, Sarah	University of Southern California
Gregory, Jason M.	US Army Research Laboratory
Gupta, Satyandra K.	University of Southern California
14:51-14:54	WeDTS3.8
<i>Reach-Avoid Problems Via Sum-Of-Squares Optimization and Dynamic Programming</i> , pp. 4325-4332.	
Landry, Benoit	Stanford University
Chen, Mo	Stanford
Hemley, Scott	Stanford University
Pavone, Marco	Stanford University
WeDTS4	Room 2.L2
Legged Robots VI (Regular session)	
Chair: Martinez De La Casa	Univ. Carlos III De Madrid
Diaz, Santiago	
14:30-14:33	WeDTS4.1
<i>Development of Rimless Wheel with Controlled Wobbling Mass</i> , pp. 4333-4339.	
Hanazawa, Yuta	Kyushu Institute of Technology
14:33-14:36	WeDTS4.2
<i>Maneuverability in Dynamic Vertical Climbing</i> , pp. 4340-4347.	
Brown, Jason	Florida State University
Austin, Max	Florida State University
Kanwar, Bharat	Georgia Institute of Technology
Jonas, Tyler	Florida State University
Clark, Jonathan	Florida State University
14:36-14:39	WeDTS4.3
<i>Design of Extra Robotic Legs for Augmenting Human Payload Capabilities by Exploiting Singularity and Torque Redistribution</i> , pp. 4348-4354.	
Gonzalez, Daniel	Massachusetts Institute of Technology
Asada, Harry	MIT
14:39-14:42	WeDTS4.4
<i>Multi-Limbed Robot Vertical Two Wall Climbing Based on Static Indeterminacy Modeling and Feasibility Region Analysis</i> , pp. 4355-4362.	
Lin, Xuan	UCLA
Krishnan, Hari	University of California Los Angeles
Su, Yao	UCLA MAE Department
Hong, Dennis	UCLA
14:42-14:45	WeDTS4.5
<i>Fast Walking with Rhythmic Sway of Torso in a 2D Passive Ankle Walker</i> , pp. 4363-4368.	
Bao, Ruizhi	Brunel University
Geng, Tao	Middlesex University
14:45-14:48	WeDTS4.6
<i>Torque Controlled Biped Model through a Bio-Inspired Controller</i>	

Using Adaptive Learning, pp. 4369-4374.

Ferreira, César	University of Minho
Gomes Da Cunha, Tomás	Universidade Do Minho
André	
Reis, Luís Paulo	University of Minho
Santos, Cristina	University of Minho

14:48-14:51 WeDTS4.7

High-Speed Stealth Walking of Underactuated Biped Utilizing Effects of Upper-Body Control and Semicircular Feet, pp. 4375-4380.

Asano, Fumihiko	Japan Advanced Institute of Science and Technology
-----------------	--

14:51-14:54 WeDTS4.8

Estimating Contact Forces and Moments for Walking Robots and Exoskeletons Using Complementary Energy Methods, N/A.

Vantilt, Jonas	KU Leuven
Giraddi, Chetan	KU Leuven
Aertbelien, Erwin	KU Leuven
De Groote, Friedl	KU Leuven
De Schutter, Joris	KU Leuven

WeDTS5 Room 2.R3

Surgical Robots II (Regular session)

Co-Chair: Tumerdem, Ugur	Marmara University
--------------------------	--------------------

14:30-14:33 WeDTS5.1

A Comparison of Assistive Methods for Suturing in MIRS, pp. 4389-4395.

Fontanelli, Giuseppe Andrea	University of Naples Federico II
Yang, Guang-Zhong	Imperial College London
Siciliano, Bruno	Univ. Napoli Federico II

14:33-14:36 WeDTS5.2

External Force/Torque Estimation on a Dexterous Parallel Robotic Surgical Instrument Wrist, pp. 4396-4403.

Yilmaz, Nural	Marmara University
Bazman, Merve	Marmara University
Tumerdem, Ugur	Marmara University

14:36-14:39 WeDTS5.3

Hand-Impedance Measurement During Laparoscopic Training Coupled with Robotic Manipulators, pp. 4404-4410.

Harun, Tugal	Manchester University
Gautier, Benjamin	Heriot-Watt University
Kircicek, Merve	Heriot-Watt University
Erden, Mustafa Suphi	Heriot-Watt University

14:39-14:42 WeDTS5.4

Comparison of 3D Surgical Tool Segmentation Procedures with Robot Kinematics Prior, pp. 4411-4418.

Su, Yun-Hsuan	University of Washington
Huang, Issac	University of Washington
Huang, Kevin	Trinity College
Hannaford, Blake	University of Washington

14:42-14:45 WeDTS5.5

Slip Sensing for Intelligent, Improved Grasping and Retraction in Robot-Assisted Surgery, N/A.

Burkhard, Natalie	Stanford University
Cutkosky, Mark	Stanford University
Steger, Ryan	Intuitive Surgical

14:45-14:48 WeDTS5.6

Model-Based Needle Steering in Soft Tissue Via Lateral Needle Actuation, N/A.

Lehmann, Thomas	University of Alberta
Sloboda, Ronald	Cross Cancer Institute
Usmani, Nawaid	Cross Cancer Institute
Tavakoli, Mahdi	University of Alberta

14:48-14:51 WeDTS5.7

Real-Time Tumor Tracking for Pencil Beam Scanning Proton Therapy, pp. 4434-4440.

Vemprala, Sai	Texas A&M University
Saripalli, Srikanth	Texas A&M
Vargas, Carlos	Mayo Clinic Arizona
Bues, Martin	Mayo Clinic Arizona
Hu, Yanle	Mayo Clinic Arizona
Shen, Jiajian	Mayo Clinic Arizona

WeDTS6 Room 1.L3 Human-Robot Interaction VIII (Regular session)

Chair: Fukuda, Toshio	Meijo University
Co-Chair: Ku, Li Yang	Umass Amherst

14:30-14:33 WeDTS6.1

Preference-Based Assistance Prediction for Human-Robot Collaboration Tasks, pp. 4441-4448.

Grigore, Elena Corina	Yale University
Ronccone, Alessandro	Yale University
Mangin, Olivier	Yale University
Scassellati, Brian	Yale

14:33-14:36 WeDTS6.2

Collaborative Planning for Mixed-Autonomy Lane Merging, pp. 4449-4455.

Bansal, Shray	Georgia Institute of Technology
Cosgun, Akansel	Monash University
Nakhaei, Alireza	Honda Research Institute USA
Fujimura, Kikuo	Honda Research Institute

14:36-14:39 WeDTS6.3

Adaptive Modality Selection Algorithm in Robot-Assisted Cognitive Training, pp. 4456-4461.

Taranović, Aleksandar	Institut De Robòtica I Informàtica Industrial, CSIC-UPC
Jevtić, Aleksandar	Institut De Robòtica I Informàtica Industrial, CSIC-UPC
Torras, Carme	Csic - Upc

14:39-14:42 WeDTS6.4

Continuous Shared Control for Robotic Arm Reaching Driven by a Hybrid Gaze-Brain Machine Interface, pp. 4462-4467.

Wang, Yanxin	Southeast University
Xu, Guozheng	Nanjing University of Posts and Telecommunications
Song, Aiguo	Southeast University
Xu, Baoguo	School of Instrument Science and Engineering, Southeast University
Li, Huijun	Southeast University
Hu, Cong	Guilin University of Electronic Technology
Zeng, Hong	Southeast University

14:42-14:45 WeDTS6.5

The Socially Invisible Robot: Navigation in the Social World Using Robot Entitativity, pp. 4468-4475.

Bera, Aniket	University of North Carolina at Chapel Hill
Randhavane, Tanmay	UNC
Kubin, Emily	University of North Carolina at

Wang, Austin	University of North Carolina at Chapel Hill
Gray, Kurt	University of North Carolina at Chapel Hill

Manocha, Dinesh	University of North Carolina at Chapel Hill
-----------------	---

14:45-14:48 WeDTS6.6

Projection-Aware Task Planning and Execution for Human-In-The-Loop Operation of Robots in a Mixed-Reality Workspace, pp. 4476-4482.

Chakraborti, Tathagata	Arizona State University
Sreedharan, Sarath	Arizona State University
Kulkarni, Anagha	Arizona State University
Kambhampati, Subbarao	Arizona State University

14:48-14:51 WeDTS6.7

A Speech-Driven Hand Gesture Generation Method and Evaluation in Android Robots, N/A.

Ishi, Carlos Toshinori	ATR
Machiyashiki, Daichi	ATR
Mikata, Ryusuke	ATR
Ishiguro, Hiroshi	Osaka University

WeDTS7 Room 2.L3 Autonomous Vehicles III (Regular session)

Chair: Spenko, Matthew	Illinois Institute of Technology
Co-Chair: Bergasa, Luis Miguel	University of Alcalá

14:30-14:33 WeDTS7.1

KNOWROB_SIM — Game Engine-Enabled Knowledge Processing towards Cognition-Enabled Robot Control, pp. 4491-4498.

Haidu, Andrei	University Bremen
Beßler, Daniel	Universität Bremen
Bozcuoglu, Asil Kaan	University of Bremen
Beetz, Michael	University of Bremen

14:33-14:36 WeDTS7.2

Probabilistic Collision Threat Assessment for Autonomous Driving at Road Intersections Inclusive of Vehicles in Violation of Traffic Rules, pp. 4499-4506.

Noh, Samyeul	Electronics and Telecommunications Research Institute (ETRI)
--------------	--

14:36-14:39 WeDTS7.3

Failing to Learn: Autonomously Identifying Perception Failures for Self-Driving Cars, N/A.

Srinivasan Ramanagopal, Manikandasirram	University of Michigan
Anderson, Cyrus	University of Michigan
Vasudevan, Ram	University of Michigan
Johnson-Roberson, Matthew	University of Michigan

14:39-14:42 WeDTS7.4

LiDAR-Based Object Tracking and Shape Estimation Using Polylines and Free-Space Information, pp. 4515-4522.

Kraemer, Stefan	Karlsruhe Institute of Technology
Bouzouraa, Mohamed	AUDI AG
Essayed	
Stiller, Christoph	Karlsruhe Institute of Technology

14:42-14:45 WeDTS7.5

Search-Based Optimal Motion Planning for Automated Driving, pp. 4523-4530.

Ajanović, Zlatan	Virtual Vehicle Research Center
------------------	---------------------------------

Lacevic, Bakir	University of Sarajevo
Shyrokau, Barys	Delft University of Technology
Stolz, Michael	VIRTUAL VEHICLE Research Center
Horn, Martin	Graz University of Technology
14:45-14:48	WeDTS7.6
<i>Visual Vehicle Tracking through Noise and Occlusions Using Crowd-Sourced Maps</i> , pp. 4531-4538.	
M S, Suraj	Georgia Institute of Technology, Blue Vision Labs
Grimmett, Hugo	Blue Vision Labs
Platinsky, Lukas	Imperial College London
Ondruska, Peter	Blue Vision Labs
14:48-14:51	WeDTS7.7
<i>Vehicle Rebalancing for Mobility-On-Demand Systems with Ride-Sharing</i> , pp. 4539-4546.	
Wallar, Alexander	Massachusetts Institute of Technology
van der Zee, Menno Jaring	TU Delft
Alonso-Mora, Javier	Delft University of Technology
Rus, Daniela	MIT
14:51-14:54	WeDTS7.8
<i>Transferable Pedestrian Motion Prediction Models at Intersections</i> , pp. 4547-4553.	
Shen, Macheng	Massachusetts Institute of Technology
Habibi, Golnaz	Rice University
How, Jonathan Patrick	Massachusetts Institute of Technology
WeDTS8 Room 2.R1	
Grippers (Regular session)	
Chair: Caldwell, Darwin G.	Istituto Italiano Di Tecnologia
Co-Chair: Suarez, Raul	Universitat Politecnica De Catalunya (UPC)
14:30-14:33	WeDTS8.1
<i>Model-Free Grasp Planning for Configurable Vacuum Grippers</i> , pp. 4554-4561.	
You, Fang	Karlsruhe Institute of Technology (KIT)
Mende, Michael	Karlsruhe Institute of Technology (KIT)
Stogl, Denis	Karlsruhe Institute of Technology (KIT)
Hein, Björn	Karlsruhe Institute of Technology (KIT)
Kroeger, Torsten	Karlsruher Institut Für Technologie (KIT)
14:33-14:36	WeDTS8.2
<i>Five-Fingered Hand with Wide Range of Thumb Using Combination of Machined Springs and Variable Stiffness Joints</i> , pp. 4562-4567.	
Makino, Shogo	The University of Tokyo
Kawaharazuka, Kento	The University of Tokyo
Kawamura, Masaya	The University of Tokyo
Fujii, Ayaka	University of Tokyo
Makabe, Tasuku	The University of Tokyo
Onitsuka, Moritaka	The University of Tokyo
Asano, Yuki	The University of Tokyo
Okada, Kei	The University of Tokyo
Kawasaki, Koji	The University of Tokyo
Inaba, Masayuki	The University of Tokyo

14:36-14:39	WeDTS8.3
<i>VARO-Fi: A Variable Orientable Gripper to Obtain In-Hand Manipulation</i> , pp. 4568-4575.	
Rahman, Nahian	Georgia Institute of Technology
Caldwell, Darwin G.	Istituto Italiano Di Tecnologia
Cannella, Ferdinando	Istituto Italiano Di Tecnologia
14:39-14:42	WeDTS8.4
<i>The Co-Gripper: A Wireless Cooperative Gripper for Safe Human Robot Interaction</i> , pp. 4576-4581.	
Salviotti, Gionata	University of Siena
Iqbal, Muhammad Zubair	University of Siena
Hussain, Irfan	Khalifa Robotics Institute, University of Siena, SIRS Lab
Prattichizzo, Domenico	University of Siena
Malvezzi, Monica	University of Siena
14:42-14:45	WeDTS8.5
<i>Variable-Friction Finger Surfaces to Enable Within-Hand Manipulation Via Gripping and Sliding</i> , N/A.	
Spiers, Adam	Yale University
Calli, Berk	Yale University
Dollar, Aaron	Yale University
14:45-14:48	WeDTS8.6
<i>The KIT Swiss Knife Gripper for Disassembly Tasks: A Multi-Functional Gripper for Bimanual Manipulation with a Single Arm</i> , pp. 4590-4597.	
Borras Sol, Julia	Consejo Superior De Investigaciones Científicas
Heudorfer, Raphael	Karlsruhe Institute of Technology
Rader, Samuel	Karlsruhe Institute of Technology (KIT)
Kaiser, Peter	Karlsruhe Institute of Technology (KIT)
Asfour, Tamim	Karlsruhe Institute of Technology (KIT)
14:48-14:51	WeDTS8.7
<i>Modeling and Prototyping of an Underactuated Gripper Exploiting Joint Compliance and Modularity</i> , N/A.	
Hussain, Irfan	Khalifa Robotics Institute, University of Siena, SIRS Lab
Renda, Federico	Khalifa University of Science and Technology
Iqbal, Muhammad Zubair	University of Siena
Malvezzi, Monica	University of Siena
Salviotti, Gionata	University of Siena
Seneviratne, Lakmal	L. D. Seneviratne Is with Kings College London, UK, and Robotics
Gan, Dongming	Khalifa University of Science AndTechnology
Prattichizzo, Domenico	University of Siena

WeDTS9 Room 4.L1	
Learning and Adaptive Systems II (Regular session)	
Chair: Preucil, Libor	Czech Technical University in Prague
Co-Chair: Arras, Kai Oliver	Bosch Research
14:30-14:33	WeDTS9.1
<i>Learning Image-Conditioned Dynamics Models for Control of Underactuated Legged Millirobots</i> , pp. 4606-4613.	
Nagabandi, Anusha	UC Berkeley
Yang, Guangzhao	University of California, Berkeley
Asmar, Thomas Habib	University of California, Berkeley

Pandya, Ravi	UC Berkeley
Kahn, Gregory	University of California, Berkeley
Levine, Sergey	UC Berkeley
Fearing, Ronald	University of California at Berkeley
14:33-14:36	WeDTS9.2
<i>Online Adaptation of Robot Pushing Control to Object Properties</i> , pp. 4614-4621.	
Krivic, Senka	University of Innsbruck
Piater, Justus	University of Innsbruck
14:36-14:39	WeDTS9.3
<i>Composable Learning with Sparse Kernel Representations</i> , pp. 4622-4628.	
Tolstaya, Ekaterina	UPenn
Stump, Ethan	US Army Research Laboratory
Koppel, Alec	University of Pennsylvania
Ribeiro, Alejandro	University of Pennsylvania
14:39-14:42	WeDTS9.4
<i>Compensating for Context by Learning Local Models of Perception Performance</i> , pp. 4629-4634.	
Hu, Humphrey	Carnegie Mellon University
Kantor, George	Carnegie Mellon University
14:42-14:45	WeDTS9.5
<i>Setting up a Reinforcement Learning Task with a Real-World Robot</i> , pp. 4635-4640.	
Mahmood, Ashique Rupam	Kindred Inc
Korenkevych, Dmytro	Kindred Inc
Komer, Brent	University of Waterloo
Bergstra, James	Kindred Inc
14:45-14:48	WeDTS9.6
<i>CINet: A Learning Based Approach to Incremental Context Modeling in Robots</i> , pp. 4641-4646.	
Doğan, Fethiye Irmak	Middle East Technical University
Bozcan, İker	Middle East Technical University
Çelik, Mehmet	Middle East Technical University
Kalkan, Sinan	Middle East Technical University
14:48-14:51	WeDTS9.7
<i>Dimensionality Reduction in Learning Gaussian Mixture Models of Movement Primitives for Contextualized Robot Action Selection</i> , N/A.	
Colomé, Adrià	Institut De Robòtica i Informàtica Industrial (CSIC-UPC), Q28180
Torras, Carme	Csic - Upc
14:51-14:54	WeDTS9.8
<i>Learning Generalizable Robot Skills from Demonstrations in Cluttered Environments</i> , pp. 4655-4660.	
Rana, Muhammad Asif	Georgia Institute of Technology
Mukadam, Mustafa	Georgia Institute of Technology
Ahmadzadeh, Seyed Reza	Institute for Robotics and Intelligent Machines, Georgia Institu
Chernova, Sonia	Georgia Institute of Technology
Boots, Byron	Georgia Institute of Technology

WeDTS10	Room 4.R1
Special Session: Symbiotic Exoskeletons - Exploring the Human Side (Regular session)	
Chair: Ganguly, Amartya	Marsi Bionics SL
Co-Chair: Garcia, Elena	Centre for Automation and Robotics Spanish National Research Council - (CSIC-UPM)

14:30-14:33	WeDTS10.1
<i>Interacting with a "transparent" Upper-Limb Exoskeleton: A Human Motor Control Approach (I)</i> , pp. 4661-4666.	
Bastide, Simon	CIAMS Laboratory, Univ. Paris-Sud, Université Paris-Saclay, F-91
Vignais, Nicolas	Univ. Paris-Sud
Geffard, Franck	Atomic Energy Commissariat (CEA)
Berret, Bastien	Université Paris-Sud 11
14:33-14:36	WeDTS10.2
<i>Wearable Pediatric Gait Exoskeleton a Feasibility Study (I)</i> , pp. 4667-4672.	
Ganguly, Amartya	Marsi Bionics SL
Sanz-Merodio, Daniel	Marsi Bionics
Puyuelo, Gonzalo	King Juan Carlos University
Goñi, Ane	Centre for Automation and Robotics, CSIC-UPM
Garcés, Elena	Marsi Bionics
Garcia, Elena	Centre for Automation and Robotics Spanish National Research
14:36-14:39	WeDTS10.3
<i>Verification of a Robotic Ankle Exoskeleton Control Scheme for Gait Assistance in Individuals with Cerebral Palsy (I)</i> , pp. 4673-4678.	
Gasparri, Gian Maria	University of Pisa
Bair, Michael Owen	Northern Arizona University
Libby, Robert	Northern Arizona University
Lerner, Zachary	Northern Arizona University
14:39-14:42	WeDTS10.4
<i>Robot-Supported Multiplayer Rehabilitation: Feasibility Study of Haptically Linked Patient-Spouse Training (I)</i> , pp. 4679-4684.	
Baur, Kilian	ETH Zurich
Wolf, Peter	ETH Zurich, Institute of Robotics and Intelligent Systems
Klamroth, Verena	ETH Zürich
Bierbauer, Walter	Applied Social and Health Psychology, Department of Psychology &
Scholz, Urte	Applied Social and Health Psychology, Department of Psychology &
Riener, Robert	ETH Zurich
Duarte, Jaime Enrique	ETH Zurich
14:42-14:45	WeDTS10.5
<i>A Soft-Exosuit Enables Multi-Scale Analysis of Wearable Robotics in a Bipedal Animal Model (I)</i> , pp. 4685-4691.	
Cox, Suzanne	Pennsylvania State University, Biomechanics Laboratory / Muscle
Rubenson, Jonas	Pennsylvania State University, Biomechanics Laboratory / Muscle
Sawicki, Gregory	Georgia Institute of Technology

WeETS1	Room 1.L5
Aerial Systems II (Regular session)	
Chair: Campoy, Pascual	Computer Vision Group. Universidad Politécnica De Madrid
Co-Chair: Kostavelis, Ioannis	Center for Research and Technology Hellas
17:00-17:03	WeETS1.1

Through-The-Lens Drone Filming, pp. 4692-4699.

Huang, Chong University of California, Santa Barbara
Yang, Zhenyu University of California, Santa Barbara

Kong, Yan UC Santa Barbara
Chen, Peng Zhejiang University of Technology

Yang, Xin Huazhong University of Science and Technology

Cheng, Kwang-Ting (Tim) Hong Kong University of Science and Technology

17:03-17:06 WeETS1.2

Towards Aerial Recovery of Parachute-Deployed Payloads, pp. 4700-4707.

Shankar, Ajay University of Nebraska-Lincoln
Elbaum, Sebastian University of Nebraska - Lincoln
Detweiler, Carrick University of Nebraska-Lincoln

17:06-17:09 WeETS1.3

Airborne Docking for Multi-Rotor Aerial Manipulations, pp. 4708-4714.

Miyazaki, Ryo Ritsumeikan University
Jiang, Rui Ritsumeikan University
Paul, Hannibal Ritsumeikan University
Ono, Koji Ritsumeikan University
Shimonomura, Kazuhiro Ritsumeikan University

17:09-17:12 WeETS1.4

Optimal Time Allocation for Quadrotor Trajectory Generation, pp. 4715-4722.

Gao, Fei Hong Kong University of Science and Technology
Wu, William HKUST
Pan, Jie Hong Kong University of Science and Technology
Zhou, Boyu Shanghai Jiao Tong University, China
Shen, Shaojie Hong Kong University of Science and Technology

17:12-17:15 WeETS1.5

Aerial Radio-Based Telemetry for Tracking Wildlife, pp. 4723-4728.

Bayram, Haluk Istanbul Medeniyet University
Stefas, Nikolaos University of Minnesota
Isler, Volkan University of Minnesota

17:15-17:18 WeETS1.6

Planning to Monitor Wildfires with a Fleet of UAVs, pp. 4729-4734.

Bailon-Ruiz, Rafael CNRS-LAAS
Bit-Monnot, Arthur University of Sassari
Lacroix, Simon LAAS/CNRS

17:18-17:21 WeETS1.7

Flight Motion of Passing through Small Opening by DRAGON: Transformable Multilinked Aerial Robot, pp. 4735-4742.

Zhao, Moju The University of Tokyo
Shi, Fan The University of Tokyo
Anzai, Tomoki The University of Tokyo
Chaudhary, Krishneel Chand The University of Tokyo
Chen, Xiangyu The University of Tokyo
Okada, Kei The University of Tokyo
Inaba, Masayuki The University of Tokyo

17:21-17:24 WeETS1.8

Optimal Constrained Trajectory Generation for Quadrotors through Smoothing Splines, pp. 4743-4750.

Lai, Shupeng

National University of Singapore

Lan, Menglu

National University of Singapore

Chen, Ben M.

National University of Singapore

WeETS2 Room 2.L5 KUKA

Sensorial Perception II (Regular session)

Co-Chair: del Cerro, Jaime Universidad Politécnica De Madrid

17:00-17:03 WeETS2.1

FarSight: Long-Range Depth Estimation from Outdoor Images, pp. 4751-4757.

Reza, Md George Mason University
David, Philip U.S. Army Research Laboratory
Kosecka, Jana George Mason University

17:03-17:06 WeETS2.2

LeGO-LOAM: Lightweight and Ground-Optimized Lidar Odometry and Mapping on Variable Terrain, pp. 4758-4765.

Shan, Tixiao Stevens Institute of Technology
Englot, Brendan Stevens Institute of Technology

17:06-17:09 WeETS2.3

A Maximum Likelihood Approach to Extract Polylines from 2-D Laser Range Scans, pp. 4766-4773.

Schaefer, Alexander Freiburg University
Büscher, Daniel Albert-Ludwigs-Universität Freiburg

Luft, Lukas Freiburg University
Burgard, Wolfram University of Freiburg

17:09-17:12 WeETS2.4

Learning a Local Feature Descriptor for 3D LiDAR Scans, pp. 4774-4780.

Dewan, Ayush University of Freiburg
Caselitz, Tim University of Freiburg
Burgard, Wolfram University of Freiburg

17:12-17:15 WeETS2.5

Hallucinating Robots: Inferring Obstacle Distances from Partial Laser Measurements, pp. 4781-4787.

Lundell, Jens Aalto University
Verdoja, Francesco Aalto University
Kyrki, Ville Aalto University

17:15-17:18 WeETS2.6

Optimizing Scan Homogeneity for Building Full-3D Lidars Based on Rotating a Multi-Beam Velodyne Rangefinder, pp. 4788-4793.

Mandow, Anthony University of Malaga
Morales, Jesús Universidad De Málaga
Gomez-Ruiz, Jose Antonio University of Malaga
García-Cerezo, Alfonso University of Malaga

17:18-17:21 WeETS2.7

Laser Map Aided Visual Inertial Localization in Changing Environment, pp. 4794-4801.

Ding, Xiaqing Zhejiang University
Wang, Yue Zhejiang University
Li, Dongxuan Zhejiang University
Tang, Li Zhejiang University
Yin, Huan Zhejiang University
Xiong, Rong Zhejiang University

17:21-17:24 WeETS2.8

Scan Context: Egocentric Spatial Descriptor for Place Recognition within 3D Point Cloud Map, pp. 4802-4809.

Kim, Giseop KAIST(Korea Advanced Institute of Science and Technology)

Kim, Ayoung

Korea Advanced Institute of
Science TechnologyTron, Roberto
Belta, CalinBoston University
Boston University

WeETS3	Room 1.L2
Swarm and Multi-Robots III (Regular session)	
Chair: Hanheide, Marc	University of Lincoln
Co-Chair: Nakamura, Yutaka	Osaka University
17:00-17:03	WeETS3.1
<i>Decentralised Mission Monitoring with Spatiotemporal Optimal Stopping</i> , pp. 4810-4817.	
Best, Graeme	Oregon State University
Huang, Shoudong	University of Technology, Sydney
Fitch, Robert	University of Technology Sydney
17:03-17:06	WeETS3.2
<i>Uncertain Local Leader Selection in Distributed Formations</i> , pp. 4818-4824.	
Rovinsky, Dany	Bar Ilan University
Agmon, Noa	Bar Ilan University
17:06-17:09	WeETS3.3
<i>Electing an Approximate Center in a Huge Modular Robot with the K-BFS SumSweep Algorithm</i> , pp. 4825-4832.	
Naz, André	University of Franche-Comte
Piranda, Benoît	Université De Franche-Comté / FEMTO-ST
Bourgeois, Julien	Institut FEMTO-ST
Goldstein, Seth	University
17:09-17:12	WeETS3.4
<i>A New Characterization of Mobility for Distance-Bearing Formations of Unicycle Robots</i> , pp. 4833-4839.	
Morbidi, Fabio	Université De Picardie Jules Verne
Bretagne, Estelle	University of Picardie Jules Verne
17:12-17:15	WeETS3.5
<i>Modeling and Control of Multiple Aerial-Ground Manipulator System (MAGMaS) with Load Flexibility</i> , pp. 4840-4847.	
Yang, Hyunsoo	Seoul National University
Staub, Nicolas	LAAS-CNRS
Franchi, Antonio	LAAS-CNRS
Lee, Dongjun	Seoul National University
17:15-17:18	WeETS3.6
<i>Determining Effective Swarm Sizes for Multi-Job Type Missions</i> , pp. 4848-4853.	
Chandarana, Meghan	Carnegie Mellon University
Lewis, Michael	University of Pittsburgh
Sycara, Katia	Carnegie Mellon University
Scherer, Sebastian	Carnegie Mellon University
17:18-17:21	WeETS3.7
<i>Multi-Robot Virtual Structure Switching and Formation Changing Strategy in an Unknown Occluded Environment</i> , pp. 4854-4861.	
Roy, Dibyendu	Tata Consultancy Services Limited
Chowdhury, Arijit	TCS Research and Innovation
Maitra, Madhubanti	JADAVPUR UNIVERSITY
Bhattacharya, Samar	Jadavpur University
17:21-17:24	WeETS3.8
<i>Distributed Sensing Subject to Temporal Logic Constraints</i> , pp. 4862-4868.	
Serlin, Zachary	Boston University
Leahy, Kevin	Boston University

WeETS4	Room 2.L2
Micro and Nano Robot I (Regular session)	
Chair: Maeda, Shingo	Shibaura Institute of Technology
Co-Chair: Abu-Dakka, Fares	Istituto Italiano Di Tecnologia J.
17:00-17:03	WeETS4.1
<i>Comparison of Dynamic Models for Non-Contact Micromanipulation Based on Dielectrophoretic Actuation</i> , pp. 4869-4874.	
Gauthier, Vladimir	FEMTO-ST Institute
Bolopion, Aude	Femto-St Institute
Gauthier, Michael	FEMTO-ST Institute
17:03-17:06	WeETS4.2
<i>A New Robot Fly Design That Is Easier to Fabricate and Capable of Flight and Ground Locomotion</i> , pp. 4875-4882.	
Chukewad, Yogesh	University of Washington
Madhavrao	
Singh, Avinash	University of Washington
James, Johannes	University of Washington
Fuller, Sawyer	University of Washington
17:06-17:09	WeETS4.3
<i>Milligram-Scale Micro Aerial Vehicle Design for Low-Voltage Operation</i> , pp. 4883-4888.	
Bhushan, Palak	University of California Berkeley
Tomlin, Claire	UC Berkeley
17:09-17:12	WeETS4.4
<i>Repeatability and Reproducibility Analysis of a Multistable Module Devoted to Digital Microrobotics</i> , pp. 4889-4894.	
Bouhadda, Ismail	Femto-ST
Mohand Ousaid, Abdenbi	University of Franche-Comte
Hussein, Hussein	University of Montpellier, LIRMM
Bourbon, Gilles	Femto-St
Le moal, Patrice	Femto-St
Haddab, Yassine	LIRMM
Lutz, Philippe	Université De Franche-Comté
17:12-17:15	WeETS4.5
<i>Depth Estimation of Optically Transparent Microrobots Using Convolutional and Recurrent Neural Networks</i> , pp. 4895-4900.	
Grammatikopoulou, Maria	Imperial College London
Zhang, Lin	Imperial College London
Yang, Guang-Zhong	Imperial College London
17:15-17:18	WeETS4.6
<i>On Designing 2D Discrete Workspaces to Sort or Classify Polyominoes</i> , pp. 4901-4907.	
Keldenich, Phillip	TU Braunschweig
Manzoor, Sheryl	University of Houston
Huang, Li	University of Houston
Krupke, Dominik Michael	TU Braunschweig
Schmidt, Arne	TU Braunschweig
Fekete, Sándor	Technische Universität Braunschweig
Becker, Aaron	University of Houston
17:18-17:21	WeETS4.7
<i>Miniature Robot Finger Using a Micro Linear Ultrasonic Motor and a Closed-Loop Linkage</i> , pp. 4908-4913.	
Izuhara, Shunsuke	Toyohashi University of Technology

Mashimo, Tomoaki	Toyohashi University of Technology
17:21-17:24	WeETS4.8
<i>Resistive Pulse Study of Liposome Stability: Towards Precision and Efficient Drug Delivery</i> , pp. 4914-4919.	
Lin, Yuqing	Beijing Institute of Technology
Liu, Xiaoming	Beijing Institute of Technology
Arai, Tatsuo	University of Electro-Communications
WeETS5	Room 2.R3
Surgical Robots III (Regular session)	
Chair: Okamura, Allison M.	Stanford University
Co-Chair: Ishii, Hiroyuki	Waseda University
17:00-17:03	WeETS5.1
<i>Force/Velocity Manipulability Analysis for 3D Continuum Robots</i> , pp. 4920-4926.	
Khadem, Mohsen	University College London
Bergeles, Christos	University College London
Da Cruz, Lyndon	Moorfields Eye Hospital
17:03-17:06	WeETS5.2
<i>Analysis of Dynamic Response of an MRI-Guided Magnetically-Actuated Steerable Catheter System</i> , pp. 4927-4934.	
Tuna, Eser Erdem	Case Western Reserve Univesity
Liu, Taoming	Case Western Reserve University
Jackson, Russell	Case Western Reserve University
Poirot, Nate Lombard	Case Western Reserve University
Russell, Mac	Case Western Reserve University
Cavusoglu, M. Cenk	Case Western Reserve University
17:06-17:09	WeETS5.3
<i>Development and Validation of MRI Compatible Pediatric Surgical Robot with Modular Tooling for Bone Biopsy</i> , pp. 4935-4941.	
Alvara, Alexander Nicholas	Sick Kids Children's Hospital
Looi, Thomas	Hospital for Sick Children
Saab, Rami	University of Toronto
Shorter, Amanda	Northwestern University, the Rehabilitation Institute of Chicago
Goldenberg, Andrew	University of Toronto
Drake, James	Hospital for Sick Children, University of Toronto
17:09-17:12	WeETS5.4
<i>Safe Motion Planning for Steerable Needles Using Cost Maps Automatically Extracted from Pulmonary Images</i> , pp. 4942-4949.	
Fu, Mengyu	University of North Carolina at Chapel Hill
Kuntz, Alan	University of North Carolina at Chapel Hill
Webster III, Robert James	Vanderbilt University
Alterovitz, Ron	University of North Carolina at Chapel Hill
17:12-17:15	WeETS5.5
<i>MIS-SLAM: Real-Time Large Scale Dense Deformable SLAM System in Minimal Invasive Surgery Based on Heterogeneous Computing</i> , N/A.	
Song, Jingwei	University of Technology, Sydney
Wang, Jun	University of Technology,

	Sydney
Zhao, Liang	Imperial College London
Huang, Shoudong	University of Technology, Sydney
Dissanayake, Gamini	University of Technology Sydney
17:15-17:18	WeETS5.6
<i>Trigonometric Ratio-Based Remote Center of Motion Mechanism for Bone Drilling</i> , pp. 4958-4963.	
Shim, Seongbo	DGIST
Lee, Seongpung	DGIST
Ji, Dae Keun	DGIST
Choi, Hyunseok	DGIS
Hong, Jaesung	DGIST
17:18-17:21	WeETS5.7
<i>Rolling-Joint Design Optimization for Tendon Driven Snake-Like Surgical Robots</i> , pp. 4964-4971.	
Berthet-Rayne, Pierre	Imperial College London
Leibrandt, Konrad	Imperial College London
Kim, Ki-Young	Korea Institute of Machinery and Materials
Seneci, Carlo Alberto	University College London
Shang, Jianzhong	Imperial College London
Yang, Guang-Zhong	Imperial College London
WeETS6	Room 1.L3
Telerobotics I (Regular session)	
Chair: Biagiotti, Luigi	University of Modena and Reggio Emilia
Co-Chair: Abderrahim, Mohamed	Carlos III University
17:00-17:03	WeETS6.1
<i>Enhancing the Command-Following Bandwidth for Transparent Bilateral Teleoperation</i> , pp. 4972-4979.	
Singh, Harsimran	DLR German Aerospace Center
Jafari, Aghil	University of the West of England
Ryu, Jee-Hwan	Korea Univ. of Tech. and Education
Peer, Angelika	University of the West of England, Bristol
17:03-17:06	WeETS6.2
<i>Preliminary Insights from the METERON SUPVIS Justin Space-Robotics Experiment</i> , N/A.	
Schmaus, Peter	German Aerospace Center (DLR)
Leidner, Daniel	German Aerospace Center (DLR)
Krueger, Thomas	European Space Agency
Schiele, Andre	European Space Agency
Pleintinger, Benedikt	Institute of Robotics and Mechatronics, GermanAerospaceCenter (DLR)
Bayer, Ralph	German Aerospace Center (DLR), Institute of Robotics and Mechatr
Lii, Neal Y.	German Aerospace Center (DLR)
17:06-17:09	WeETS6.3
<i>Transparency-Optimal Passivity Layer Design for Time-Domain Control of Multi-DoF Haptic-Enabled Teleoperation</i> , pp. 4988-4994.	
Moreno Franco, Olmo Alonso	Istituto Italiano Di Tecnologia
Bimbo, Joao	Istituto Italiano Di Tecnologia

Pacchierotti, Claudio	Centre National De La Recherche Scientifique (CNRS)
Prattichizzo, Domenico	University of Siena
Barcelli, Davide	University of Siena
Bianchini, Gianni	University of Siena
17:09-17:12	WeETS6.4
<i>Development and Evaluation of an Intuitive Flexible Interface for Teleoperating Soft Growing Robots</i> , pp. 4995-5002.	
El-Hussieny, Haitham	Faculty of Engineering(Shoubra), Benha University
Mehmood, Usman	Korea University of Technology and Education
Mehdi, Zain	KoreaTech
Jeong, Sang-Goo	KOREATECH
Usman, Muhammad	Korea University of Technology and Education
Hawkes, Elliot Wright	University of California, Santa Barbara
Okamura, Allison M.	Stanford University
Ryu, Jee-Hwan	Korea Univ. of Tech. and Education
17:12-17:15	WeETS6.5
<i>Comparison of Multimodal Heading and Pointing Gestures for Co- Located Mixed Reality Human-Robot Interaction</i> , pp. 5003-5009.	
Krupke, Dennis	University of Hamburg
Steinicke, Frank	HCI / University of Hamburg
Lubos, Paul	HCI / University of Hamburg
Jonetzko, Yannick	TAMS / University of Hamburg
Görner, Michael	University of Hamburg
Zhang, Jianwei	University of Hamburg
17:15-17:18	WeETS6.6
<i>Humanoid Teleoperation Using Task-Relevant Haptic Feedback</i> , pp. 5010-5017.	
Abi-Farraj, Firas	CNRS-Irisa
Henze, Bernd	German Aerospace Center (DLR)
Werner, Alexander	German Aerospace Center (DLR)
Panzirsch, Michael	DLR Institute of Robotics and Mechatronics
Ott, Christian	German Aerospace Center (DLR)
Roa, Maximo A.	DLR - German Aerospace Center
17:18-17:21	WeETS6.7
<i>ROS Reality: A Virtual Reality Framework Using Consumer-Grade Hardware for ROS-Enabled Robots</i> , pp. 5018-5025.	
Whitney, David	Brown University
Rosen, Eric	Brown University
Ullman, Daniel	Brown University
Phillips, Elizabeth	Brown University
Tellex, Stefanie	Brown
17:21-17:24	WeETS6.8
<i>User Evaluation of a Haptic-Enabled Shared-Control Approach for Robotic Telemanipulation</i> , pp. 5026-5033.	
Abi-Farraj, Firas	CNRS-Irisa
Pacchierotti, Claudio	Centre National De La Recherche Scientifique (CNRS)
Robuffo Giordano, Paolo	Centre National De La Recherche Scientifique (CNRS)
WeETS7	Room 2.L3

Video Session I (Regular session)	
Chair: Burschka, Darius	Technische Universitaet Muenchen
Co-Chair: De Momi, Elena	Politecnico Di Milano
17:00-17:03	WeETS7.1
<i>Towards an Automatic Spasticity Assessment by Means of Collaborative Robots</i> , pp. 5034-5034.	
Hernandez Melero, Mar	Universidad Carlos III De Madrid
Oña Simbaña, Edwin Daniel	University Carlos III of Madrid
Garcia-Haro, Juan Miguel	Carlos III University of Madrid
Jardon, Alberto	Universidad Carlos Iii De Madrid
Balaguer, Carlos	Universidad Carlos III De Madrid
17:03-17:06	WeETS7.2
<i>Research on Carved Turns of a Skiing Humanoid Robot on a Real-World Slope</i> , pp. 5035-5035.	
Han, Jeakweon	Hanyang University
DongKuk, Yoon	Hangyang Univ
Kim, BaekSeok	Hanyang University
Kim, Yitaek	Hanyang University
Park, Cheonyu	Hanyang
Song, Hyunjong	Hanyang University
Eum, Younseal	Sookmyung Women's University
Moon, Jeongin	Seoul National University
17:06-17:09	WeETS7.3
<i>Waiter Robot Application: Balance Control for Transporting Objects</i> , pp. 5036-5036.	
Garcia-Haro, Juan Miguel	Carlos III University of Madrid
Oña Simbaña, Edwin Daniel	University Carlos III of Madrid
Martinez, Santiago	Universidad Carlos III De Madrid
Hernandez Vicen, Juan	University Carlos Iii
Balaguer, Carlos	Universidad Carlos III De Madrid
17:09-17:12	WeETS7.4
<i>Visual-Inertial Teach and Repeat Powered by Google Tango</i> , pp. 5037-5037.	
Fehr, Marius	ETH Zürich
Schneider, Thomas	ETH Zürich
Sieglwart, Roland	ETH Zurich
17:12-17:15	WeETS7.5
<i>Distributed Reconfigurable Formation Generator for Mini Aerial Vehicles</i> , pp. 5038-5038.	
Briñón Arranz, Lara	CNRS
Muschinowski, Matthieu	Gipsa-Lab
Dumon, Jonathan	GIPSA-LAB
Marchand, Nicolas	GIPSA-Lab CNRS/U of Grenoble/INRIA
17:15-17:18	WeETS7.6
<i>Autonomous Underwater Vehicle Navigation in Structured Environment</i> , pp. 5039-5039.	
Park, Daegil	POSTECH
Lee, Yeongjun	Korea Research Institute of Ships and Ocean Engineering
Jung, Kwangyik	Korea Advanced Institute of Science and Technology
Kang, Hyungjoo	Korea Institute of Robot and Convergence
Ki, Hyeonseung	Korea Institute of Robot and Convergence
Lee, Jung-Woo	Korea Institute of Robot and Convergence
Choi, Young-Ho	Korean Institute of Robot and Convergence
Li, Ji-Hong	Korea Institue of Robot and

	Convergence
Myung, Hyun	KAIST (Korea Adv. Inst. Sci. & Tech.)
Choi, Hyun-Taek	Korea Institute of Oceans Science and Technology
Suh, Jin-Ho	Korea Institute of Robot and Convergence
17:18-17:21	WeETS7.7
<i>Cooperative UAVs As a Tool for Aerial Inspection of Large Scale Aging Infrastructure</i> , pp. 5040-5040.	
Kanellakis, Christoforos	LTU
Sharif Mansouri, Sina	Lulea University
Fresk, Emil	Luleå University of Technology
Kominiak, Dariusz	Luleå University of Technology
Nikolakopoulos, George	Luleå University of Technology
17:21-17:24	WeETS7.8
<i>Hear the Egg - Demonstrating Robotic Interactive Auditory Perception</i> , pp. 5041-5041.	
Strahl, Erik	Universität Hamburg
Kerzel, Matthias	Uni Hamburg
Eppe, Manfred	University of Hamburg
Griffiths, Sascha	Universität Hamburg
Wermter, Stefan	University of Hamburg
WeETS8	Room 2.R1
Parallel and Redundant Robots (Regular session)	
Chair: Saska, Martin	Czech Technical University in Prague
Co-Chair: Porta, Josep M	CSIC-UPC
17:00-17:03	WeETS8.1
<i>Computing Cross-Sections of the Workspace of Suspended Cable-Driven Parallel Robot with Sagging Cables Having Tension Limitations</i> , pp. 5042-5047.	
Merlet, Jean-Pierre	INRIA
17:03-17:06	WeETS8.2
<i>A Singularity-Robust LQR Controller for Parallel Robots</i> , pp. 5048-5054.	
Bordalba, Ricard	Institut De Robòtica I Informàtica Industrial, CSIC-UPC
Porta, Josep M	CSIC-UPC
Ros, Lluís	Consejo Superior De Investigaciones Científicas (CSIC)
17:06-17:09	WeETS8.3
<i>Performance of an IMU-Based Sensor Concept for Solving the Direct Kinematics Problem of the Stewart-Gough Platform</i> , pp. 5055-5062.	
Schulz, Stefan	Hamburg University of Technology
Seibel, Arthur	Hamburg University of Technology
Schlattmann, Josef	Hamburg University of Technology
17:09-17:12	WeETS8.4
<i>An Active Stabilizer for Cable-Driven Parallel Robot Vibration Damping</i> , pp. 5063-5070.	
Lesellier, Maximilian	LIRMM, Icube
Cuvillon, Loic	Strasbourg I University
Gangloff, Jacques	University of Strasbourg
Gouttefarde, Marc	CNRS
17:12-17:15	WeETS8.5
<i>CPA-Wrist: Compliant Pneumatic Actuation for Antagonistic</i>	

<i>Tendon Driven Wrists</i> , N/A.	
Toedtheide, Alexander	Technical University of Munich
Haddadin, Sami	Technical University of Munich
17:15-17:18	WeETS8.6
<i>Faster Motion on Cartesian Paths Exploiting Robot Redundancy at the Acceleration Level</i> , N/A.	
Al Khudir, Khaled	Sapienza University of Rome
De Luca, Alessandro	Sapienza University of Rome
17:18-17:21	WeETS8.7
<i>Triple Scissor Extender Robot Arm: A Solution to the Last One Foot Problem of Manipulation</i> , N/A.	
Shikari, Abbas	MIT
Asada, Harry	MIT
17:21-17:24	WeETS8.8
<i>Design and Fabrication of a Bipedal Robot Using Serial-Parallel Hybrid Leg Mechanism</i> , pp. 5095-5100.	
Gim, Kevin Genehyub	University of California, Los Angeles
Kim, Joohyung	Disney Research
Yamane, Katsu	Honda Research Institute, USA
WeETS9	Room 4.L1
Kinematics and Dynamics I (Regular session)	
Chair: Lynch, Kevin	Northwestern University
Co-Chair: Gouttefarde, Marc	CNRS
17:00-17:03	WeETS9.1
<i>Configuration Space Metrics</i> , pp. 5101-5108.	
Jeon, Hong Jun	UC Berkeley
Dragan, Anca	University of California Berkeley
17:03-17:06	WeETS9.2
<i>Fused Angles and the Deficiencies of Euler Angles</i> , pp. 5109-5116.	
Allgeuer, Philipp	University of Bonn
Behnke, Sven	University of Bonn
17:06-17:09	WeETS9.3
<i>Geometric Optimization of a Large Scale CDPR Operating on a Building Facade</i> , pp. 5117-5124.	
Hussein, Hussein	University of Montpellier, LIRMM
Cavalcanti Santos, Joao	University of Montpellier, LIRMM
Gouttefarde, Marc	CNRS
17:09-17:12	WeETS9.4
<i>Learning the Forward and Inverse Kinematics of a 6-DOF Concentric Tube Continuum Robot in SE(3)</i> , pp. 5125-5132.	
Grassmann, Reinhard	Gottfried Wilhelm Leibniz Universität Hannover
Modes, Vincent	Gottfried Wilhelm Leibniz Universität Hannover
Burgner-Kahrs, Jessica	Gottfried Wilhelm Leibniz Universität Hannover
17:12-17:15	WeETS9.5
<i>Learning Forward and Inverse Kinematics Maps Efficiently</i> , pp. 5133-5140.	
Kubus, Daniel	Technische Universitaet Braunschweig
Rayyes, Rania	TU Braunschweig
Steil, Jochen J.	Technische Universität Braunschweig
17:15-17:18	WeETS9.6
<i>A Fail-Safe Semi-Centralized Impedance Controller: Validation on a Parallel Kinematics Ankle</i> , pp. 5141-5147.	

Ruscelli, Francesco	Istituto Italiano Di Tecnologia
Laurenzi, Arturo	Istituto Italiano Di Tecnologia
Mingo Hoffman, Enrico	Fondazione Istituto Italiano Di Tecnologia
Tsagarakis, Nikos	Istituto Italiano Di Tecnologia

17:18-17:21 WeETS9.7

Probabilistic Kinematic State Estimation for Motion Planning of Planetary Rovers, pp. 5148-5154.

Ghosh, Sourish	Indian Institute of Technology, Kharagpur
Otsu, Kyohei	California Institute of Technology
Ono, Masahiro	California Institute of Technology

17:21-17:24 WeETS9.8

Constrained Control of Robotic Manipulators Using the Explicit Reference Governor, pp. 5155-5162.

Merckaert, Kelly	Vrije Universiteit Brussel (VUB)
Nicotra, Marco M	University of Michigan
Vanderborght, Bram	Vrije Universiteit Brussel
Garone, Emanuele	Université Libre De Bruxelles

WeETS10 Room 4.R1

Special Session: Functional Electrical Stimulation and Wearable Robots - towards a Hybrid Solution for Movement Restoration (Regular session)

Chair: Fraisse, Philippe LIRMM

17:00-17:03 WeETS10.1

Design and Implementation of a Novel Semi-Active Hybrid Unilateral Stance Control Knee Ankle Foot Orthosis (I), pp. 5163-5168.

Gil, Javier	Spanish National Research Council (CSIC)
Sánchez-Villamañán, M. Carmen	Neural Rehabilitation Group - Cajal Institute - CSIC (Spanish Na
Jesús, Gómez	Spanish National Research Council (CSIC)
Ortiz, Andrea	Spanish National Research Council (CSIC)
del-Ama, Antonio J.	National Hospital for Paraplegics
Pons, Jose Luis	Spanish Research Council, CSIC
Moreno, Juan C.	Cajal Institute, CSIC

17:03-17:06 WeETS10.2

Iterative Learning Vector Field for FES-Supported Cyclic Upper Limb Movements in Combination with Robotic Weight Compensation (I), pp. 5169-5174.

Passon, Arne	Technische Universität Berlin
Seel, Thomas	TU Berlin
Massmann, Jonas	Technische Universität Berlin
Freeman, Chris T	Univeristy of Southampton
Schauer, Thomas	Technische Universität Berlin

17:06-17:09 WeETS10.3

Cooperative Control for Knee Joint Flexion-Extension Movement Restoration (I), pp. 5175-5180.

Alouane, Mohamed Amine	Université Paris Est Créteil, France
Rifai, Hala	University of Paris Est Créteil
Amirat, Yacine	University of Paris Est Créteil (UPEC)
Mohammed, Samer	University of Paris Est Créteil - (UPEC)

17:09-17:12 WeETS10.4

New Approach of Cycling Phases Detection to Improve FES-

Pedaling in SCI Individuals (I), pp. 5181-5186.

de Souza Baptista, Roberto	University of Brasilia
Sijobert, Benoit	INRIA
Azevedo Coste, Christine	INRIA

17:12-17:15 WeETS10.5

Adaptive FES Assistance Using a Novel Gait Phase Detection Approach (I), pp. 5187-5193.

Huo, Weiguang	University of Paris-Est Créteil - UPEC
Arnez-Paniagua, Victor	Université Paris-Est Créteil
Ghedira, Mouna	Laboratoire Analyse Et Restauration Du Mouvement - GHU Henri Mon
Amirat, Yacine	University of Paris Est Créteil (UPEC)
Gracies, Jean-Michel	APHP - CHU Henri Mondor
Mohammed, Samer	University of Paris Est Créteil - (UPEC)

WeFTS1 Room 1.L5

Aerial Systems III (Regular session)

Chair: Matthies, Larry Jet Propulsion Laboratory

18:00-18:03 WeFTS1.1

Online Self-Supervised Long-Range Scene Segmentation for MAVs, pp. 5194-5199.

Daftry, Shreyansh	NASA Jet Propulsion Laboratory
Agrawal, Yashasvi	Carnegie Mellon University
Matthies, Larry	Jet Propulsion Laboratory

18:03-18:06 WeFTS1.2

PAMPC: Perception-Aware Model Predictive Control for Quadrotors, pp. 5200-5207.

Falanga, Davide	University of Zurich
Foehn, Philipp	University of Zurich
Lu, Peng	The Hong Kong Polytechnic University
Scaramuzza, Davide	University of Zurich

18:06-18:09 WeFTS1.3

History-Aware Autonomous Exploration in Confined Environments Using MAVs, pp. 5208-5215.

Witting, Christian Aamand	Technical University of Denmark
Fehr, Marius	ETH Zürich
Bähnmann, Rik	ETH Zürich
Oleynikova, Helen	ETH Zürich
Sieglwart, Roland	ETH Zurich

18:09-18:12 WeFTS1.4

Learning to Fly by MySelf: A Self-Supervised CNN-Based Approach for Autonomous Navigation, pp. 5216-5223.

Kouris, Alexandros	Imperial College London
Bouganis, Christos-Savvas	Imperial College London

18:12-18:15 WeFTS1.5

Hands and Faces, Fast: Mono-Camera User Detection Robust Enough to Directly Control a UAV in Flight, pp. 5224-5231.

MohaimenianPour, SeyedMehdi (Sepehr)	Simon Fraser University
Vaughan, Richard	Simon Fraser University

18:15-18:18 WeFTS1.6

Vision Based Forward Sensitive Reactive Control for a Quadrotor VTOL, pp. 5232-5238.

Stevens, Jean-Luc	Australian National University
Mahony, Robert	Australian National University

18:18-18:21 WeFTS1.7

Angle-Encoded Swarm Optimization for UAV Formation Path Planning (I), pp. 5239-5244.

Hoang, Van Truong	University of Technology Sydney
Phung, Manh Duong	Vietnam National University
Dinh, Tran Hiep	University of Technology Sydney
Ha, Q P	University of Technology Sydney

18:21-18:24 WeFTS1.8

An Integrated Localization-Navigation Scheme for Distance-Based Docking of UAVs, pp. 5245-5250.

Nguyen, Thien-Minh	Nanyang Technological University
Qiu, Zhirong	Nanyang Technological University
Cao, Muqing	Nanyang Technological University
Nguyen, Thien Hoang	Nanyang Technological University
Xie, Lihua	Nanyang Technological University

WeFTS2 Room 2.L5 KUKA Sensorial Perception III (Regular session)

Chair: Cianchetti, Matteo Scuola Superiore Sant'Anna

18:00-18:03 WeFTS2.1

3DmFV: 3D Point Cloud Classification in Real-Time Using Convolutional Neural Networks, N/A.

Ben-Shabat, Yizhak	Technion Israel Institute of Technology, Faculty of Mechanical
Lindenbaum, Michael	Technion
Fischer, Anath	Technion Israel Institute of Technology, Faculty of Mechanical

18:03-18:06 WeFTS2.2

Surfel-Based Next Best View Planning, N/A.

Monica, Riccardo	University of Parma
Aleotti, Jacopo	University of Parma

18:06-18:09 WeFTS2.3

Image-Based Lateral Position, Steering Behavior Estimation and Road Curvature Prediction for Motorcycles, N/A.

Damon, Pierre-Marie	University Paris-Saclay - MIT
Hadj-Abdelkader, Hicham	IBISC
Arioui, Hichem	Evry Val d'Essonne University
Youcef-Toumi, Kamal	Massachusetts Institute of Technology

18:09-18:12 WeFTS2.4

Layouts from Panoramic Images with Geometry and Deep Learning, N/A.

Fernandez-Labrador, Clara	University of Zaragoza
Perez-Yus, Alejandro	Universidad De Zaragoza
Lopez-Nicolas, Gonzalo	Universidad De Zaragoza
Guerrero, Josechu	Universidad De Zaragoza

18:12-18:15 WeFTS2.5

Tri-Axial Slicing for 3D Face Recognition from Adapted Rotational Invariants Spatial Moments and Minimal Keypoints Dependence, N/A.

da SILVA SIQUEIRA, Robson	Instituto Federal Do Ceará
Ribeiro Alexandre, Gilderlane	Universidade Federal Do Ceará
Marques Soares, José	Universidade Federal Do Ceará
Pereira Thé, George André	Federal University of Ceará

18:15-18:18 WeFTS2.6

Delay Compensation for a Telepresence System with 3D 360 Degree Vision Based on Deep Head Motion Prediction and Dynamic FoV Adaptation, N/A.

Aykut, Tamay	Technical University of Munich
Karimi, Mojtaba	Technical University of Munich
Burgmair, Christoph	Technical University of Munich
Finkenzeller, Andreas	Technical University of Munich
Bachhuber, Christoph	Technical University of Munich
Steinbach, Eckehard	Munich University of Technology

18:18-18:21 WeFTS2.7

Visual Navigation for Biped Humanoid Robots Using Deep Reinforcement Learning, N/A.

Lobos-Tsunekawa, Kenzo	Universidad De Chile
Leiva, Francisco	Universidad De Chile
Ruiz-del-Solar, Javier	Universidad De Chile

18:21-18:24 WeFTS2.8

Classification of Hanging Garments Using Learned Features Extracted from 3D Point Clouds, pp. 5307-5312.

Stria, Jan	Czech Technical University in Prague
Hlavac, Vaclav	Czech Technical University in Prague

WeFTS3 Room 1.L2 Swarm and Multi-Robots IV (Regular session)

Chair: Kim, Ayoung Korea Advanced Institute of Science Technology

Co-Chair: Krajník, Tomáš Czech Technical University

18:00-18:03 WeFTS3.1

Coverage Control for Multi-Robot Teams with Heterogeneous Sensing Capabilities Using Limited Communications, pp. 5313-5319.

Santos, María	Georgia Institute of Technology
Egerstedt, Magnus	Georgia Institute of Technology

18:03-18:06 WeFTS3.2

An Adaptive Robot for Building In-Plane Programmable Structures, pp. 5320-5327.

Pieber, Michael	Universität Innsbruck
Neurauter, Rene	Universität Innsbruck
Gerstmayr, Johannes	University Innsbruck, Institute of Mechatronics

18:06-18:09 WeFTS3.3

Communication Model-Task Pairing in Artificial Swarm Design, N/A

Haque, Musad	Johns Hopkins University Applied Physics Laboratory
McGowan, Connor	Vanderbilt University
Guo, Yifan	Vanderbilt University
Kirkpatrick, Dougals	Michigan State University
Adams, Julie	Oregon State University

18:09-18:12 WeFTS3.4

CVI-SLAM - Collaborative Visual-Inertial SLAM, N/A.

Schmuck, Patrik	ETH Zurich
Karrer, Marco	ETH Zurich
Chli, Margarita	ETH Zurich

18:12-18:15 WeFTS3.5

Circle Formation with Computation-Free Robots Shows Emergent Behavioral Structure, pp. 5344-5349.

St-Onge, David	Ecole Polytechnique De Montreal
Pincirol, Carlo	Worcester Polytechnic Institute

Beltrame, Giovanni	Ecole Polytechnique De Montreal
18:15-18:18	WeFTS3.6
<i>Efficient Parallel Self-Assembly under Uniform Control Inputs, N/A.</i>	
Schmidt, Arne	TU Braunschweig
Manzoor, Sheryl	University of Houston
Huang, Li	University of Houston
Becker, Aaron	University of Houston
Fekete, Sándor	Technische Universität Braunschweig
18:18-18:21	WeFTS3.7
<i>Sampling of Pareto-Optimal Trajectories Using Progressive Objective Evaluation in Multi-Objective Motion Planning, pp. 5358-5365.</i>	
Lee, Jeongseok	University of Washington
Yi, Daqing	University of Washington
Srinivasa, Siddhartha	University of Washington
18:21-18:24	WeFTS3.8
<i>Should We Compete or Should We Cooperate? Applying Game Theory to Task Allocation in Drone Swarms, pp. 5366-5371.</i>	
Roldán, Juan Jesús	Centre for Automation and Robotics
del Cerro, Jaime	Universidad Politécnica De Madrid
Barrientos, Antonio	UPM
WeFTS4	Room 2.L2
Micro and Nano Robot II (Regular session)	
Chair: Gauthier, Michael	FEMTO-ST Institute
Co-Chair: Cappelleri, David	Purdue University
18:00-18:03	WeFTS4.1
<i>A Magnetic Manipulator Cooled with Liquid Nitrogen, N/A.</i>	
Julien, Leclerc	University of Houston
Isichei, Benedict	University of Houston
Becker, Aaron	University of Houston
18:03-18:06	WeFTS4.2
<i>Magnetic Navigation of a Rotating Colloidal Swarm Using Ultrasound Images, pp. 5380-5385.</i>	
Wang, Qianqian	The Chinese University of Hong Kong
Yang, Lidong	The Chinese University of Hong Kong
Yu, Jiangfan	The Chinese University of Hong Kong
Vong, Chi-lan	The Chinese University of Hong Kong
Chiu, WAI, YAN Philip	Chinese University of Hong Kong
Zhang, Li	The Chinese University of Hong Kong
18:06-18:09	WeFTS4.3
<i>A Multi-Rate State Observer for Visual Tracking of Magnetic Micro-Agents Using 2D Slow Medical Imaging Modalities, pp. 5386-5393.</i>	
Kaya, Mert	University of Twente
Denasi, Alper	University of Twente
Scheggi, Stefano	University of Twente
Agbahca, Erdem	Konya Selcuk University
Yoon, ChangKyu	Department of Materials Science and Engineering, Johns Hopkins U

Gracias, David H.	The Johns Hopkins University, Baltimore
Misra, Sarthak	University of Twente
18:09-18:12	WeFTS4.4
<i>Real-Time Force-Feedback Micromanipulation Using Mobile Microrobots with Colored Fiducials, N/A.</i>	
Guix Noguera, Maria	Purdue University
Wang, Jianxiong	Purdue University
An, Ze	Purdue University
Adam, Georges	Purdue University
Cappelleri, David	Purdue University
18:12-18:15	WeFTS4.5
<i>Path Planning and Micromanipulation Using a Learned Model, N/A.</i>	
Venkatesan, Vinoth	Purdue University
Cappelleri, David	Purdue University
18:15-18:18	WeFTS4.6
<i>Thermocapillary Convective Flows Generated by Laser Points or Patterns: Comparison for the Non-Contact Micromanipulation of Particles at the Interface, N/A.</i>	
Terrazas Mallea, Ronald	Universite Libre De Bruxelles
Piron, Dimitri	Universite Libre De Bruxelles
Bolopion, Aude	Femto-St Institute
Lambert, Pierre	Université Libre De Bruxelles
Gauthier, Michael	FEMTO-ST Institute
18:18-18:21	WeFTS4.7
<i>Towards Controlled Flight of the Ionocraft: A Flying Microrobot Using Electrohydrodynamic Thrust with Onboard Sensing and No Moving Parts, N/A.</i>	
Drew, Daniel S.	UC Berkeley
Lambert, Nathan	University of California, Berkeley
Schindler, Craig	University of California, Berkeley
Pister, Kristofer S. J.	University of California, Berkeley
18:21-18:24	WeFTS4.8
<i>Nanorobotic System for Precise In-Situ 3D Manufacture of Helical Microstructures, N/A.</i>	
Lu, Haojian	City University of Hong Kong
Wang, Panbing	City University of Hong Kong
Tan, Rong	City University of Hongkong
Yang, Xiong	City University of Hongkong
Shen, Yajing	City University of Hong Kong
WeFTS5	Room 2.R3
Assistive Robotics (Regular session)	
Chair: Paez Granados, Diego	University of Tsukuba
Felipe	
Co-Chair: Hagita, Norihiro	ATR
18:00-18:03	WeFTS5.1
<i>Human Motion Classification Based on Multi-Modal Sensor Data for Lower Limb Exoskeletons, pp. 5431-5436.</i>	
Beil, Jonas	Karlsruhe Institute of Technology (KIT)
Ehrenberger, Isabel	Karlsruhe Institute of Technology (KIT)
Scherer, Clara	Karlsruhe Institute of Technology (KIT)
Mandery, Christian	Karlsruhe Institute of Technology (KIT)
Asfour, Tamim	Karlsruhe Institute of Technology (KIT)
18:03-18:06	WeFTS5.2

A Novel Joint Torque Estimation Method and Sensory System for Assistive Lower Limb Exoskeletons, pp. 5437-5444.

Saccales, Lorenzo	Fondazione Istituto Italiano Di Tecnologia
Sarakoglou, Ioannis	Fondazione Istituto Italiano Di Tecnologia
Tsagarakis, Nikos	Istituto Italiano Di Tecnologia

18:06-18:09 WeFTS5.3

Robotic Hand-Free-Stick for Walking Balance Assistance, pp. 5445-5450.

Tanaka, Yoshiyuki	Nagasaki University
Oyama, Naoki	Nagasaki University
Takenaka, Takazumi	Nagasaki University

18:09-18:12 WeFTS5.4

Soft Fabric Actuator for Robotic Applications, pp. 5451-5456.

Yang, Sang Yul	Sungkyunkwan University
Cho, Kyeong Ho	SungKyunKwan University
Kim, Youngeun	Sungkyunkwan University
Kim, Kihyeon	Sungkyunkwan University
Park, Jae Hyeong	Sungkwunkwan University
Jung, Hosang	Sungkyunkwan University
Ko, Jeong U	Sungkyunkwan University
Moon, Hyungpil	Sungkyunkwan University
Koo, Ja Choon	Sungkyunkwan University
Rodrigue, Hugo	Sungkyunkwan University
Suk, Ji Won	Sungkyunkwan University
Nam, Jaedo	Sungkyunkwan University
Choi, Hyouk Ryeol	Sungkyunkwan University

18:12-18:15 WeFTS5.5

Child-Sized Passive Exoskeleton for Supporting Voluntary Sitting and Standing Motions, pp. 5457-5462.

Sasaki, Kai	University of Tsukuba
Paez Granados, Diego Felipe	University of Tsukuba
Sugimoto, Minatsu	University of Tsukuba
Sugiyama, Taisei	University of Tsukuba
Suzuki, Kenji	University of Tsukuba

18:15-18:18 WeFTS5.6

Hands-Free Assistive Manipulator Using Augmented Reality and Tongue Drive System, pp. 5463-5468.

Chu, Fu-Jen	University of Michigan
Xu, Ruinian	Georgia Institute of Technology
Zhang, Zhenxuan	Georgia Institute of Technology
Vela, Patricio	Georgia Institute of Technology
Maysam, Ghovanloo	Georgia Institute of Technology

18:18-18:21 WeFTS5.7

Machine Learning Based Skill-Level Classification for Personal Mobility Devices Using Only Operational Characteristics, pp. 5469-5476.

Huang, Yifan	Waseda University
Kamezaki, Mitsuhiro	Waseda University
Mori, Taiga	Waseda University
Manawadu, Udara Eshan	Waseda University, Tokyo
Ishihara, Tatsuya	NTT
Nakano, Masanao	NTT Corporation
Koshiji, Kohjun	NTT
Higo, Naoki	Nippon Telegraph and Telephone Corp
Tsubaki, Toshimitsu	NTT
Sugano, Shigeki	Waseda University

18:21-18:24 WeFTS5.8

Pneumatic Microneedle-Based High-Density Semg Sleeve for Stable and Comfortable Skin Contact During Dynamic Motion, pp. 5477-5482.

Kim, Minjae	POSTECH
Gu, Gangyong	POSTECH
Chung, Wan Kyun	POSTECH

WeFTS6 Room 1.L3
Telerobotics II (Regular session)

Chair: Ishiguro, Hiroshi	Osaka University
Co-Chair: Park, Young Soo	Argonne National Laboratory

18:00-18:03 WeFTS6.1

Supervised Autonomous Locomotion and Manipulation for Disaster Response with a Centaur-Like Robot, pp. 5483-5490.

Klamt, Tobias	University of Bonn
Rodriguez, Diego	University of Bonn
Schwarz, Max	University Bonn
Lenz, Christian	University of Bonn
Pavlichenko, Dmytro	University of Bonn
Droeschel, David	University of Bonn
Behnke, Sven	University of Bonn

18:03-18:06 WeFTS6.2

Design of a Lightweight, Ergonomic Manipulator for Enabling Expressive Gesturing in Telepresence Robots, pp. 5491-5496.

Slack, James	Saint Louis University
DeProw, Kyle	Saint Louis University
Anderson, Zach	Southern Illinois University Edwardsville
Albacete Di Bartolomeo, Ricardo Manuel	Saint Louis University
Weinberg, Jerry	Southern Illinois University Edwardsville
Gorlewicz, Jenna	Saint Louis University

18:06-18:09 WeFTS6.3

Implementation of Augmented Teleoperation System Based on Robot Operating System (ROS), pp. 5497-5502.

Lee, Donghyeon	Pohang University of Science and Technology(POSTECH)
Park, Young Soo	Argonne National Laboratory

18:09-18:12 WeFTS6.4

Tracking-Based Depth Estimation of Metallic Pieces for Robotic Guidance, pp. 5503-5508.

Di Castro, Mario	CERN, European Organization for Nuclear Research
Veiga Almagro, Carlos	CERN
Lunghi, Giacomo	CERN
Marin, Raul	Jaume I University
Ferre, Manuel	Universidad Politecnica De Madrid
Masi, Alessandro	CERN (European Organization for Nuclear Research)

18:12-18:15 WeFTS6.5

Managing Off-Nominal Events in Shared Teleoperation with Learned Task Compliance, pp. 5509-5516.

Owan, Parker	University of Washington
Garbini, Joseph	U. of Washington
Devasia, Santosh	University of Washington

18:15-18:18 WeFTS6.6

Inferring Semantic State Transitions During Telerobotic Manipulation, pp. 5517-5524.

Bauer, Adrian Simon	German Aerospace Center (DLR)
---------------------	-------------------------------

Schmaus, Peter	German Aerospace Center (DLR)
Albu-Schäffer, Alin	DLR - German Aerospace Center
Leidner, Daniel	German Aerospace Center (DLR)
18:18-18:21	WeFTS6.7
<i>Smoother Position-Drift Compensation for Time Domain Passivity Approach Based Teleoperation</i> , pp. 5525-5532.	
Coelho, Andre	Institute of Robotics and Mechatronics - German Aerospace Center
Singh, Harsimran	DLR German Aerospace Center
Muskardin, Tin	German Aerospace Center (DLR)
Balachandran, Ribin	DLR
Kondak, Konstantin	German Aerospace Center
18:21-18:24	WeFTS6.8
<i>An Ungrounded Master Device for Tele-Microassembly</i> , pp. 5533-5538.	
Sakr, Sophia	Sorbonnes Université
Daunizeau, Thomas Pierre	Sorbonne Université
Reversat, David	Université Pierre Et Marie Curie
Régnier, Stéphane	University Pierre Et Marie Curie
Haliyo, Dogan Sinan	Sorbonne Université
WeFTS7 Room 2.L3	
Video Session II (Regular session)	
Chair: Kanoulas, Dimitrios	Istituto Italiano Di Tecnologia
Co-Chair: Kayacan, Erdal	Aarhus University
18:00-18:03	WeFTS7.1
<i>Hammer: Robot Programming Interface for Common People</i> , pp. 5539-5539.	
Brunete, Alberto	Universidad Politecnica De Madrid
Hernando, Miguel	UPM
Gambao, Ernesto	Universidad Politecnica De Madrid
18:03-18:06	WeFTS7.2
<i>The Art of Manipulation: Learning to Manipulate Blindly</i> , pp. 5540-5540.	
Haddadin, Sami	Technical University of Munich
Johannsmeier, Lars	Technical University Munich
18:06-18:09	WeFTS7.3
<i>Toward the Next Generation of Robotic Waiters</i> , pp. 5541-5541.	
Moriello, Lorenzo	University of Bologna
Chiaravalli, Davide	Alma Mater Studiorum, University of Bologna
Biagiotti, Luigi	University of Modena and Reggio Emilia
Melchiorri, Claudio	University of Bologna
18:09-18:12	WeFTS7.4
<i>Real Time Robot Path Planning for Dynamic Human-Robot-Cooperation Applications</i> , pp. 5542-5542.	
Bdiwi, Mohamad	Fraunhofer Institute for Machine Tools and Forming Technology IW
Hou, Shuxiao	Fraunhofer IWU
Delang, Kathleen	Fraunhofer Institute for Machine Tools and Forming Technology
18:12-18:15	WeFTS7.5
<i>High Power Hand with Retention Mechanism</i> , pp. 5543-5543.	

Mouri, Tetsuya	Gifu University
Kawasaki, Haruhisa	Gifu University
18:15-18:18	WeFTS7.6
<i>On-Chip Virtual Vortex Gear and Its Application</i> , pp. 5544-5544.	
Takayama, Toshio	Tokyo Institute of Technology
Tsai, Chia-Hung Dylan	National Chiao Tung University
Kaneko, Makoto	Osaka University
18:18-18:21	WeFTS7.7
<i>Deformation Capture Via Self-Sensing Capacitive Arrays</i> , pp. 5545-5545.	
Glauser, Oliver	ETH Zurich
Panozzo, Daniele	New York University
Hilliges, Otmar	ETH Zurich
Sorkine-Hornung, Olga	ETH Zurich
18:21-18:24	WeFTS7.8
<i>Excuse Me, May I Say Something? a Robot Facilitating Q&A for Lectures</i> , pp. 5546-5546.	
Palinko, Oskar	Osaka University
Shimaya, Jiro	Osaka University
Hoeck, Kristian	University of Manchester
Ogawa, Kohei	Osaka University
Jinnai, Nobuhiro	Osaka University
Yoshikawa, Yuichiro	Osaka University
Ishiguro, Hiroshi	Osaka University

WeFTS8 Room 2.R1	
Calibration and Identification (Regular session)	
Chair: Behnke, Sven	University of Bonn
18:00-18:03	WeFTS8.1
<i>Towards Autonomous Auto Calibration of Unregistered RGB-D Setups for Robotic Systems</i> , pp. 5547-5554.	
Halmetschlager-Funek, Georg	TU Wien
Prankl, Johann	University of Technology Vienna
Vincze, Markus	Vienna University of Technology
18:03-18:06	WeFTS8.2
<i>Adaptive Sensor Bias Estimation in Nine Degree of Freedom Inertial Measurement Units: Theory and Preliminary Evaluation</i> , pp. 5555-5561.	
Spielvogel, Andrew Robert	Johns Hopkins University
Whitcomb, Louis	The Johns Hopkins University
18:06-18:09	WeFTS8.3
<i>Automatic Extrinsic Calibration of a Camera and a 3D LiDAR Using Line and Plane Correspondences</i> , pp. 5562-5569.	
Zhou, Lipu	Carnegie Mellon University
Li, Zimo	Carnegie Mellon University
Kaess, Michael	Carnegie Mellon University
18:09-18:12	WeFTS8.4
<i>SCALAR - Simultaneous Calibration of 2D Laser and Robot's Kinematic Parameters Using Three Planar Constraints</i> , pp. 5570-5575.	
Lembono, Teguh Santoso	Idiap Research Institute
Suárez-Ruiz, Francisco	Nanyang Technological University
Pham, Quang-Cuong	NTU Singapore
18:12-18:15	WeFTS8.5
<i>Keyframe-Based Photometric Online Calibration and Color Correction</i> , pp. 5576-5583.	
Quenzel, Jan	University of Bonn
Horn, Jannis	University of Bonn

Houben, Sebastian	University of Bochum
Behnke, Sven	University of Bonn
18:15-18:18	WeFTS8.6
<i>Automatic Calibration of Multiple Cameras and Depth Sensors with a Spherical Target</i> , pp. 5584-5591.	
Kümmerle, Julius	FZI Forschungszentrum Informatik
Kühner, Tilman	FZI Forschungszentrum Informatik
Lauer, Martin	Karlsruhe Institute of Technology
18:18-18:21	WeFTS8.7
<i>Automated Tool Coordinate Calibration System of an Industrial Robot</i> , pp. 5592-5597.	
Luo, Ren	National Taiwan University
Wang, Hao	National Taiwan University
WeFTS9	Room 4.L1
Kinematics and Dynamics II (Regular session)	
Chair: Sanz, Pedro J	Jaume I
Co-Chair: Vlachos, Evgenios	University of Southern Denmark
18:00-18:03	WeFTS9.1
<i>Robust Optimization-Based Calculation of Invariant Trajectory Representations for Point and Rigid-Body Motion</i> , pp. 5598-5605.	
Vochten, Maxim	KU Leuven
De Laet, Tinne	University of Leuven
De Schutter, Joris	KU Leuven
18:03-18:06	WeFTS9.2
<i>Kinematic Analysis of Magnetic Continuum Robots Using Continuation Method and Bifurcation Analysis</i> , N/A.	
Peyron, Quentin	FEMTO-ST
Boehler, Quentin	ETH Zurich
Rabenorosa, Kanty	Univ. Bourgogne Franche-Comté, CNRS
Nelson, Bradley J.	ETH Zurich
Renaud, Pierre	ICube AVR
Andreff, Nicolas	Université De Franche Comté
18:06-18:09	WeFTS9.3
<i>Reducing the Computational Complexity of Mass-Matrix Calculation for High DOF Robots</i> , pp. 5614-5619.	
Safeea, Mohammad	University of Coimbra
Bearee, Richard	Arts Et Metiers ParisTech
Neto, Pedro	University of Coimbra
18:09-18:12	WeFTS9.4
<i>Position-Based Optimizable Time-Integrator for Frictional Articulated Bodies Dynamics</i> , pp. 5620-5627.	
Pan, Zherong	The University of North Carolina at Chapel Hill
Manocha, Dinesh	University of North Carolina at Chapel Hill
18:12-18:15	WeFTS9.5
<i>Hydrodynamics Parameter Identification of Submerged Bodies: Numerical Methods Comparison and Friction Model Analysis</i> , pp. 5628-5633.	
Gartner, Nicolas	Université De Toulon
Richier, Mathieu	University of Toulon
Hugel, Vincent	University of Toulon
18:15-18:18	WeFTS9.6
<i>Actuator and Friction Dynamics Formulation in Control of PKMs: From Design to Real-Time Experiments</i> , pp. 5634-5639.	
Saied, Hussein	Univesity of Montpellier, LIRMM
Chemori, Ahmed	Cnrs / Lirmm

El Rafei, Maher	Lebanese University, Faculty of Engineering, CRSI
Francis, Clovis	Lebanese University
Pierrot, François	Cnrs - Lirmm
18:18-18:21	WeFTS9.7
<i>A Robust Time-Stepping Scheme for Quasistatic Rigid Multibody Systems</i> , pp. 5640-5647.	
Pang, Tao	Massachusetts Institute of Technology
Tedrake, Russ	Massachusetts Institute of Technology
18:21-18:24	WeFTS9.8
<i>Design and Development of a Slender Dual-Structure Continuum Robot for In-Situ Aeroengine Repair</i> , pp. 5648-5653.	
Wang, Mingfeng	University of Nottingham
Palmer, David	University of Nottingham
Dong, Xin	University of Nottingham
Alatorre, David	University of Nottingham
Axinte, Dragos	University of Nottingham
Norton, Andy	Rolls-Royce Plc

WeFTS10	Room 4.R1
Special Session: Ontological and Knowledge-Based Approaches for Robots and Autonomous Systems Engineering (Regular session)	
Chair: Gonçalves, Paulo	Instituto Politecnico De Castelo Branco
Co-Chair: Sanz, Ricardo	Universidad Politecnica De Madrid
18:00-18:03	WeFTS10.1
<i>Reasoning Systems for Semantic Navigation in Mobile Robots (I)</i> , pp. 5654-5659.	
Crespo, Jonathan	Universidad Carlos III De Madrid
Barber, Ramon	Universidad Carlos III of Madrid
Mozos, Oscar	Technical University of Cartagena
Beßler, Daniel	Universität Bremen
Beetz, Michael	University of Bremen
18:03-18:06	WeFTS10.2
<i>Hybrid Approach for Human Activity Recognition by Ubiquitous Robots (I)</i> , pp. 5660-5665.	
Mojarad, Roghayeh	UPEC
Attal, Ferhat	University Paris-Est Créteil (UPEC)
Chibani, Abdelghani	Lissi Lab Paris EST University
Rama Fiorini, Sandro	Université Paris-Est Creteil
Amirat, Yacine	University of Paris Est Créteil (UPEC)
18:06-18:09	WeFTS10.3
<i>Approaches for Action Sequence Representation in Robotics: A Review (I)</i> , pp. 5666-5671.	
Nakawala, Hirenkumar	Politecnico Di Milano
Chandrakant	
Gonçalves, Paulo	Instituto Politecnico De Castelo Branco
Fiorini, Paolo	University of Verona
Ferrigno, Giancarlo	Politecnico Di Milano
De Momi, Elena	Politecnico Di Milano
18:09-18:12	WeFTS10.4
<i>Ontology-Based Knowledge Representation for Increased Skill Reusability in Industrial Robots (I)</i> , pp. 5672-5678.	
Topp, Elin Anna	Lund University - LTH

Stenmark, Maj	Lund University
Ganslandt, Alexander	Lund University
Svensson, Andreas	Lund University
Haage, Mathias	Lund University
Malec, Jacek	Lund University

18:12-18:15 WeFTS10.5

Skill-Oriented Designer of Conceptual Robotic Structures (I), pp. 5679-5684.

Ramos, Francisco	University of Castilla-La Mancha
Scrob, Cristian	Indra Sistemas, S.A
Vazquez, Andres	Universidad De Castilla La Mancha
Fernandez, Raul	Universidad De Castilla La Mancha
Olivares, Alberto	Universidad De Castilla-La Mancha

Technical Program for Thursday October 4, 2018

ThATS1	Room 1.L5
Aerial Systems IV (Regular session)	
Chair: Faigl, Jan	Czech Technical University in Prague
Co-Chair: de Croon, Guido	TU Delft / ESA
09:00-09:03	ThATS1.1
<i>Integration of a Canine Agent in a Wireless Sensor Network for Information Gathering in Search and Rescue Missions</i> , pp. 5685-5690.	
Fernandez Lozano, Jesus	Universidad De Malaga
Mandow, Anthony	University of Malaga
Martín-Guzmán, Miguel	Universidad De Málaga (UMA)
Martín-Ávila, Juan	Universidad De Málaga (UMA)
Serón, Javier	University of Malaga
Martinez, Jorge L.	University of Malaga
Gomez-Ruiz, Jose Antonio	University of Malaga
Socarras Bertiz, Carlos	Universidad De La Guajira
Miranda-Páez, Jesús	Universidad De Málaga (UMA)
García-Cerezo, Alfonso	University of Malaga
09:03-09:06	ThATS1.2
<i>Any-Time Trajectory Planning for Safe Emergency Landing</i> , pp. 5691-5696.	
Váňa, Petr	Czech Technical University in Prague
Sláma, Jakub	Czech Technical University in Prague
Faigl, Jan	Czech Technical University in Prague
Paces, Pavel	Czech Technical University in Prague
09:06-09:09	ThATS1.3
<i>PiDrone: An Autonomous Educational Drone Using Raspberry Pi and Python</i> , pp. 5697-5703.	
Brand, Isaiah	Brown University
Roy, Josh	Brown University
Ray, Aaron	Brown University
Oberlin, John	Brown University
Tellex, Stefanie	Brown
09:09-09:12	ThATS1.4
<i>State Estimate Recovery for Autonomous Quadcopters</i> , pp. 5704-5710.	
Beffa, Luciano	ETH Zürich
Ledergerber, Anton Josef	ETH Zurich
D'Andrea, Raffaello	ETHZ
09:12-09:15	ThATS1.5
<i>A Revisited Approach to Lateral Acceleration Modeling for Quadrotor UAVs State Estimation</i> , pp. 5711-5718.	
Sartori, Daniele	Shanghai Jiao Tong University
Zou, Danping	Shanghai Jiao Ton University
Pei, Ling	Shanghai Jiao Tong University
Yu, Wenxian	Shanghai Jiao Tong University
09:15-09:18	ThATS1.6
<i>Assisted Control for Semi-Autonomous Power Infrastructure Inspection Using Aerial Vehicles</i> , pp. 5719-5726.	
McFadyen, Aaron	Queensland University of Technology
Dayoub, Feras	Queensland University of Technology
Martin, Steven Colin	Queensland University of Technology

Ford, Jason	Queensland University of Technology
Corke, Peter	Queensland University of Technology
09:18-09:21	ThATS1.7
<i>Bidirectional Thrust for Multirotor MAVs with Fixed-Pitch Propellers</i> , pp. 5727-5734.	
Maier, Moritz	German Aerospace Center (DLR)
09:21-09:24	ThATS1.8
<i>DREGON: Dataset and Methods for UAV-Embedded Sound Source Localization</i> , pp. 5735-5742.	
Strauss, Martin	Friedrich-Alexander University
Mordel, Pol	CNRS/IRISA Rennes
Miguet, Victor	ENS Rennes
Deleforge, Antoine	Inria Rennes - Bretagne Atlantique
ThATS2	Room 2.L5 KUKA
Sensorial Perception IV (Regular session)	
Chair: Zhang, Jianwei	University of Hamburg
Co-Chair: Lilienthal, Achim J.	Örebro University
09:00-09:03	ThATS2.1
<i>Incremental Semi-Supervised Learning from Streams for Object Classification</i> , pp. 5743-5749.	
Chiotellis, Ioannis	Technical University Munich
Zimmermann, Franziska	Carl Zeiss Microscopy GmbH
Cremers, Daniel	Technical University of Munich
Triebel, Rudolph	German Aerospace Center (DLR)
09:03-09:06	ThATS2.2
<i>Joint 3D Proposal Generation and Object Detection from View Aggregation</i> , pp. 5750-5757.	
Ku, Jason	University of Waterloo
Mozifian, Melissa	University of Waterloo
Lee, Jungwook	University of Waterloo
Harakeh, Ali	University of Waterloo
Waslander, Steven Lake	University of Waterloo
09:06-09:09	ThATS2.3
<i>TSSD: Temporal Single-Shot Detector Based on Attention and LSTM</i> , pp. 5758-5763.	
Chen, Xingyu	Institute of Automation, Chinese Academy of Science
Wu, Zhengxing	Chinese Academy of Sciences
Yu, Junzhi	Chinese Academy of Sciences
09:09-09:12	ThATS2.4
<i>Real-Time Clustering and Multi-Target Tracking Using Event-Based Sensors</i> , pp. 5764-5769.	
Barranco, Francisco	University of Granada
Fermuller, Cornelia	University of Maryland
Ros, Eduardo	University of Granada
09:12-09:15	ThATS2.5
<i>Speeding-Up Object Detection Training for Robotics with FALKON</i> , pp. 5770-5776.	
Maiettni, Elisa	ICub Facility, Istituto Italiano Di Tecnologia and DIBRIS, Unive
Pasquale, Giulia	Istituto Italiano Di Tecnologia
Rosasco, Lorenzo	Istituto Italiano Di Tecnologia & Massachusetts Institute Of Techn
Natale, Lorenzo	Istituto Italiano Di Tecnologia
09:15-09:18	ThATS2.6

Disparity Sliding Window: Object Proposals from Disparity Images, pp. 5777-5784.

Müller, Julian	University of Ulm
Fregin, Andreas	Daimler AG
Dietmayer, Klaus	University of Ulm

09:18-09:21 ThATS2.7

Semantic Segmentation from Sparse Labeling Using Multi-Level Superpixels, pp. 5785-5792.

Alonso, Iñigo	University of Zaragoza
Murillo, Ana Cristina	University of Zaragoza

09:21-09:24 ThATS2.8

Real-Time Segmentation with Appearance, Motion and Geometry, pp. 5793-5800.

Siam, Mennatullah	University of Alberta
Elkerdawy, Sara	University of Alberta
Gamal, Mostafa	Cairo University
Abdelrazek, Moemen	Cairo University
Jagersand, Martin	University of Alberta
Zhang, Hong	University of Alberta

ThATS3	Room 1.L2
Vision-Based Navigation I (Regular session)	

Chair: Ude, Ales	Jozef Stefan Institute
------------------	------------------------

09:00-09:03 ThATS3.1

VarNet: Exploring Variations for Unsupervised Video Prediction, pp. 5801-5806.

Jin, Beibei	Institute of Computing Technology, Chinese Academy of Sciences
Hu, Yu	Institute of Computing Technology Chinese Academy of Sciences
Zeng, Yiming	Institute of Computing Technology, Chinese Academy of Sciences,
Tang, Qiankun	The Institute of Computing Technology of the Chinese Academy Of
Liu, Shice	Institute of Computing Technology Chinese Academy of Sciences
Ye, Jing	Institute of Computing Technology, Chinese Academy of Sciences

09:03-09:06 ThATS3.2

Obstacle Detection for USVs by Joint Stereo-View Semantic Segmentation, pp. 5807-5812.

Bovcon, Borja	Faculty of Computer and Information Science, University of Ljubl
Kristan, Matej	University of Ljubljana

09:06-09:09 ThATS3.3

Efficient Absolute Orientation Revisited, pp. 5813-5818.

Lourakis, Manolis	Foundation for Research and Technology -- Hellas
Terzakis, George	University of Portsmouth

09:09-09:12 ThATS3.4

Active Structure-From-Motion for 3D Straight Lines, pp. 5819-5825.

Mateus, André	Institute for Systems and Robotics, LARSyS, Instituto Superior T
Tahri, Omar	INSA Centre Val-De-Loire

Miraldo, Pedro

Instituto Superior Técnico,
University of Lisbon

09:12-09:15 ThATS3.5

Stereo Camera Localization in 3D LiDAR Maps, pp. 5826-5833.

Kim, Youngji	Korea Advanced Institute of Science and Technology
Jeong, Jinyong	KAIST
Kim, Ayoung	Korea Advanced Institute of Science Technology

09:15-09:18 ThATS3.6

Vision-Based Terrain Classification and Solar Irradiance Mapping for Solar-Powered Robotics, pp. 5834-5840.

Kingry, Nathaniel	Iowa State University
Jung, Myungjin	The Ohio State University
Derse, Evan	Iowa State University
Dai, Ran	The Ohio State University

09:18-09:21 ThATS3.7

Structured Skip List: A Compact Data Structure for 3D Reconstruction, pp. 5841-5847.

Li, Shi-Jie	Nankai University
Cheng, Ming-Ming	Nankai University, Tianjin
Liu, Yun	Nankai University
Lu, Shao-Ping	Nankai University
Prisacariu, Victor	University of Oxford
Wang, Yahui	Nankai University

09:21-09:24 ThATS3.8

Towards Real-Time Unsupervised Monocular Depth Estimation on CPU, pp. 5848-5854.

Poggi, Matteo	University of Bologna
Aleotti, Filippo	University of Bologna
Tosi, Fabio	University of Bologna
Mattoccia, Stefano	University of Bologna

ThATS4	Room 2.L2
Control I (Regular session)	

Chair: Kyriakopoulos, Kostas	National Technical Univ. of Athens
Co-Chair: Li, Haoxiang	Aibee

09:00-09:03 ThATS4.1

A Plug-In Feed-Forward Control for Sloshing Suppression in Robotic Teleoperation Tasks, pp. 5855-5860.

Biagiotti, Luigi	University of Modena and Reggio Emilia
Moriello, Lorenzo	University of Bologna
Chiaravalli, Davide	Alma Mater Studiorum, University of Bologna
Melchiorri, Claudio	University of Bologna

09:03-09:06 ThATS4.2

Elastic Structure Preserving Impedance (ESPI) Control for Compliantly Actuated Robots, pp. 5861-5868.

Keppler, Manuel	German Aerospace Center (DLR)
Lakatos, Dominic	German Aerospace Center (DLR)
Ott, Christian	German Aerospace Center (DLR)
Albu-Schäffer, Alin	DLR - German Aerospace Center

09:06-09:09 ThATS4.3

An Efficient and Time-Optimal Trajectory Generation Approach for Waypoints under Kinematic Constraints and Error Bounds, pp. 5869-5876.

Lin, Jianjie	Fortiss, An-Institut Technische Universität München
Somani, Nikhil	Technische Universität München
Hu, Biao	Beijing University of Chemical Technology
Rickert, Markus	Fortiss, An-Institut Technische Universität München
Knoll, Alois	Tech. Univ. Muenchen TUM
09:09-09:12	ThATS4.4
<i>Leveraging Precomputation with Problem Encoding for Warm-Starting Trajectory Optimization in Complex Environments</i> , pp. 5877-5884.	
Merkt, Wolfgang Xaver	The University of Edinburgh
Ivan, Vladimir	University of Edinburgh
Vijayakumar, Sethu	University of Edinburgh
09:12-09:15	ThATS4.5
<i>A Self-Tuning Impedance Controller for Autonomous Robotic Manipulation</i> , pp. 5885-5891.	
Balatti, Pietro	Istituto Italiano Di Tecnologia
Kanoulas, Dimitrios	Istituto Italiano Di Tecnologia
Rigano, Giuseppe Francesco	Istituto Italiano Di Tecnologia
Muratore, Luca	Istituto Italiano Di Tecnologia
Tsagarakis, Nikos	Istituto Italiano Di Tecnologia
Ajoudani, Arash	Istituto Italiano Di Tecnologia
09:15-09:18	ThATS4.6
<i>Robust Fixed-Wing UAV Guidance with Circulating Artificial Vector Fields</i> , pp. 5892-5899.	
Rezende, Adriano	Universidade Federal De Minas Gerais
Gonçalves, Vinicius Mariano	UFMG
Raffo, Guilherme V.	Universidade Federal De Minas Gerais
Pimenta, Luciano	Universidade Federal De Minas Gerais
09:18-09:21	ThATS4.7
<i>Development of MR Clutch for a Prospective 5 DOF Robot</i> , pp. 5900-5905.	
Pisetskiy, Sergey	Western University
Kermani, Mehrdad R.	University of Western Ontario
09:21-09:24	ThATS4.8
<i>Real-Time Quad-Rotor Path Planning for Mobile Obstacle Avoidance Using Convex Optimization</i> , pp. 5906-5911.	
Szmuk, Michael	University of Washington
Pascucci, Carlo Alberto	University of Washington
Acikmese, Behcet	University of Washington

ThATS5	Room 2.R3
Soft Robotics I (Regular session)	
Chair: Catalano, Manuel	Istituto Italiano Di Tecnologia
Giuseppe	
Co-Chair: Hauser, Helmut	University of Bristol
09:00-09:03	ThATS5.1
<i>Embedded and Controllable Shape Morphing with Twisted-And-Coiled Actuators</i> , pp. 5912-5917.	
Sun, Jiefeng	Colorado State University
Pawlowski, Benjamin	Colorado State University
Zhao, Jianguo	Colorado State University
09:03-09:06	ThATS5.2
<i>Soft Robotic Burrowing Device with Tip-Extension and Granular Fluidization</i> , pp. 5918-5923.	
Naclerio, Nicholas	University of California, Santa

Hubicki, Christian	Georgia Institute of Technology
Ozkan Aydin, Yasemin	Georgia Institute of Technology
Goldman, Daniel	Georgia Institute of Technology
Hawkes, Elliot Wright	University of California, Santa Barbara
09:06-09:09	ThATS5.3
<i>Liquid Metal-Microelectronics Integration for a Sensorized Soft Robot Skin</i> , pp. 5924-5929.	
Hellebrekers, Tess	Carnegie Mellon University
Ozutmiz, Kadri Bugra	Carnegie Mellon University
Yin, Jessica	Carnegie Mellon University
Majidi, Carmel	Carnegie Mellon University
09:09-09:12	ThATS5.4
<i>Development of a Hybrid Gripper with Soft Material and Rigid Structures</i> , pp. 5930-5935.	
Park, Wookeun	UNIST
Seo, Seongmin	UNIST
Bae, Joonbum	UNIST
09:12-09:15	ThATS5.5
<i>Design for Control of a Soft Bidirectional Bending Actuator</i> , pp. 5936-5943.	
Bilodeau, Raymond Adam	Purdue University
Yuen, Michelle Ching-Sum	Purdue University
Case, Jennifer	Purdue University
Buckner, Trevor	Yale University
Kramer-Bottiglio, Rebecca	Yale University
09:15-09:18	ThATS5.6
<i>Sliding-Layer Laminates: A Robotic Material Enabling Robust and Adaptable Undulatory Locomotion</i> , pp. 5944-5951.	
Jiang, Mingsong	Ucsd
Gravish, Nicholas	Harvard University
09:18-09:21	ThATS5.7
<i>Development of a Pneumatically Driven Flexible Finger with Feedback Control of a Polyurethane Bend Sensor</i> , pp. 5952-5957.	
Mori, Yoshiki	Ritsumeikan University
Zhu, Mingzhu	Ritsumeikan Global Innovation Research Organization, Ritsumeikan
Kim, Hyejong	Robotis
Wada, Akira	RITSUMEIKAN UNIVERSITY
Mitsuzuka, Masahiko	Mitsui Chemichals, INC
Yoshiro Tajitsu, Y Tajitsu	Kansai University
Kawamura, Sadao	Ritsumeikan University
09:21-09:24	ThATS5.8
<i>Modelling an Actuated Large Deformation Soft Continuum Robot Surface Undergoing External Forces Using a Lumped-Mass Approach</i> , pp. 5958-5963.	
Habibi, Hossein	Teesside University
Yang, Chenghao	Tianjin University
Kang, Rongjie	Tianjin University
Walker, Ian	Clemson University
Godage, Isuru S.	Depaul University
Dong, Xin	University of Nottingham
Branson, David	University of Nottingham

ThATS6	Room 1.L3
Motion Control (Regular session)	
Chair: Morales Saiki, Luis	ATR / Nagoya University
Yoichi	
Co-Chair: Fraisse, Philippe	LIRMM

09:00-09:03	ThATS6.1
<i>Motion Generators Combined with Behavior Trees: A Novel Approach to Skill Modelling</i> , pp. 5964-5971.	
Rovida, Francesco	Aalborg University Copenhagen
Wuthier, David	Aalborg University Copenhagen
Grossmann, Bjarne	Aalborg University Copenhagen
Fumagalli, Matteo	Aalborg University
Krueger, Volker	Aalborg University Copenhagen
09:03-09:06	ThATS6.2
<i>Enhanced Explosive Motion for Torque Controlled Actuators through Field Weakening Control</i> , pp. 5972-5979.	
Roosting, Wesley	Istituto Italiano Di Tecnologia
Kashiri, Navvab	Istituto Italiano Di Tecnologia
Tsagarakis, Nikos	Istituto Italiano Di Tecnologia
09:06-09:09	ThATS6.3
<i>Ground Disturbance Rejection Approach for Mobile Robotic Manipulators with Hydraulic Actuators</i> , pp. 5980-5986.	
Rigotti-Thompson, Mattia	Pontificia Universidad Catolica De Chile
Torres-Torriti, Miguel	Pontificia Universidad Catolica De Chile
Auat Cheein, Fernando	Universidad Tecnica Federico Santa Maria
Troni, Giancarlo	Pontificia Universidad Católica De Chile
09:09-09:12	ThATS6.4
<i>Computationally-Robust and Efficient Prioritized Whole-Body Controller with Contact Constraints</i> , pp. 5987-5994.	
Kim, Donghyun	University of Texas at Austin
Lee, Jaemin	University of Texas at Austin
Ahn, Junhyeok	University of Texas at Austin
Campbell IV, Orion	University of Texas at Austin
Hwang, Hochul	Hanyang University
Sentis, Luis	The University of Texas at Austin
09:12-09:15	ThATS6.5
<i>Continuously Shaping Projections and Operational Space Tasks</i> , pp. 5995-6002.	
Dehio, Niels	Technical University Braunschweig
Kubus, Daniel	Technische Universitaet Braunschweig
Steil, Jochen J.	Technische Universität Braunschweig
09:15-09:18	ThATS6.6
<i>Dual-Arm Relative Tasks Performance Using Sparse Kinematic Control</i> , pp. 6003-6009.	
Tarbouriech, Sonny	Tecnalia
Navarro, Benjamin	University of Orléans
Fraisse, Philippe	LIRMM
Crosnier, André	LIRMM
Cherubini, Andrea	LIRMM - Université De Montpellier CNRS
Salle, Damien	Tecnalia Research and Innovation
09:18-09:21	ThATS6.7
<i>Jet-HR1: Stepping Posture Optimization for Bipedal Robot Over Large Ditch Based on a Ducted-Fan Propulsion System</i> , pp. 6010-6015.	
Liu, Biao	Guangdong University of Technology, School of Automation
Huang, Zhifeng	Guangdong University of Technology

Wei, Jiapeng	Guangdong University of Technology
Shi, Chaoyang	University of Toronto
Ota, Jun	The University of Tokyo
Zhang, Yun	Guangdong University of Technology
09:21-09:24	ThATS6.8
<i>User-Adaptive Human-Robot Formation Control for an Intelligent Robotic Walker Using Augmented Human State Estimation and Pathological Gait Characterization</i> , pp. 6016-6022.	
Chalvatzaki, Georgia	National Technical University of Athens
Papageorgiou, Xanthi S.	National Technical University of Athens
Maragos, Petros	National Technical University of Athens
Tzafestas, Costas S.	ICCS - Inst of Communication and Computer Systems
ThATS7 Room 2.L3	
Learning from Demonstration I (Regular session)	
Chair: Lefeber, Dirk	Vrije Universiteit Brussel
Co-Chair: Aloimonos, Yiannis	University of Maryland
09:00-09:03	ThATS7.1
<i>Passivity Based Iterative Learning of Admittance-Coupled Dynamic Movement Primitives for Interaction with Changing Environments</i> , pp. 6023-6028.	
Kramberger, Aljaz	Maersk Mc-Kinney Møller Institute, University of Southern Denmark
Shahriari, Erfan	Technical University of Munich
Gams, Andrej	Jozef Stefan Institute
Nemec, Bojan	Jozef Stefan Institute
Ude, Ales	Jozef Stefan Institute
Haddadin, Sami	Technical University of Munich
09:03-09:06	ThATS7.2
<i>Robust Robot Learning from Demonstration and Skill Repair Using Conceptual Constraints</i> , pp. 6029-6036.	
Mueller, Carl Louis	University of Colorado Boulder
Venickx, Jeff	University of Colorado Boulder
Hayes, Bradley	University of Colorado Boulder
09:06-09:09	ThATS7.3
<i>Kernel-Based Human-Dynamics Inversion for Precision Robot Motion-Primitives</i> , pp. 6037-6042.	
Warrier, Rahul Balakrishna	University of Washington, Seattle
Devasia, Santosh	University of Washington
09:09-09:12	ThATS7.4
<i>Associative Skill Memory Models</i> , pp. 6043-6048.	
Girgin, Hakan	Boğaziçi University
Ugur, Emre	Bogazici University
09:12-09:15	ThATS7.5
<i>Towards Intelligent Arbitration of Diverse Active Learning Queries</i> , pp. 6049-6056.	
Bullard, Kalesha	Georgia Institute of Technology
Thomaz, Andrea Lockerd	University of Texas at Austin
Chernova, Sonia	Georgia Institute of Technology
09:15-09:18	ThATS7.6
<i>Segmenting and Sequencing of Compliant Motions</i> , pp. 6057-6064.	
Hagos, Tesfamichael	Aalto University
Marikos	

Suomalainen, Markku Heikki	Aalto University
Kyrki, Ville	Aalto University
09:18-09:21	ThATS7.7
<i>An Uncertainty-Aware Minimal Intervention Control Strategy Learned from Demonstrations</i> , pp. 6065-6071.	
Silvério, João	Istituto Italiano Di Tecnologia
Huang, Yanlong	Istituto Italiano Di Tecnologia
Rozo, Leonel	Istituto Italiano Di Tecnologia
Caldwell, Darwin G.	Istituto Italiano Di Tecnologia
09:21-09:24	ThATS7.8
<i>Generative Low-Shot Network Expansion</i> , pp. 6072-6077.	
עדי, יוסי	Intel
Kliger, Mark, Mark	Amazon
Fleishman, Shachar, Shachar	Amazon
Cohen-Or, Daniel, Daniel	Tel-Aviv University
ThATS8	Room 2.R1
Industrial Robots (Regular session)	
Co-Chair: Abi-Farraj, Firas	CNRS-Irisa
09:00-09:03	ThATS8.1
<i>Sensor Selection and Stage & Result Classifications for Automated Miniature Screwdriving</i> , pp. 6078-6085.	
Cheng, Xianyi	Carnegie Mellon University
Jia, Zhenzhong	Carnegie Mellon University
Bhatia, Ankit	Carnegie Mellon University
Aronson, Reuben	Carnegie Mellon University
Mason, Matthew T.	Carnegie Mellon University
09:03-09:06	ThATS8.2
<i>Evaluating Methods for End-User Creation of Robot Task Plans</i> , pp. 6086-6092.	
Paxton, Chris	Johns Hopkins University
Jonathan, Felix	Johns Hopkins University
Hundt, Andrew	Johns Hopkins University
Mutlu, Bilge	University of Wisconsin–Madison
Hager, Gregory	Johns Hopkins University
09:06-09:09	ThATS8.3
<i>A Gripper System for Robustly Picking Various Objects Placed Densely by Suction and Pinching</i> , pp. 6093-6098.	
Nakamoto, Hideichi	Toshiba Corporation
Ohtake, Masashi	Toshiba Infrastructure Systems & Solutions Corporation
Komoda, Kazuma	Toshiba Corporation
Sugahara, Atsushi	Toshiba Corporation
Ogawa, Akihito	TOSHIBA CORPORATION
09:09-09:12	ThATS8.4
<i>Mass Manufacturing of Self-Actuating Robots: Integrating Sensors and Actuators Using Flexible Electronics</i> , pp. 6099-6104.	
Dementyev, Artem	MIT
Jie, Qi	MIT Media Lab
Ou, Jifei	MIT Media Lab
Paradiso, Joseph	MIT Media Lab
09:12-09:15	ThATS8.5
<i>Achieving Flexible Assembly Using Autonomous Robotic Systems</i> , pp. 6105-6110.	
Gilday, Kieran	University of Cambridge
Hughes, Josie	University of Cambridge
Iida, Fumiya	University of Cambridge
09:15-09:18	ThATS8.6

Experimental Verification of a Magnetic Levitation Transport System for the OLED Display Evaporation Process under Vacuum, N/A.

Ha, Chang-Wan	Korea Institute of Machinery & Material (KIMM), KOREA
Kim, Chang-Hyun	Korea Institute of Machinery and Materials (KIMM)
Lim, Jaewon	Korea Institute of Machinery & Materials (kimm)

09:18-09:21 ThATS8.7

Human Pose Estimation in Presence of Occlusion Using Depth Camera Sensors, in Human-Robot Coexistence Scenarios, pp. 6117-6123.

Casalino, Andrea	Politecnico Di Milano
Guzman, Sebastian	Politecnico Di Milano
Zanchettin, Andrea Maria	Politecnico Di Milano
Rocco, Paolo	Politecnico Di Milano

09:21-09:24 ThATS8.8

Feasibility of the UR5 Industrial Robot for Robotic Rehabilitation of the Upper Limbs after Stroke, pp. 6124-6129.

Kyrkjebø, Erik	Western Norway University of Applied Sciences
Laastad, Mads Johan	Norwegian University of Science and Technology
Stavdahl, Øyvind	Norwegian University of Science and Technology (NTNU)

ThATS9 Room 4.L1

Robot Safety (Regular session)

Chair: Sgorbissa, Antonio	University of Genova
Co-Chair: Zalama, Eduardo	Instituto De Las Tecnologías de la Producción (ITAP). University of Valladolid

09:00-09:03 ThATS9.1

Safety-Related Tasks within the Set-Based Task-Priority Inverse Kinematics Framework, pp. 6130-6135.

Di Lillo, Paolo Augusto	University of Cassino and Southern Lazio
Arrichiello, Filippo	Università Di Cassino E Del Lazio Meridionale
Antonelli, Gianluca	Univ. of Cassino and Southern Lazio
Chiaverini, Stefano	Università Di Cassino E Del Lazio Meridionale

09:03-09:06 ThATS9.2

Model-Based Engineering, Safety Analysis and Risk Assessment for Personal Care Robots, pp. 6136-6141.

Yakymets, Nataliya	CEA
Sango, Marc	All4Tec
Dhouib, Saadia	CEA LIST
Gelin, Rodolphe	Aldebaran Robotics

09:06-09:09 ThATS9.3

Computation of Safe Path Velocity for Collaborative Robots, pp. 6142-6148.

Sloth, Christoffer	University of Southern Denmark
Petersen, Henrik Gordon	University of Southern Denmark

09:09-09:12 ThATS9.4

Adversarial Learning-Based On-Line Anomaly Monitoring for Assured Autonomy, pp. 6149-6154.

Patel, Naman	New York University Tandon School of Engineering
Saridena, Apoorva Nandini	New York University Tandon School of Engineering

Choromanska, Anna	New York University Tandon School of Engineering
Krishnamurthy, Prashanth	New York University Tandon School of Engineering
Khorrami, Farshad	New York University Tandon School of Engineering
09:12-09:15	ThATS9.5
<i>Inspection System for Automatic Measurement of Level Differences in Belt Conveyors Using Inertial Measurement Unit</i> , pp. 6155-6161.	
Yasutomi, André Yuji	Hitachi Ltd
Enoki, Hideo	Hitachi Ltd
Yamaguchi, Shigeki	Hitachi High-Technologies Corporation
Tamura, Kazuma	Hitachi High-Technologies Corporation
09:15-09:18	ThATS9.6
<i>Safe Reinforcement Learning on Autonomous Vehicles</i> , pp. 6162-6167.	
Isele, David	University of Pennsylvania
Nakhaei, Alireza	MPB Communications Inc
Fujimura, Kikuo	Honda Research Institute
09:18-09:21	ThATS9.7
<i>Distributed Direction of Arrival Estimation-Aided Cyberattack Detection in Networked Multi-Robot Systems</i> , pp. 6168-6173.	
Lee, Sangjun	Purdue University
Min, Byung-Cheol	Purdue University
09:21-09:24	ThATS9.8
<i>Evaluating Robotic Devices of Non-Wearable Transferring Aids Using Whole-Body Robotic Simulator of the Elderly</i> , pp. 6174-6179.	
Matsumoto, Yoshio	AIST
Ogata, Kunihiro	National Institute of Advanced Industrial Science and Technology
Kajitani, Isamu	National Inst. of AIST
Homma, Keiko	National Institute of Advanced Industrial Science and Technology
Wakita, Yujin	National Institute of Advanced Industrial Science and Technology
ThATS10	Room 4.R1
Special Session: Mobile Microrobotics (Regular session)	
Co-Chair: Pané, Salvador	ETH Zurich
09:00-09:03	ThATS10.1
<i>Automated Control of Multifunctional Magnetic Spores Using Fluorescence Imaging for Microrobotic Cargo Delivery (I)</i> , pp. 6180-6185.	
Yang, Lidong	The Chinese University of Hong Kong
Zhang, Yabin	The Chinese University of Hong Kong
Vong, Chi-lan	The Chinese University of Hong Kong
Zhang, Li	The Chinese University of Hong Kong
09:03-09:06	ThATS10.2
<i>Collectives of Spinning Mobile Microrobots for Navigation and Object Manipulation at the Air-Water Interface (I)</i> , pp. 6186-6192.	
Wang, Wendong	Max Planck Institute for Intelligent Systems
Kishore, Vimal	Max Planck Institute for

Koens, Lyndon	Intelligent Systems DAMTP, University of Cambridge
Lauga, Eric	University of Cambridge
Sitti, Metin	Max-Planck Institute for Intelligent Systems
09:06-09:09	ThATS10.3
<i>Fabrication and Locomotion of Flexible Nanoswimmers (I)</i> , pp. 6193-6198.	
Jang, Bumjin	ETHZ
Aho, Amanda	ETHZ
Nelson, Bradley J.	ETH Zurich
Pane, Salvador	ETH Zurich
09:09-09:12	ThATS10.4
<i>Gait Learning for Soft Microrobots Controlled by Light Fields (I)</i> , pp. 6199-6206.	
von Rohr, Alexander	University of Lübeck
Trimpe, Sebastian	Max Planck Institute for Intelligent Systems
Marco, Alonso	Max Planck Institute for Intelligent Systems
Fischer, Peer	Max-Planck-Institute for Intelligent Systems
Palagi, Stefano	Istituto Italiano Di Tecnologia

ThBTS1	Room 1.L5
Aerial Systems V (Regular session)	
Chair: Valls Miro, Jaime	University of Technology Sydney
Co-Chair: Taylor, Zachary	ETH Zürich
Jeremy	
11:30-11:33	ThBTS1.1
<i>A Novel Monocular-Based Navigation Approach for UAV Autonomous Transmission-Line Inspection</i> , pp. 6207-6213.	
Bian, Jiang	Institute of Automation, Chinese Academy of Sciences; Universit
Hui, Xiaolong	Institute of Automation, Chinese Academy of Sciences
Zhao, Xiaoguang	Institute of Automation, Chinese Academy of Sciences
Tan, Min	Institute of Automation, Chinese Academy of Sciences
11:33-11:36	ThBTS1.2
<i>Ceiling Effects for Surface Locomotion of Small Rotorcraft</i> , pp. 6214-6219.	
Hsiao, Yi Hsuan	City University of Hong Kong
Chirarattananon, Pakpong	City University of Hong Kong
11:36-11:39	ThBTS1.3
<i>Autonomous Grasping Robotic Aerial System for Perching (AGRASP)</i> , pp. 6220-6225.	
Popek, Katie	Johns Hopkins University Applied Physics Lab
Johannes, Matthew	The Johns Hopkins University Applied Physics Laboratory
Wolfe, Kevin	Johns Hopkins University Applied Physics Laboratory
Hegeman, Rachel	Johns Hopkins University
Hatch, Jessica	The Johns Hopkins University Applied Physics Laboratory
Moore, Joseph	Johns Hopkins University Applied Physics Lab
Katyal, Kapil	Johns Hopkins University Applied Physics Lab
Yeh, Bryanna	The Johns Hopkins University

Bamberger, Robert	Applied Physics Laboratory Johns Hopkins University Applied Physics Lab
11:39-11:42	ThBTS1.4
<i>Energy-Efficient Trajectory Generation for a Hexarotor with Dual-Tilting Propellers</i> , pp. 6226-6232.	
Morbidi, Fabio	Université De Picardie Jules Verne
Bicego, Davide	LAAS-CNRS
Ryll, Markus	MIT
Franchi, Antonio	LAAS-CNRS
11:42-11:45	ThBTS1.5
<i>Towards Autonomous Stratospheric Flight: A Generic Global System Identification Framework for Fixed-Wing Platforms</i> , pp. 6233-6240.	
Lee, Jongseok	German Aerospace Center
Muskardin, Tin	German Aerospace Center (DLR)
RuizPaez, Cristina	German Aerospace Center
Oettershagen, Philipp	ETH Zurich
Stastny, Thomas	Swiss Federal Institute of Technology (ETH Zurich)
Sa, Inkyu	ETH Zurich
Sieglwart, Roland	ETH Zurich
Kondak, Konstantin	German Aerospace Center
11:45-11:48	ThBTS1.6
<i>Design and Implementation of Cloud-Like Soft Drone S-CLOUD</i> , pp. 6241-6246.	
Song, Seung Hwan	SungkyunkwanUniversity
Shon, Hyun Wook	Sungkyunkwan University
Yeon, Gyu Yang	SUNGKYUNKWAN UNIVERSITY
Choi, Hyouk Ryeol	Sungkyunkwan University
11:48-11:51	ThBTS1.7
<i>Recovery Control for Quadrotor UAV Colliding with a Pole</i> , pp. 6247-6254.	
Dicker, Gareth	McGill University
Sharf, Inna	McGill University
Rustagi, Pulkit	Indian Institute of Technology Kharagpur
11:51-11:54	ThBTS1.8
<i>ArduSoar: An Open-Source Thermalling Controller for Resource-Constrained Autopilots</i> , pp. 6255-6262.	
Tabor, Samuel	N/A
Guilliard, Iain	CSIRO
Kolobov, Andrey	Microsoft Research
ThBTS2 Room 2.L5 KUKA	
Sensorial Perception V (Regular session)	
Chair: Chatila, Raja	ISIR
Co-Chair: Yaguchi, Hiroaki	The University of Tokyo
11:30-11:33	ThBTS2.1
<i>Incremental Learning-Based Adaptive Object Recognition for Mobile Robots</i> , pp. 6263-6268.	
Turkoglu, Mehmet Ozgur	University of Twente, TNO Intelligent Imaging
ter Haar, Frank	TNO Intelligent Imaging
van der Stap, Nanda	University of Twente
11:33-11:36	ThBTS2.2
<i>Object Detection and Pose Estimation Based on Convolutional Neural Networks Trained with Synthetic Data</i> , pp. 6269-6276.	

Josifovski, Josip	Universität Hamburg
Kerzel, Matthias	Uni Hamburg
Pregizer, Christoph	Viewlicity GmbH
Posniak, Lukas	Viewlicity GmbH
Wermter, Stefan	University of Hamburg
11:36-11:39	ThBTS2.3
<i>Towards Event-Driven Object Detection with Off-The-Shelf Deep Learning</i> , pp. 6277-6283.	
Iacono, Massimiliano	Istituto Italiano Di Tecnologia
Weber, Stefan	Istituto Italiano Di Tecnologia
Glover, Arren	Istituto Italiano Di Tecnologia
Bartolozzi, Chiara	Istituto Italiano Di Tecnologia
11:39-11:42	ThBTS2.4
<i>Material Recognition Using a Capacitive Proximity Sensor with Flexible Spatial Resolution</i> , pp. 6284-6290.	
Alagi, Hosam	Karlsruhe Institut of Technology
Heilig, Alexander	Karlsruhe Institute of Technology
Escaida Navarro, Stefan	Inria
Kroeger, Torsten	Karlsruher Institut Für Technologie (KIT)
Hein, Björn	Karlsruhe Institute of Technology (KIT)
11:42-11:45	ThBTS2.5
<i>Interactive Training of Object Detection without ImageNet</i> , pp. 6291-6296.	
Martinson, Eric	Soar Technology
11:45-11:48	ThBTS2.6
<i>Action Selection for Interactive Object Segmentation in Clutter</i> , pp. 6297-6304.	
Patten, Timothy	Technical University of Vienna
Zillich, Michael	Vienna University of Technology
Vincze, Markus	Vienna University of Technology
11:48-11:51	ThBTS2.7
<i>Towards a Real-Time Environment Reconstruction for VR-Based Teleoperation through Model Segmentation</i> , pp. 6305-6310.	
Kohn, Sebastian	Framatome GmbH, Instrumentation & Control - Autonomous Systems (
Blank, Andreas	Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Institu
Puljiz, David	Karlsruhe Institute of Technology
Zenkel, Lothar	Framatome GmbH, Instrumentation & Control - Autonomous Systems (
Bieber, Oswald	Framatome GmbH, Instrumentation & Control - Autonomous Systems (
Hein, Björn	Karlsruhe Institute of Technology (KIT)
Franke, Jörg	University of Erlangen-Nuremberg
11:51-11:54	ThBTS2.8
<i>DROAN - Disparity-Space Representation for Obstacle Avoidance: Enabling Wire Mapping & Avoidance</i> , pp. 6311-6318.	
Dubey, Geetesh	Carnegie Mellon University
Madaan, Ratnesh	Carnegie Mellon University
Scherer, Sebastian	Carnegie Mellon University
ThBTS3 Room 1.L2	
Vision-Based Navigation II (Regular session)	
Chair: Casals, Alicia	Universitat Politècnica De Catalunya, Barcelona Tech

Co-Chair: Yang, Lidong	The Chinese University of Hong Kong
11:30-11:33	ThBTS3.1
<i>Robocentric Visual-Inertial Odometry</i> , pp. 6319-6326.	
Huai, Zheng	University of Delaware
Huang, Guoquan	University of Delaware
11:33-11:36	ThBTS3.2
<i>Appearance-Based Along-Route Localization for Planetary Missions</i> , pp. 6327-6334.	
Grixa, Iris Lynne	German Aerospace Center (DLR)
Schulz, Philipp Tobias	Deutsches Zentrum Für Luft Und Raumfahrt
Stuerzl, Wolfgang	DLR, Institute of Robotics and Mechantronics
Triebel, Rudolph	German Aerospace Center (DLR)
11:36-11:39	ThBTS3.3
<i>A Monocular Indoor Localiser Based on an Extended Kalman Filter and Edge Images from a Convolutional Neural Network</i> , pp. 6335-6340.	
Unicomb, James	University of Technology, Sydney
Ranasinghe, Ravindra	University of Technology Sydney
Dantanarayana, Lakshitha	University of Technology, Sydney
Dissanayake, Gamini	University of Technology Sydney
11:39-11:42	ThBTS3.4
<i>Automated Map Reading: Image Based Localisation in 2-D Maps Using Binary Semantic Descriptors</i> , pp. 6341-6348.	
Panphattarasap, Pilailuck	University of Bristol
Calway, Andrew	University of Bristol
11:42-11:45	ThBTS3.5
<i>Interval-Based Cooperative UAVs Pose Domain Characterization from Images and Ranges</i> , pp. 6349-6356.	
Kenmogne, Ide-Flore	INRIA
Drevelle, Vincent	Université De Rennes 1, IRISA, INRIA Rennes
Marchand, Eric	Université De Rennes 1, IRISA, INRIA Rennes
11:45-11:48	ThBTS3.6
<i>Joint Point Cloud and Image Based Localization for Efficient Inspection in Mixed Reality</i> , pp. 6357-6363.	
Das, Manash Pratim	Indian Institute of Technology Kharagpur
Dong, Zhen	Wuhan University
Scherer, Sebastian	Carnegie Mellon University
11:48-11:51	ThBTS3.7
<i>Probabilistic Dense Reconstruction from a Moving Camera</i> , pp. 6364-6371.	
Ling, Yonggen	Tencent AI Lab
Wang, Kaixuan	Hong Kong University of Science and Technology
Shen, Shaojie	Hong Kong University of Science and Technology
11:51-11:54	ThBTS3.8
<i>Summarizing Large Scale 3D Mesh</i> , pp. 6372-6377.	
Ben Salah, Imeen	Université De Rouen
Kramm, Sébastien	Université De Rouen
Demonceaux, Cédric	Université Bourgogne Franche-Comté
Vasseur, Pascal	Université De Rouen

ThBTS4	Room 2.L2
Control II (Regular session)	
Chair: Albu-Schäffer, Alin	DLR - German Aerospace Center
11:30-11:33	ThBTS4.1
<i>A Robust Control Method for the Elbow of the Humanoid Robot TEO Based on a Fractional Order Controller</i> , pp. 6378-6383.	
Muñoz, Jorge	University
Monje, Concepción A.	University Carlos III of Madrid
Martin, Fernando	Carlos III UNIVERSITY
Balaguer, Carlos	Universidad Carlos III De Madrid
11:33-11:36	ThBTS4.2
<i>FPGA-Based Velocity Estimation for Control of Robots with Low-Resolution Encoders</i> , pp. 6384-6389.	
Wu, Jie Ying	Johns Hopkins University
Chen, Zihan	Auris Health, Inc
Deguet, Anton	Johns Hopkins University
Kazanzides, Peter	Johns Hopkins University
11:36-11:39	ThBTS4.3
<i>Active Disturbance Rejection Control of a Flying-Wing Tailsitter in Hover Flight</i> , pp. 6390-6396.	
Yang, Yunjie	Tsinghua University
Zhu, Jihong	Tsinghua University
Zhang, Xiaojun	Tsinghua University
Wang, Xiangyang	Tsinghua University
11:39-11:42	ThBTS4.4
<i>Underwater Modeling, Experiments and Control Strategies of FroBot</i> , pp. 6397-6403.	
Yang, Yi	Beijing Institute of Technology
Fan, Zhenhui	Beijing Institute of Technology
Zhu, ZhongJing	Beijing Institute of Technology
Zhang, Jianqing	Beijing Institute of Technology
11:42-11:45	ThBTS4.5
<i>Feedback Linearizing Controller for a Single Link Flexible Arm with a Passive Gravity Compensation Mechanism</i> , pp. 6404-6410.	
Cambara, Juan C.	Escuela Técnica Superior De IngenierosIndustriales/Universid ad D
Feliu, Vicente	Escuela Técnica Superior De IngenierosIndustriales/Universid ad D
11:45-11:48	ThBTS4.6
<i>A Practical Method to Speed-Up the Experimental Procedure of Iterative Learning Controllers</i> , pp. 6411-6416.	
Kocan, Oktay	ONERA - the French Aerospace Lab
Manecy, Augustin	ONERA, the French Aerospace Lab
Poussot-Vassal, Charles	Onera
11:48-11:51	ThBTS4.7
<i>System Identification and Closed-Loop Control of a Hydraulically Amplified Self-Healing Electrostatic (HASEL) Actuator</i> , pp. 6417-6423.	
Schunk, Cosima	University of Colorado
Pearson, Levi	University of Colorado at Boulder
Acome, Eric	University of Colorado Boulder
Morrissey, Timothy	University of Colorado Boulder
Correll, Nikolaus	University of Colorado at Boulder
Keplinger, Christoph	University of Colorado
Rentschler, Mark	University of Colorado at Boulder
Humbert, James Sean	University of Maryland

11:51-11:54	ThBTS4.8
<i>Motion Control of Piezo-Driven Stage Via a Chattering-Free Sliding Mode Controller with Hysteresis Compensation</i> , pp. 6424-6430.	
Fan, Yunfeng	Singapore University of Technology and Design
He, Yichang	SUTD
Zhang, Dingguo	Shanghai Jiao Tong University
Tan, U-Xuan	Singapore University of Technology and Design
ThBTS5	Room 2.R3
Soft Robotics II (Regular session)	
Chair: Vanderborght, Bram	Vrije Universiteit Brussel
Co-Chair: Kamezaki, Mitsuhiro	Waseda University
11:30-11:33	ThBTS5.1
<i>A Universal Gripper Using Optical Sensing to Acquire Tactile Information and Membrane Deformation</i> , pp. 6431-6436.	
Sakuma, Tatsuya	Nara Institute of Science and Technology
von Drigalski, Felix Wolf	Nara Institute of Science and Technology
Hans Erich	Nara Institute of Science and Technology
Ding, Ming	Nara Institute of Science and Technology
Takamatsu, Jun	Nara Institute of Science and Technology
Ogasawara, Tsukasa	Nara Institute of Science and Technology
11:33-11:36	ThBTS5.2
<i>Towards a Soft Fingertip with Integrated Sensing and Actuation</i> , pp. 6437-6444.	
McInroe, Benjamin	University of California, Berkeley
Chen, Carolyn	University of California, Berkeley
Goldberg, Ken	UC Berkeley
Bajcsy, Ruzena	Univ of California, Berkeley
Fearing, Ronald	University of California at Berkeley
11:36-11:39	ThBTS5.3
<i>Learning Oscillator-Based Gait Controller for String-Form Soft Robots Using Parameter-Exploring Policy Gradients</i> , pp. 6445-6452.	
Ishige, Matthew	The University of Tokyo
Umedachi, Takuya	The University of Tokyo
Taniguchi, Tadahiro	Ritsumeikan University
Kawahara, Yoshihiro	The University of Tokyo
11:39-11:42	ThBTS5.4
<i>Soft Inflatable Sensing Modules for Safe and Interactive Robots</i> , N/A.	
Kim, Taekyoung	Seoul National University
Yoon, Sohee John	Seoul National University
Park, Yong-Lae	Seoul National University
11:42-11:45	ThBTS5.5
<i>A Partially Filled Jamming Gripper for Underwater Recovery of Objects Resting on Soft Surfaces</i> , pp. 6461-6468.	
Licht, Stephen	University of Rhode Island
Rizzo, Domenico	University of Rhode Island
Badlissi, George	University of Rhode Island
Collins, Everett	University of Rhode Island
11:45-11:48	ThBTS5.6
<i>CLASH Compliant Low Cost Antagonistic Servo Hand</i> , pp. 6469-6476.	

Friedl, Werner	German AerospaceCenter (DLR)
Hoepfner, Hannes	DLR - German Aerospace Center
Schmidt, Florian	German Aerospace Center
Roa, Maximo A.	DLR - German Aerospace Center
Grebenstein, Markus	German Aerospace Center (DLR)
11:48-11:51	ThBTS5.7
<i>FBG-Based Control of a Continuum Manipulator Interacting with Obstacles</i> , pp. 6477-6483.	
Sefati, Shahriar	Johns Hopkins University
Murphy, Ryan Joseph	Johns Hopkins University Applied Physics Laboratory
Alambeigi, Farshid	Johns Hopkins University
Pozin, Michael	Johns Hopkins University
Iordachita, Ioan Iulian	Johns Hopkins University
Taylor, Russell H.	The Johns Hopkins University
Armand, Mehran	Johns Hopkins University Applied Physics Laboratory
11:51-11:54	ThBTS5.8
<i>Modeling and Trajectory Tracking Control of a New Parallel Flexible Link Robot</i> , pp. 6484-6489.	
Morlock, Merlin	Hamburg University of Technology
Meyer, Niklas	Hamburg University of Technology
Pick, Marc-André	Hamburg University of Technology
Seifried, Robert	Hamburg University of Technology
ThBTS6	Room 1.L3
Sampling-Based Motion Planning (Regular session)	
Co-Chair: Brunete, Alberto	Universidad Politecnica De Madrid
11:30-11:33	ThBTS6.1
<i>Deep Sequential Models for Sampling-Based Planning</i> , pp. 6490-6497.	
Kuo, Yen-Ling	MIT
Barbu, Andrei	MIT
Katz, Boris	MIT
11:33-11:36	ThBTS6.2
<i>A Topology-Based Path Similarity Metric and Its Application to Sampling-Based Motion Planning</i> , pp. 6498-6505.	
Denny, Jory	University of Richmond
Chen, Kaiwen	University of Richmond
Zhou, Hanglin	University of Richmond
11:36-11:39	ThBTS6.3
<i>RG-Trees: Trajectory-Free Feedback Motion Planning Using Sparse Random Reference Governor Trees</i> , pp. 6506-6511.	
Golbol, Ferhat	Middle East Technical University
Ankarali, Mustafa Mert	Middle East Technical University
Saranli, Afsar	Middle East Technical University
11:39-11:42	ThBTS6.4
<i>Real-Time Motion Planning in Changing Environments Using Topology-Based Encoding of past Knowledge</i> , pp. 6512-6517.	
Fisher, Richard	University of the Witwatersrand
Rosman, Benjamin	CSIR
Ivan, Vladimir	University of Edinburgh
11:42-11:45	ThBTS6.5

Distributionally Robust Sampling-Based Motion Planning under Uncertainty, pp. 6518-6523.

Summers, Tyler University of Texas at Dallas

11:45-11:48 ThBTS6.6

Hierarchical Path Planner Using Workspace Decomposition and Parallel Task-Space RRTs, pp. 6524-6531.

Mesesan, George German Aerospace Center (DLR)

Roa, Maximo A. DLR - German Aerospace Center

Icer, Esra Technische Universität München

Althoff, Matthias Technische Universität München

11:48-11:51 ThBTS6.7

Kinodynamic Comfort Trajectory Planning for Car-Like Robots, pp. 6532-6539.

Shin, Heechan KAIST

Kim, Donghyuk KAIST

Yoon, Sung-eui KAIST

11:51-11:54 ThBTS6.8

Expert-Guided Kinodynamic RRT Path Planner for Non-Holonomic Robots, pp. 6540-6545.

Sanz, Jose Maria GMV

Hernando, Miguel UPM

Zaragoza, Guillermo Universidad Politécnica De Madrid

Brunete, Alberto Universidad Politecnica De Madrid

ThBTS7 Room 2.L3

Learning from Demonstration II (Regular session)

Chair: Calinon, Sylvain Idiap Research Institute

Co-Chair: Victores, Juan G. Universidad Carlos III De Madrid

11:30-11:33 ThBTS7.1

Robot Imitation through Vision, Kinesthetic and Force Features with Online Adaptation to Changing Environments, pp. 6546-6551.

Fernandez-Fernandez, Raul Universidad Carlos III De Madrid

Victores, Juan G. Universidad Carlos III De Madrid

Estevez, David Universidad Carlos III De Madrid

Balaguer, Carlos Universidad Carlos III De Madrid

11:33-11:36 ThBTS7.2

Probabilistic Learning of Torque Controllers from Kinematic and Force Constraints, pp. 6552-6559.

Silvério, João Istituto Italiano Di Tecnologia

Huang, Yanlong Istituto Italiano Di Tecnologia

Rozo, Leonel Istituto Italiano Di Tecnologia

Calinon, Sylvain Idiap Research Institute

Caldwell, Darwin G. Istituto Italiano Di Tecnologia

11:36-11:39 ThBTS7.3

Learning Coordinated Vehicle Maneuver Motion Primitives from Human Demonstration, pp. 6560-6565.

Mbanisi, Kenekchukwu Worcester Polytechnic Institute (WPI)

Kimpara, Hideyuki Toyota Motor North America

Meier, Tess B. Worcester Polytechnic Institute

Gennert, Michael Worcester Polytechnic Institute

Li, Zhi WPI

11:39-11:42 ThBTS7.4

Simultaneous End-User Programming of Goals and Actions for Robotic Shelf Organization, pp. 6566-6573.

Liang, Ying Siu Université Grenoble Alpes

Pellier, Damien Laboratoire d'Informatique De

Grenoble - CNRS

Fiorino, Humbert University Grenoble Alpes - Laboratoire d'Informatique De Grenob

Pesty, Sylvie University of Grenoble-Alps

Cakmak, Maya University of Washington

11:42-11:45 ThBTS7.5

Incremental Skill Learning of Stable Dynamical Systems, pp. 6574-6581.

Saveriano, Matteo German Aerospace Center (DLR)

Lee, Dongheui Technical University of Munich

11:45-11:48 ThBTS7.6

Deeply Informed Neural Sampling for Robot Motion Planning, pp. 6582-6588.

Qureshi, Ahmed University of California, San Diego

Yip, Michael C. University of California, San Diego

11:48-11:51 ThBTS7.7

Inverse Learning of Robot Behavior for Collaborative Planning, pp. 6589-6594.

Trivedi, Maulesh University of Georgia

Doshi, Prashant University of Georgia

11:51-11:54 ThBTS7.8

Multi-Cable Rolling Locomotion with Spherical Tensegrities Using Model Predictive Control and Deep Learning, pp. 6595-6600.

Cera, Angelo Brian UC Berkeley

Agogino, Alice University of California Berkeley

ThBTS8 Room 2.R1

Manipulation (Regular session)

Chair: Contreras-Toledo, Luis Angel University of Bristol

Co-Chair: Howard, Matthew King's College London

11:30-11:33 ThBTS8.1

Integrating Path Planning and Pivoting, pp. 6601-6608.

Cruciani, Silvia KTH Royal Institute of Technology

Smith, Claes Christian KTH Royal Institute of Technology

11:33-11:36 ThBTS8.2

Rubik's Cube Handling Using a High-Speed Multi-Fingered Hand and a High-Speed Vision System, pp. 6609-6614.

Higo, Ryosuke The University of Tokyo

Yamakawa, Yuji The University of Tokyo

Senoo, Taku University of Tokyo

Ishikawa, Masatoshi University of Tokyo

11:36-11:39 ThBTS8.3

Contingent Contact-Based Motion Planning, pp. 6615-6621.

Pall, Elod Technical University of Cluj Napoca

Sieverling, Arne Technische Universität Berlin

Brock, Oliver Technische Universität Berlin

11:39-11:42 ThBTS8.4

A Lightweight Redundant Manipulator with High Stable Wireless Communication and Compliance Control, pp. 6622-6627.

Han, Liang Harbin Institute of Technology Shenzhen Graduate School

Yan, Lei Harbin Institute of Technology Shenzhen Graduate School

Xu, Wenfu	Harbin Institute of Technology
11:42-11:45	ThBTS8.5
<i>A Cable-Driven Redundant Spatial Manipulator with Improved Stiffness and Load Capacity</i> , pp. 6628-6633.	
Liu, Tianliang	Harbin Institute of Technology
Mu, Zonggao	Harbin Institute of Technology
Wang, Haomiaoy	Harbin Institute of Technology Shenzhen Graduate School
Xu, Wenfu	Harbin Institute of Technology
Li, Yangmin	The Hong Kong Polytechnic University
11:45-11:48	ThBTS8.6
<i>Nonprehensile Pushing Manipulation Strategies for a Multi-Limb Robot</i> , pp. 6634-6639.	
Zhang, Guoteng	Ritsumeikan University
Ma, Shugen	Ritsumeikan University
Li, Yibin	Shandong University
11:48-11:51	ThBTS8.7
<i>Assisted Telemanipulation: A Stack-Of-Tasks Approach to Remote Manipulator Control</i> , pp. 6640-6645.	
Stoyanov, Todor	Örebro University
Krug, Robert	KTH Royal Institute of Technology
Kiselev, Andrey	Örebro University
Sun, Da	University of Wollongong
Loutfi, Amy	Örebro University
11:51-11:54	ThBTS8.8
<i>Adaptive Admittance Control in Task-Priority Framework for Contact Force Control in Autonomous Underwater Floating Manipulation</i> , pp. 6646-6651.	
Cieslak, Patryk	Universitat De Girona
Ridao, Pere	University of Girona

ThBTS9	Room 4.L1
Perception for Grasping and Manipulation I (Regular session)	
Chair: Dogramadzi, Sanja	University of the West of England
Co-Chair: Duriez, Christian	INRIA
11:30-11:33	ThBTS9.1
<i>Optimizing Sensor Placement: A Mixture Model Framework Using Stable Poses and Sparsely Precomputed Pose Uncertainty Predictions</i> , pp. 6652-6659.	
Iversen, Thorbjørn Mosekjær	The Maersk Mc-Kinney Møller Institute, University of Southern Denmark
Kraft, Dirk	University of Southern Denmark
11:33-11:36	ThBTS9.2
<i>Robust 6D Object Pose Estimation in Cluttered Scenes Using Semantic Segmentation and Pose Regression Networks</i> , pp. 6660-6666.	
Periyasamy, Arul Selvam	University of Bonn
Schwarz, Max	University Bonn
Behnke, Sven	University of Bonn
11:36-11:39	ThBTS9.3
<i>Transferring Visuomotor Learning from Simulation to the Real World for Robotics Manipulation Tasks</i> , pp. 6667-6674.	
Nguyen, Dong Hai Phuong	Istituto Italiano Di Tecnologia
Fischer, Tobias	Imperial College London
Chang, Hyung Jin	University of Birmingham
Pattacini, Ugo	Istituto Italiano Di Tecnologia
Metta, Giorgio	Istituto Italiano Di Tecnologia (IIT)

Demiris, Yiannis	Imperial College London
11:39-11:42	ThBTS9.4
<i>Proprioception-Based Grasping for Unknown Objects Using a Series-Elastic-Actuated Gripper</i> , pp. 6675-6681.	
Chen, Tianjian	Columbia University
Ciocarlie, Matei	Columbia University
11:42-11:45	ThBTS9.5
<i>Efficient State Estimation with Constrained Rao-Blackwellized Particle Filter</i> , pp. 6682-6689.	
Li, Shuai	RPI
Lyu, Siwei	SUNY Albany
Trinkle, Jeff	Rensselaer Polytechnic Institute
11:45-11:48	ThBTS9.6
<i>A Gripper for Object Search and Grasp through Proximity Sensing</i> , pp. 6690-6697.	
Yamaguchi, Naoya	The University of Tokyo
Hasegawa, Shun	The University of Tokyo
Okada, Kei	The University of Tokyo
Inaba, Masayuki	The University of Tokyo
11:48-11:51	ThBTS9.7
<i>A Robust Data-Driven Approach for Online Learning and Manipulation of Unmodeled 3-D Heterogeneous Compliant Objects</i> , N/A.	
Alambeigi, Farshid	Johns Hopkins University
Wang, Zerui	The Chinese University of Hong Kong
Hegeman, Rachel	Johns Hopkins University
Liu, Yunhui	Chinese University of Hong Kong
Armand, Mehran	Johns Hopkins University Applied Physics Laboratory

ThBTS10	Room 4.R1
Special Session: Neurorobotics: Application From/to Brain Models To/from Robots (Regular session)	
Chair: Ijspeert, Auke	EPFL
Co-Chair: Nakamura, Yoshihiko	University of Tokyo
11:30-11:33	ThBTS10.1
<i>Exploring Vestibulo-Ocular Adaptation in a Closed-Loop Neuro-Robotic Experiment Using STDP: a Simulation Study (I)</i> , pp. 6706-6711.	
Naveros, Francisco	University of Granada
Garrido, Jesús	University of Granada
Arleo, Angelo	University Pierre & Marie Curie Paris VI - CNRS
Ros, Eduardo	University of Granada
Luque, Niceto R.	University of Granada
11:33-11:36	ThBTS10.2
<i>Interspecies Retargeting of Homologous Body Posture Based on Skeletal Morphing (I)</i> , pp. 6712-6719.	
Ayusawa, Ko	AIST
Ikegami, Yosuke	University of Tokyo
Murai, Akihiko	The National Institute of Advanced Industrial Science and Techno
Yoshiyasu, Yusuke	CNRS-AIST JRL
Yoshida, Eiichi	National Inst. of AIST
Oota, Satoshi	RIKEN
Nakamura, Yoshihiko	University of Tokyo
11:36-11:39	ThBTS10.3

Neurorobotic Approach to Study Huntington Disease Based on a Mouse Neuromusculoskeletal Model (I), pp. 6720-6727.

Oota, Satoshi	RIKEN
Okamura-Oho, Yuko	Jissen Women's University
Ayusawa, Ko	AIST
Ikegami, Yosuke	University of Tokyo
Murai, Akihiko	The National Institute of Advanced Industrial Science and Techno
Yoshida, Eiichi	National Inst. of AIST
Nakamura, Yoshihiko	University of Tokyo

ThCTS1	Room 1.L5
Aerial Systems VI (Regular session)	

Chair: Detweiler, Carrick	University of Nebraska-Lincoln
Co-Chair: Bicego, Davide	LAAS-CNRS

12:30-12:33	ThCTS1.1
-------------	----------

Temporally Smooth Privacy-Protected Airborne Videos, pp. 6728-6733.

Sarwar, Omair	Alpen-Adria-Universität Klagenfurt
Cavallaro, Andrea	Queen Mary University of London
Rinner, Bernhard	Klagenfurt University

12:33-12:36	ThCTS1.2
-------------	----------

Impedance Based Force Control for Aerial Robot Peg-In-Hole Insertion Tasks, pp. 6734-6739.

Car, Marko	Faculty of Electrical Engineering and Computing
Ivanovic, Antun	University of Zagreb, Faculty of Electrical Engineering and Comp
Orsag, Matko	University of Zagreb
Bogdan, Stjepan	University of Zagreb

12:36-12:39	ThCTS1.3
-------------	----------

Flatness-Based Model Predictive Control for Quadrotor Trajectory Tracking, pp. 6740-6745.

Greeff, Melissa	University of Toronto
Schoellig, Angela P.	University of Toronto

12:39-12:42	ThCTS1.4
-------------	----------

Lightweight and Compliant Long Reach Aerial Manipulator for Inspection Operations, pp. 6746-6752.

Suarez, Alejandro	University of Seville
Sanchez-Cuevas, Pedro J	University of Seville
Manuel J, Fernandez	University of Seville
Pérez García, Manuel	University of Seville
Heredia, Guillermo	University of Seville
Ollero, Anibal	University of Seville

12:42-12:45	ThCTS1.5
-------------	----------

Model Predictive Trajectory Tracking and Collision Avoidance for Reliable Outdoor Deployment of Unmanned Aerial Vehicles, pp. 6753-6760.

Baca, Tomas	Czech Technical Univerzity in Prague
Hert, Daniel	Czech Technical University in Prague
Loianno, Giuseppe	New York University
Kumar, Vijay	University of Pennsylvania
Saska, Martin	Czech Technical University in Prague

12:45-12:48	ThCTS1.6
-------------	----------

MGRAPH: A Multi-Graph Homography Method to Generate Incremental Mosaics in Real Time from UAV Swarms, N/A

Ruiz, Juan Jesus	University Pablo De Olavide
Caballero, Fernando	Universidad Pablo De Olavide
Merino, Luis	Universidad Pablo De Olavide

12:48-12:51	ThCTS1.7
-------------	----------

Distributed Pressure Sensing for Enabling Self-Aware Autonomous Aerial Vehicles, pp. 6769-6775.

Cellucci, Daniel	Cornell University
Cramer, Nicholas	Stinger Ghaffarian Technologies, Inc
Swei, Sean	NASA Ames Research Center

12:51-12:54	ThCTS1.8
-------------	----------

Light-Weight Object Detection and Decision Making Via Approximate Computing in Resource-Constrained Mobile Robots, pp. 6776-6781.

Pandey, Parul	Rutgers University
He, Qifan	Boston University
Pompili, Dario	Rutgers University
Tron, Roberto	Boston University

ThCTS2	Room 2.L5 KUKA
Sensorial Perception VI (Regular session)	

Chair: Meng, Max Q.-H.	The Chinese University of Hong Kong
------------------------	-------------------------------------

Co-Chair: Zanchettin, Andrea	Politecnico Di Milano
------------------------------	-----------------------

12:30-12:33	ThCTS2.1
-------------	----------

SOS: Stereo Matching in $O(1)$ with Slanted Support Windows, pp. 6782-6789.

Tankovich, Vladimir	Google
Schoenberg, Michael	Google
Fanello, Sean Ryan	Google
Kowdle, Adarsh	Google
Rhemann, Christoph	Microsoft
Schmidt, Mirko	Google
Dzitsiuk, Max	Google
Valentin, Julien	Perceptive IO
Izadi, Shahram	Microsoft

12:33-12:36	ThCTS2.2
-------------	----------

The RobotriX: An Extremely Photorealistic and Very-Large-Scale Indoor Dataset of Sequences with Robot Trajectories and Interactions, pp. 6790-6797.

Garcia-Garcia, Alberto	3D Perception Lab, University of Alicante
Martinez-Gonzalez, Pablo	3D Perception Lab, University of Alicante
Oprea, Sergiu	3D Perception Lab, University of Alicante
Castro-Vargas, John	3D Perception Lab, University of Alicante
Orts-Escalano, Sergio	University of Alicante
Garcia Rodriguez, Jose	Universidad De Alicante
Jover Álvarez, Álvaro	University of Alicante

12:36-12:39	ThCTS2.3
-------------	----------

Real-Time Object Pose Estimation with Pose Interpreter Networks, pp. 6798-6805.

Wu, Jimmy	Massachusetts Institute of Technology
Zhou, Bolei	MIT
Russell, Rebecca	Draper
Kee, Vincent	Massachusetts Institute of Technology

Wagner, Syler	Dexai Robotics
Hebert, Mitchell	University of Massachusetts Amherst
Torralba, Antonio	MIT
Johnson, David M.S.	Draper
12:39-12:42	ThCTS2.4
<i>Coping with Context Change in Open-Ended Object Recognition without Explicit Context Information</i> , pp. 6806-6812.	
Mohades Kasaei, Seyed Hamidreza	Universidade De Aveiro
Seabra Lopes, Luís	Universidade De Aveiro
Tomé, Ana Maria	Universidade De Aveiro
12:42-12:45	ThCTS2.5
<i>Fast Cylinder and Plane Extraction from Depth Cameras for Visual Odometry</i> , pp. 6813-6820.	
Proença, Pedro F.	University of Surrey
Gao, Yang	University of Surrey
12:45-12:48	ThCTS2.6
<i>Attention-Aware Cross-Modal Cross-Level Fusion Network for RGB-D Salient Object Detection</i> , pp. 6821-6826.	
Chen, Hao	City University of Hong Kong
Li, You-Fu	City University of Hong Kong
Su, Dan	City University of Hong Kong
12:48-12:51	ThCTS2.7
<i>Exploiting Points and Lines in Regression Forests for RGB-D Camera Relocalization</i> , pp. 6827-6834.	
Meng, Lili	University of British Columbia
Tung, Frederick	University of British Columbia
Little, James J.	UBC
Valentin, Julien	Perceptive IO
de Silva, Clarence	The University of British Columbia
12:51-12:54	ThCTS2.8
<i>Incremental Object Database: Building 3D Models from Multiple Partial Observations</i> , pp. 6835-6842.	
Furrer, Fadri	ETH Zurich
Novkovic, Tonci	Autonomous Systems Lab, ETH Zurich
Fehr, Marius	ETH Zürich
Gawel, Abel Roman	Autonomous Systems Lab, ETH Zurich
Grinvald, Margarita	ETH Zurich
Sattler, Torsten	ETH Zurich
Sieglwart, Roland	ETH Zurich
Nieto, Juan	ETH Zürich
ThCTS3	Room 1.L2
Vision-Based Navigation III (Regular session)	
Chair: Dayoub, Feras	Queensland University of Technology
Co-Chair: Huang, Guoquan	University of Delaware
12:30-12:33	ThCTS3.1
<i>Hybrid Bayesian Eigenobjects: Combining Linear Subspace and Deep Network Methods for 3D Robot Vision</i> , pp. 6843-6850.	
Burchfiel, Benjamin	Duke University
Konidakis, George	Brown University
12:33-12:36	ThCTS3.2
<i>Submap-Based Pose-Graph Visual SLAM: A Robust Visual Exploration and Localization System</i> , pp. 6851-6856.	
Chen, Weinan	Guangdong University of Technology

Zhu, Lei	Guangdong University of Technology
Guan, Yisheng	Guangdong University of Technology
Kube, Ronald	University of Alberta
Zhang, Hong	University of Alberta
12:36-12:39	ThCTS3.3
<i>Active Object Perceiver: Recognition-Guided Policy Learning for Object Searching on Mobile Robots</i> , pp. 6857-6863.	
Ye, Xin	Arizona State University
Lin, Zhe	Adobe Systems, Inc
Li, Haoxiang	Aibee
Zheng, Shibin	Arizona State University
Yang, Yezhou	Arizona State University
12:39-12:42	ThCTS3.4
<i>Learning Monocular Visual Odometry with Dense 3D Mapping from Dense 3D Flow</i> , pp. 6864-6871.	
Zhao, Cheng	University of Birmingham
Sun, Li	University of Birmingham
Purkait, Pulak	Toshiba Research Europe Ltd
Duckett, Tom	University of Lincoln
Stolkin, Rustam	University of Birmingham
12:42-12:45	ThCTS3.5
<i>Key-Frame Strategy During Fast Image-Scale Changes and Zero Motion in VIO without Persistent Features</i> , pp. 6872-6879.	
Allak, Eren	Alpen-Adria-Universität Klagenfurt
Hardt-Stremayr, Alexander	Alpen-Adria-Universität Klagenfurt
Weiss, Stephan	Alpen-Adria-Universität Klagenfurt
12:45-12:48	ThCTS3.6
<i>Unit Quaternion-Based Parameterization for Point Features in Visual Navigation</i> , pp. 6880-6886.	
Maley, James	U.S. Army Research Lab
Huang, Guoquan	University of Delaware
12:48-12:51	ThCTS3.7
<i>Edge-Based Robust RGB-D Visual Odometry Using 2-D Edge Divergence Minimization</i> , pp. 6887-6894.	
Kim, Changhyeon	Seoul National University
Kim, Pyojin	Seoul National University
Lee, Sangil	Seoul National Univ
Kim, H. Jin	Seoul National University
12:51-12:54	ThCTS3.8
<i>Event-Based Moving Object Detection and Tracking</i> , pp. 6895-6902.	
Mitrokhin, Anton	University of Maryland, College Park
Fermuller, Cornelia	University of Maryland
Parameshwara, Chethan	University of Maryland, College Park
Aloimonos, Yiannis	University of Maryland

ThCTS4	Room 2.L2
Control III (Regular session)	
Chair: Surdilovic, Dragoljub	Fraunhofer IPK
Co-Chair: Huang, Yanlong	Istituto Italiano Di Tecnologia
12:30-12:33	ThCTS4.1
<i>A Family of Iterative Gauss-Newton Shooting Methods for Nonlinear Optimal Control</i> , pp. 6903-6910.	
Gifftaler, Markus	Swiss Federal Institute of

	Technology (ETH) Zurich, Switzerland
Neunert, Michael	Google
Stäubli, Markus	ETH Zürich
Buchli, Jonas	
Diehl, Moritz	Univ. of Heidelberg
12:33-12:36	ThCTS4.2
<i>Controller Synthesis for Discrete-Time Polynomial Systems Via Occupation Measures</i> , pp. 6911-6918.	
Han, Weiqiao	Massachusetts Institute of Technology
Tedrake, Russ	Massachusetts Institute of Technology
12:36-12:39	ThCTS4.3
<i>Minimax Iterative Dynamic Game: Application to Nonlinear Robot Control Tasks</i> , pp. 6919-6925.	
Ogunmolu, Olalekan	University of Texas at Dallas
Gans, Nicholas (Nick)	University Texas at Dallas
Summers, Tyler	University of Texas at Dallas
12:39-12:42	ThCTS4.4
<i>Weighted Hybrid Admittance-Impedance Control with Human Intention Based Stiffness Estimation for Human–Robot Interaction</i> , pp. 6926-6931.	
Kim, Hyomin	KwangWoon Univ
Kwon, Jaesung	Kwangwoon University
Oh, Yonghwan	Korea Institute of Science & Technology (KIST)
You, Bum Jae	KIST
Yang, Woosung	Kwangwoon University
12:42-12:45	ThCTS4.5
<i>Multimodal Environment Dynamics for Interactive Robots: Towards Fault Detection and Task Monitoring</i> , pp. 6932-6937.	
Haninger, Kevin	UC Berkeley
Surdilovic, Dragoljub	Fraunhofer IPK
12:45-12:48	ThCTS4.6
<i>Estimating an Articulated Tool's Kinematics Via Visuo-Tactile Based Robotic Interactive Manipulation</i> , pp. 6938-6944.	
Li, Qiang	Bielefeld University
Ückermann, Andre	Bielefeld University
Haschke, Robert	Bielefeld University
Ritter, Helge Joachim	Bielefeld University
12:48-12:51	ThCTS4.7
<i>Algorithmization of Constrained Motion for Car-Like Robots Using the VFO Control Strategy with Parallelized Planning of Admissible Funnels</i> , pp. 6945-6951.	
Gawron, Tomasz	Poznan University of Technology, Institute of Automation and Rob
Michalek, Maciej, Marcin	Poznan University of Technology (PUT)
12:51-12:54	ThCTS4.8
<i>ASPiC: An Acting System Based on Skill Petri Net Composition</i> , pp. 6952-6958.	
Lesire, Charles	ONERA
Pommereau, Franck	IBISC, University of Évry / Paris- Saclay
ThCTS5	Room 2.R3
Soft Robotics III (Regular session)	
Chair: Monje, Concepción A.	University Carlos III of Madrid
Co-Chair: Cacucciolo, Vito	École Polytechnique Fédérale De Lausanne

12:30-12:33	ThCTS5.1
<i>Static Kinematics for an Antagonistically Actuated Robot Based on a Beam-Mechanics-Based Model</i> , pp. 6959-6964.	
Stilli, Agostino	University College London
Kolokotronis, Efsthios	University College London
Fras, Jan	Queen Mary University of London
Ataka, Ahmad	King's College London
Althoefer, Kaspar	Queen Mary University of London
Wurde mann, Helge Arne	University College London
12:33-12:36	ThCTS5.2
<i>A Novel Soft Elbow Exosuit to Supplement Bicep Lifting Capacity</i> , pp. 6965-6971.	
Thalman, Carly	Arizona State University
Lam, Quoc	Arizona State University
Pham, Huy Nguyen	Arizona State University
Sridar, Saivimal	Arizona State University
Polygerinos, Panagiotis	Arizona State University
12:36-12:39	ThCTS5.3
<i>Robotic Handling of Compliant Food Objects by Robust Learning from Demonstration</i> , pp. 6972-6979.	
Misimi, Ekrem	SINTEF Ocean
Olofsson, Alexander	SINTEF Fisheries and Aquaculture
Eilertsen, Aleksander	SINTEF Ocean
Øye, Elling Ruud	SINTEF Fisheries and Aquaculture
Mathiassen, John Reidar	SINTEF Ocean AS
12:39-12:42	ThCTS5.4
<i>Closed-Loop Temperature Control of Nylon Artificial Muscles</i> , pp. 6980-6985.	
Haines, Carter	The University of Texas at Dallas
Niemeyer, Günter	Disney Research
12:42-12:45	ThCTS5.5
<i>Acoustic Sensing for Soft Pneumatic Actuators</i> , pp. 6986-6991.	
Zöller, Gabriel Donald	TU Berlin
Wall, Vincent	TU Berlin
Brock, Oliver	Technische Universität Berlin
12:45-12:48	ThCTS5.6
<i>Flexible Fabric Actuator Realizing 3D Movements Like Human Body Surface for Wearable Devices</i> , pp. 6992-6997.	
Funabara, Yuki	Nagoya University
12:48-12:51	ThCTS5.7
<i>Soft Biomimetic Prosthetic Hand: Design, Manufacturing and Preliminary Examination</i> , pp. 6998-7003.	
Fras, Jan	Queen Mary University of London
Althoefer, Kaspar	Queen Mary University of London
12:51-12:54	ThCTS5.8
<i>A Novel All-In-One Manufacturing Process for a Soft Sensor System and Its Application to a Soft Sensing Glove</i> , pp. 7004-7009.	
Kim, Suin	Ulsan National Institute of Science and Technology
Jeong, Dahee	UNIST
Oh, Jinhyeok	UNIST
Park, Wookeun	UNIST
Bae, Joonbum	UNIST

ThCTS6		Room 1.L3
Motion and Path Planning I (Regular session)		
Chair: Koganti, Nishanth	Nara Institute of Science and Technology	
Co-Chair: Rocco, Paolo	Politecnico Di Milano	
12:30-12:33	ThCTS6.1	
On-Line Robot-Object Synchronization with Geometric Constraints and Limits on Velocity, Acceleration and Jerk, N/A.		
Kaserer, Dominik	Johannes Kepler University Linz (JKU)	
Gattringer, Hubert	Johannes Kepler University Linz	
Mueller, Andreas	Johannes Kepler University Linz	
12:33-12:36	ThCTS6.2	
Integrating Temporal Reasoning and Sampling-Based Motion Planning for Multi-Goal Problems with Dynamics and Time Windows, N/A.		
Edelkamp, Stefan	University of Bremen	
Lahijanian, Morteza	University of Oxford	
Magazzeni, Daniele	King's College London	
Plaku, Erion	Catholic University of America	
12:36-12:39	ThCTS6.3	
DCOP: Dubins Correlated Orienteering Problem Optimising Sensing Missions of a Non-Holonomic Vehicle under Budget Constraints, N/A.		
Tsiogkas, Nikolaos	Heriot Watt University	
Lane, David	Heriot-Watt University	
12:39-12:42	ThCTS6.4	
On the Orientation Planning with Constrained Angular Velocity and Acceleration at Endpoints, pp. 7033-7038.		
Shahbazi Aghbelagh, Mohammad	Istituto Italiano Di Tecnologia (IIT)	
Kashiri, Navvab	Istituto Italiano Di Tecnologia	
Caldwell, Darwin G.	Istituto Italiano Di Tecnologia	
Tsagarakis, Nikos	Istituto Italiano Di Tecnologia	
12:42-12:45	ThCTS6.5	
Approximate Inference-Based Motion Planning by Learning and Exploiting Low-Dimensional Latent Variable Models, N/A.		
Ha, Jung-Su	KAIST	
Chae, Hyeok-Joo	KAIST	
Choi, Han-Lim	KAIST	
12:45-12:48	ThCTS6.6	
Coverage Path Planning with Adaptive Viewpoint Sampling to Construct 3D Models of Complex Structures for the Purpose of Inspection, pp. 7047-7054.		
Almadhoun, Randa	Khalifa University	
Taha, Tarek	Khalifa University for Science, Technology and Research	
Gan, Dongming	Khalifa University of Science AndTechnology	
Dias, Jorge	University of Coimbra	
Zweiri, Yahya	Kingston University	
Seneviratne, Lakmal	L. D. Seneviratne Is with Kings College London, UK, and Robotics	
12:48-12:51	ThCTS6.7	
Vision-Based Reactive Planning for Aggressive Target Tracking While Avoiding Collisions and Occlusions, N/A.		
Penin, Bryan	Inria	
Robuffo Giordano, Paolo	Centre National De La Recherche Scientifique (CNRS)	
Chaumette, Francois	Inria Rennes-Bretagne Atlantique	

12:51-12:54	ThCTS6.8	
<i>Solving Markov Decision Processes with Reachability Characterization from Mean First Passage Times</i> , pp. 7063-7070.		
Debnath, Shoubhik	NVIDIA	
Liu, Lantao	Indiana University	
Sukhatme, Gaurav	University of Southern California	
ThCTS7	Room 2.L3	
Bioinspired Robotics I (Regular session)		
Chair: Choi, Hyouk Ryeol	Sungkyunkwan University	
Co-Chair: Mashimo, Tomoaki	Toyohashi University of Technology	
12:30-12:33	ThCTS7.1	
<i>Hybrid Bio-Inspired Architecture for Walking Robots through Central Pattern Generators Using Open Source FPGAs</i> , pp. 7071-7076.		
Caro Linares, Julián	Universidad Politécnica De Madrid	
Barrientos, Antonio	UPM	
Mayas Márquez, Enric	Everis	
12:33-12:36	ThCTS7.2	
<i>Towards an Autonomous Robotic Dragonfly: At-Scale Lift Experiments Modeling Dragonfly Forewings</i> , pp. 7077-7082.		
Szabo, Peter Andras Kovacs	University of Toronto	
D'Eleuterio, Gabriele M.T.	University of Toronto	
12:36-12:39	ThCTS7.3	
<i>Ultrasonic and Electrostatic Self-Cleaning Microstructured Adhesives for Robotic Grippers</i> , pp. 7083-7088.		
Alizadehyazdi, Vahid	Illinois Institute of Technology	
McQueney, Elizabeth	Illinois Institute of Technology	
Tanaka, Koki	Illinois Institute of Technology	
Spenko, Matthew	Illinois Institute of Technology	
12:39-12:42	ThCTS7.4	
<i>Evolving a Sensory-Motor Interconnection for Dynamic Quadruped Robot Locomotion Behavior</i> , pp. 7089-7095.		
Saputra, Azhar Aulia	Tokyo Metropolitan University	
Chin, Wei Hong	Tokyo Metropolitan University	
Botzheim, Janos	Tokyo Metropolitan University	
Kubota, Naoyuki	Tokyo Metropolitan University	
12:42-12:45	ThCTS7.5	
<i>Learning-Based Path Tracking Control of a Flapping-Wing Micro Air Vehicle</i> , pp. 7096-7102.		
Lee, Jonggu	Seoul National University	
Ryu, Seungwan	Seoul National University	
Kim, Taewan	Seoul National University	
Kim, Wonchul	Seoul National University	
Kim, H. Jin	Seoul National University	
12:45-12:48	ThCTS7.6	
<i>Improving the Parallel Execution of Behavior Trees</i> , pp. 7103-7110.		
Colledanchise, Michele	IIT - Italian Institute of Technology	
Natale, Lorenzo	Istituto Italiano Di Tecnologia	
12:48-12:51	ThCTS7.7	
<i>Guess What I Attend: Interface-Free Object Selection Using Brain Signals</i> , pp. 7111-7116.		
Kolkhorst, Henrich	University of Freiburg	
Tangermann, Michael	University of Freiburg	
Burgard, Wolfram	University of Freiburg	
12:51-12:54	ThCTS7.8	

Mobile Continuum Robot with Unlimited Extensible Sections, pp. 7117-7122.

Kanada, Ayato	Toyohashi University of Technology
Mashimo, Tomoaki	Toyohashi University of Technology

ThCTS8	Room 2.R1
Dual Arm and Mobile Manipulation (Regular session)	

Chair: del Pobil, Angel P.	Jaume-I University
Co-Chair: Doulergi, Zoe	Aristotle University of Thessaloniki

12:30-12:33	ThCTS8.1
-------------	----------

Multi-Stage Learning of Selective Dual-Arm Grasping Based on Obtaining and Pruning Grasping Points through the Robot Experience in the Real World, pp. 7123-7130.

Kitagawa, Shingo	University of Tokyo
Wada, Kentaro	The University of Tokyo
Hasegawa, Shun	The University of Tokyo
Okada, Kei	The University of Tokyo
Inaba, Masayuki	The University of Tokyo

12:33-12:36	ThCTS8.2
-------------	----------

Bimanual Assembly of Two Parts with Relative Motion Generation and Task Related Optimization, pp. 7131-7136.

Stavridis, Sotiris	Aristotle University of Thessaloniki
Doulergi, Zoe	Aristotle University of Thessaloniki

12:36-12:39	ThCTS8.3
-------------	----------

Dual-Arm Coordinated Motion Planning and Compliance Control for Capturing Moving Objects with Large Momentum, pp. 7137-7144.

Yan, Lei	Harbin Institute of Technology Shenzhen Graduate School
Yang, Yiming	University of Edinburgh
Xu, Wenfu	Harbin Institute of Technology
Vijayakumar, Sethu	University of Edinburgh

12:39-12:42	ThCTS8.4
-------------	----------

A Model Predictive Control Approach for Vision-Based Object Grasping Via Mobile Manipulator, pp. 7145-7150.

Logothetis, Michalis	National Technical University of Athens, School of Mechanical En
Karras, George	National Technical University of Athens
Heshmati-alamdari, Shahab	NTUA
Vlantis, Panagiotis	National Technical University of Athens
Kyriakopoulos, Kostas	National Technical Univ. of Athens

12:42-12:45	ThCTS8.5
-------------	----------

A Bayesian Framework for Simultaneous Robot Localization and Target Detection and Engagement, pp. 7151-7157.

Furukawa, Tomonari	Virginia Polytechnic Institute and State University
Dissanayake, Gamini	University of Technology Sydney
Attia, Tamer	Virginia Tech
Hodges, Jonathan	Virginia Tech

12:45-12:48	ThCTS8.6
-------------	----------

Coupling Mobile Base and End-Effector Motion in Task Space, pp. 7158-7163.

Welschhold, Tim	Albert-Ludwigs-Universität Freiburg
Dornhege, Christian	University of Freiburg

Paus, Fabian	Karlsruhe Institute of Technology (KIT)
--------------	---

Asfour, Tamim	Karlsruhe Institute of Technology (KIT)
---------------	---

Burgard, Wolfram	University of Freiburg
------------------	------------------------

12:48-12:51	ThCTS8.7
-------------	----------

Motion Planning for an Underwater Mobile Manipulator by Exploiting Loose Coupling, pp. 7164-7171.

Youakim, Dina	University of Girona
Dornbush, Andrew	Carnegie Mellon University
Likhachev, Maxim	Carnegie Mellon University
Ridao, Pere	Universitat De Girona

12:51-12:54	ThCTS8.8
-------------	----------

Dynamic Model Learning and Manipulation Planning for Objects in Hospitals Using a Patient Assistant Mobile (PAM) Robot, pp. 7172-7178.

Sabbagh Novin, Roya	University of Utah
Yazdani, Amir	University of Utah
Hermans, Tucker	University of Utah
Merryweather, Andrew	University of Utah

ThCTS9	Room 4.L1
Perception for Grasping and Manipulation II (Regular session)	

Co-Chair: From, Pål Johan	Norwegian University of Life Sciences
---------------------------	---------------------------------------

12:30-12:33	ThCTS9.1
-------------	----------

Capacitive Proximity Sensor Skin for Contactless Material Detection, pp. 7179-7184.

Ding, Yitao	Chemnitz University of Technology
Zhang, Hongyin	Chemnitz University of Technology
Thomas, Ulrike	Technical University of Chemnitz

12:33-12:36	ThCTS9.2
-------------	----------

Teaching a Robot to Grasp Real Fish by Imitation Learning from a Human Supervisor in Virtual Reality, pp. 7185-7192.

Dyrstad, Jonatan Sjølund	SINTEF
Øye, Elling Ruud	SINTEF Fisheries and Aquaculture
Stahl, Annette	Norwegian University of Science and Technology (NTNU)
Mathiassen, John Reidar	SINTEF Ocean AS

12:36-12:39	ThCTS9.3
-------------	----------

Seeing behind the Scene: Using Symmetry to Reason about Objects in Cluttered Environments, pp. 7193-7200.

Ecins, Aleksandrs	University of Maryland College Park
Fermuller, Cornelia	University of Maryland
Aloimonos, Yiannis	University of Maryland

12:39-12:42	ThCTS9.4
-------------	----------

Efficient Pose Estimation from Single RGB-D Image Via Hough Forest with Auto-Context, pp. 7201-7206.

Dong, Huixu	Nanyang Technological University
Prasad, Dilip	Nanyang Technological University
Yuan, Qilong	Foshan University
Zhou, Jiadong	Nanyang Technological University
Asadi, Ehsan	Nanyang Technological University
Chen, I-Ming	Nanyang Technological University

12:42-12:45	ThCTS9.5
<i>Plenoptic Monte Carlo Object Localization for Robot Grasping under Layered Translucency</i> , pp. 7207-7214.	
Zhou, Zheming	University of Michigan
Sui, Zhiqiang	University of Michigan
Jenkins, Odest Chadwicke	University of Michigan
12:45-12:48	ThCTS9.6
<i>Pose Estimation for Objects with Rotational Symmetry</i> , pp. 7215-7222.	
Corona, Enric	University of Toronto
Kundu, Kaustav	University of Toronto
Fidler, Sanja	University of Toronto
12:48-12:51	ThCTS9.7
<i>Fully Convolutional Grasp Detection Network with Oriented Anchor Box</i> , pp. 7223-7230.	
Zhou, Xinwen	Xi'an Jiaotong University
Lan, Xuguang	Xi'an Jiaotong University
Zhang, Hanbo	Xi'an Jiaotong University
Tian, Zhiqiang	Xi'an Jiaotong University
Zhang, Yang	Xi'an Jiaotong University
Zheng, Nanning	Xi'an Jiaotong University
ThCTS10	Room 4.R1
Special Session: Research Reproducibility and Benchmarking of Intelligent Robots (Regular session)	
Chair: Matteucci, Matteo	Politecnico Di Milano
Co-Chair: Lima, Pedro U.	Instituto Superior Técnico - Institute for Systems and Robotics
12:30-12:33	ThCTS10.1
<i>A Probabilistic Approach to Benchmarking and Performance Evaluation of Robot Systems (I)</i> , pp. 7231-7236.	
Lima, Pedro U.	Instituto Superior Técnico - Institute for Systems and Robotics
12:33-12:36	ThCTS10.2
<i>Improving Repeatability of Experiments by Automatic Evaluation of SLAM Algorithms (I)</i> , pp. 7237-7243.	
Amigoni, Francesco	Politecnico Di Milano
Castelli, Valerio	Politecnico Di Milano
Luperto, Matteo	Università Degli Studi Di Milano
12:36-12:39	ThCTS10.3
<i>A Tutorial on Quantitative Trajectory Evaluation for Visual(-Inertial) Odometry (I)</i> , pp. 7244-7251.	
Zhang, Zichao	Robotics and Perception Group, University of Zurich
Scaramuzza, Davide	University of Zurich
ThDTS1	Room 1.L5
Aerial Systems VII (Regular session)	
Chair: Chli, Margarita	ETH Zurich
Co-Chair: de la Puente, Paloma	Universidad Politécnica De Madrid
15:30-15:33	ThDTS1.1
<i>Long-Duration Autonomy for Small Rotorcraft UAS Including Recharging</i> , pp. 7252-7258.	
Brommer, Christian	Alpen Adria University
Malyuta, Danylo	University of Washington
Hentzen, Daniel Robert	Nasa Jet Propulsion Laboratory
Brockers, Roland	California Institute of Technology

15:33-15:36	ThDTS1.2
<i>PaintCopter: An Autonomous UAV for Spray Painting on 3D Surfaces</i> , N/A.	
Vempati, Anurag Sai	ETH Zurich, Disney Research Zurich
Kamel, Mina	Autonomous Systems Lab, ETH Zurich
Stilinovic, Nikola	Disney Research Zurich
Zhang, Qixuan	ETH Zurich
Reusser, Dorothea	Disney Research Zurich
Sa, Inkyu	ETH Zurich
Nieto, Juan	ETH Zürich
Sieglwart, Roland	ETH Zurich
Beardsley, Paul	Disney Research Zurich
15:36-15:39	ThDTS1.3
<i>Energy-Aware Spiral Coverage Path Planning for UAV Photogrammetric Applications</i> , N/A.	
Milech Cabreira, Tauã	Federal University of Pelotas
Di Franco, Carmelo	Scuola Superiore S. Anna
Ferreira Junior, Paulo Roberto	Federal University of Pelotas
Buttazzo, Giorgio C.	Scuola Superiore Sant'Anna
15:39-15:42	ThDTS1.4
<i>Computing the Forward Reachable Set for a Multirotor under First-Order Aerodynamic Effects</i> , N/A.	
Kim, Suseong	University of Zurich
Falanga, Davide	University of Zurich
Scaramuzza, Davide	University of Zurich
15:42-15:45	ThDTS1.5
<i>GapFlyt: Active Vision Based Minimalist Structure-Less Gap Detection for Quadrotor Flight</i> , N/A.	
J Sanket, Nitin	University of Maryland, College Park
Singh, Chahat	University of Maryland, College Park
Ganguly, Kanishka	University of Maryland, College Park
Fermuller, Cornelia	University of Maryland
Aloimonos, Yiannis	University of Maryland
15:45-15:48	ThDTS1.6
<i>VI-RPE: Visual-Inertial Relative Pose Estimation for Aerial Vehicles</i> , N/A.	
Teixeira, Lucas	ETH Zurich
Maffra, Fabiola	ETH Zurich
Moos, Marco	ETH Zurich
Chli, Margarita	ETH Zurich
15:48-15:51	ThDTS1.7
<i>Fast Autonomous Flight in Warehouses for Inventory Applications</i> , N/A.	
Beul, Marius	University of Bonn
Droeschel, David	University of Bonn
Nieuwenhuisen, Matthias	University of Bonn
Quenzel, Jan	University of Bonn
Houben, Sebastian	University of Bochum
Behnke, Sven	University of Bonn
15:51-15:54	ThDTS1.8
<i>Spatio-Temporally Smooth Local Mapping and State Estimation Inside Generalized Cylinders with Micro Aerial Vehicles</i> , N/A.	
Ozaslan, Tolga	University of Pennsylvania
Loianno, Giuseppe	University of Pennsylvania
Keller, James	Univ. of Pennsylvania

Taylor, Camillo Jose University of Pennsylvania
Kumar, Vijay University of Pennsylvania

ThDTS2 Room 2.L5 KUKA
Sensorial Perception VII (Regular session)

Chair: Watanabe, Keisuke Japan Aerospace Exploration
Agency
Co-Chair: Brunete, Alberto Universidad Politecnica De
Madrid

15:30-15:33 ThDTS2.1

*Real-Time Feature Depth Estimation for Image-Based Visual
Servoing*, pp. 7314-7320.

Li, Xiangfei Huazhong University of Science
and Technology
Zhao, Huan Huazhong University of Science
and Technology
Ding, Han Huazhong University of Science
and Technology

15:33-15:36 ThDTS2.2

*Coordinated Nodding of a 2D Lidar for Dense 3D Range
Measurements*, N/A.

Harchowdhury, Anindya Indian Institute of Technology
Bombay
Kleeman, Lindsay Monash University
Vachhani, Leena Indian Institute of Technology
Bombay

15:36-15:39 ThDTS2.3

*Fast Convergence for Object Detection by Learning How to
Combine Error Functions*, pp. 7329-7335.

Schnieders, Benjamin University of Liverpool
Tuyls, Karl University of Liverpool

15:39-15:42 ThDTS2.4

*Towards Real-Time Physical Human-Robot Interaction Using
Skeleton Information and Hand Gestures*, pp. 7336-7341.

Mazhar, Osama LIRMM - Universite De
Montpellier CNRS
Ramdani, Sofiane University Montpellier - UFR
STAPS
Navarro, Benjamin University of Orléans
Passama, Robin LIRMM (CNRS, Université
Montpellier 2)
Cherubini, Andrea LIRMM - Universite De
Montpellier CNRS

15:42-15:45 ThDTS2.5

*LiDAR and Camera Calibration Using Motions Estimated by
Sensor Fusion Odometry*, pp. 7342-7349.

Ishikawa, Ryoichi The University of Tokyo
Oishi, Takeshi The University of Tokyo
Ikeuchi, Katsushi Microsoft

15:45-15:48 ThDTS2.6

*Edge and Corner Detection for Unorganized 3D Point Clouds with
Application to Robotic Welding*, pp. 7350-7355.

Ahmed, Syeda Mariam National University of Singapore
Tan, Yan Zhi National University of Singapore
Chew, Chee Meng National University of Singapore
Mamun, Abdullah Al National University of Singapore
Wong, Fook Seng Keppel Offshore & Marine
Technology Center

15:48-15:51 ThDTS2.7

*Automatic Fall Risk Assessment for Challenged Users Obtained
from a Rollator Equipped with Force Sensors and a RGB-D
Camera*, pp. 7356-7361.

Ballesteros, Joaquin University of Malaga
Peula Palacios, Jose Manuel University of Málaga
Antonio B., Martinez Technical University of Cataluña
Urdiales, Cristina Universidad De Málaga

15:51-15:54 ThDTS2.8

*ARIADNE with Ambiguity Resolution: Visual Marker Based Rapid
Initialization of PPP-AR*, pp. 7362-7368.

Watanabe, Keisuke Japan Aerospace Exploration
Agency

ThDTS3 Room 1.L2
Navigation Planning (Regular session)

Chair: Myung, Hyun KAIST (Korea Adv. Inst. Sci. &
Tech.)
Co-Chair: Kim, Ayoung Korea Advanced Institute of
Science Technology

15:30-15:33 ThDTS3.1

*Fast Trajectory Planning for Automated Vehicles Using Gradient-
Based Nonlinear Model Predictive Control*, pp. 7369-7374.

Gritschneider, Franz Ulm University
Graichen, Knut Ulm University
Dietmayer, Klaus University of Ulm

15:33-15:36 ThDTS3.2

*Humanoid Navigation Planning in Large Unstructured
Environments Using Traversability-Based Segmentation*, pp.
7375-7382.

Lin, Yu-Chi University of Michigan
Berenson, Dmitry University of Michigan

15:36-15:39 ThDTS3.3

Guaranteed Coverage with a Blind Unreliable Robot, pp. 7383-
7390.

Lewis, Jeremy University of South Carolina
Feshbach, Daniel A. Haverford College
O'Kane, Jason University of South Carolina

15:39-15:42 ThDTS3.4

*Single Leg Dynamic Motion Planning with Mixed-Integer Convex
Optimization*, pp. 7391-7396.

Ding, Yanran University of Illinois at Urbana-
Champaign
Li, Chuanyang University of Illinois, Urbana-
Champaign
Park, Hae-Won University of Illinois at Urbana
Champaign

15:42-15:45 ThDTS3.5

*Multi-Layer Coverage Path Planner for Autonomous Structural
Inspection of High-Rise Structures*, pp. 7397-7402.

Jung, Sungwook KAIST(Korea Advanced Institute
of Science and Technology)
Song, Seungwon KAIST
Youn, Pil Lip KAIST
Myung, Hyun KAIST (Korea Adv. Inst. Sci. &
Tech.)

15:45-15:48 ThDTS3.6

*Down the CLiFF: Flow-Aware Trajectory Planning under Motion
Pattern Uncertainty*, pp. 7403-7409.

Swaminathan, Chittaranjan Örebro University
Srinivas
Kucner, Tomasz Piotr Örebro Universitet
Magnusson, Martin Örebro University
Palmieri, Luigi Robert Bosch GmbH
Lilienthal, Achim J. Örebro University

15:48-15:51	ThDTS3.7
<i>Efficient and Asymptotically Optimal Kinodynamic Motion Planning Via Dominance-Informed Regions</i> , pp. 7410-7415.	
Littlefield, Zakary	Rutgers University
Bekris, Kostas E.	Rutgers, the State University of New Jersey

15:51-15:54	ThDTS3.8
<i>PORCA: Modeling and Planning for Autonomous Driving among Many Pedestrians</i> , N/A.	
Luo, Yuanfu	School of Computing, National University of Singapore
Cai, Panpan	Nanyang Technological University
Bera, Aniket	University of North Carolina at Chapel Hill
Hsu, David	National University of Singapore
Lee, Wee Sun	National University of Singapore
Manocha, Dinesh	University of North Carolina at Chapel Hill

ThDTS4	Room 2.L2
Control IV (Regular session)	
Chair: Martinet, Philippe	INRIA
Co-Chair: Hernández García, Daniel	University of Plymouth

15:30-15:33	ThDTS4.1
<i>High-Speed and Intelligent Pre-Grasp Motion by a Robotic Hand Equipped with Hierarchical Proximity Sensors</i> , pp. 7424-7431.	
Hirai, Yuji	Kanazawa University
Suzuki, Yosuke	Kanazawa University
Tsuji, Tokuo	Kanazawa University
Watanabe, Tetsuyou	Kanazawa University

15:33-15:36	ThDTS4.2
<i>Singularity Resolution in Equality and Inequality Constrained Hierarchical Task-Space Control by Adaptive Non-Linear Least-Squares</i> , N/A.	
Pfeiffer, Kai	CNRS-AIST JRL (Joint Robotic Laboratory) UMI3218/RL, Tsukuba, Ja
Escande, Adrien	Cnrs-Aist Jrl Umi3218/rl
Kheddar, Abderrahmane	CNRS-AIST JRL (Joint Robotics Laboratory), UMI3218/CRT

15:36-15:39	ThDTS4.3
<i>Dynamic Locomotion in the MIT Cheetah 3 through Convex Model-Predictive Control</i> , pp. 7440-7447.	
Di Carlo, Jared	Massachusetts Institute of Technology
Wensing, Patrick M.	University of Notre Dame
Katz, Benjamin	Massachusetts Institute of Technology
Bledt, Gerardo	Massachusetts Institute of Technology (MIT)
Kim, Sangbae	Massachusetts Institute of Technology

15:39-15:42	ThDTS4.4
<i>Towards an Adaptive-Compliance Aerial Manipulator for Contact-Based Interaction</i> , pp. 7448-7453.	
Hamaza, Salua	Bristol Robotics Laboratory; University of Bristol; University O
Georgilas, Ioannis	University of Bath
Richardson, Thomas	University of Bristol

15:42-15:45	ThDTS4.5
<i>Optimal Input Waveform for an Indirectly Controlled Limit Cycle</i>	

<i>Walker</i> , pp. 7454-7459.	
Li, Longchuan	Japan Advanced Institute of Science and Technology
Tokuda, Isao	Ritsumeikan University
Asano, Fumihiko	Japan Advanced Institute of Science and Technology

15:45-15:48	ThDTS4.6
<i>A Comparative Study on Sigma Point Kalman Filters for Trajectory Estimation of Hybrid Aerial-Aquatic Vehicles</i> , pp. 7460-7465.	
da Rosa, Rômulo Thiago Silva	Federal University of Rio Grande
Evald, Paulo Jefferson Dias de Oliveira	Federal University of Rio Grande
Drews-Jr, Paulo	Federal University of Rio Grande (FURG)
Alves Neto, Armando	Universidade Federal De Minas Gerais
Horn, Alexandre de Campos	Federal University of Rio Grande
Azzolin, Rodrigo Zelig	Federal University of Rio Grande
Botelho, Silvia	University Federal of Rio Grande (FURG)

15:48-15:51	ThDTS4.7
<i>Constrained Motion Cueing for Driving Simulators Using a Real-Time Nonlinear MPC Scheme</i> , pp. 7466-7471.	
Lamprecht, Alexander	Ulm University
Haecker, Jens	Daimler AG
Graichen, Knut	Ulm University

15:51-15:54	ThDTS4.8
<i>Robust Humanoid Control Using a QP Solver with Integral Gains</i> , pp. 7472-7479.	
Cisneros Limon, Rafael	National Institute of Advanced Industrial Science and Technology
Benallegue, Mehdi	AIST Japan
Benallegue, Abdelaziz	University of Versailles St Quentin En Yvelines
Morisawa, Mitsuharu	National Inst. of AIST
Audren, Hervé	CNRS-AIST-JRL
Gergondet, Pierre	CNRS
Escande, Adrien	Cnrs-Aist Jrl Umi3218/rl
Kheddar, Abderrahmane	CNRS-AIST JRL (Joint Robotics Laboratory), UMI3218/CRT
Kanehiro, Fumio	National Inst. of AIST

ThDTS5	Room 2.R3
Soft Robotics IV (Regular session)	
Chair: Khatib, Oussama	Stanford University
Co-Chair: Park, Yong-Lae	Seoul National University

15:30-15:33	ThDTS5.1
<i>Contact Localization and Force Estimation of Soft Tactile Sensors Using Artificial Intelligence</i> , pp. 7480-7485.	
Kim, DongWook	Seoul National University
Park, Yong-Lae	Seoul National University

15:33-15:36	ThDTS5.2
<i>A Biomimetic Soft Robot for Inspecting Pipeline with Significant Diameter Variation</i> , pp. 7486-7491.	
Zhang, Xue	CUHK
Pan, Tianle Flippy	The Chinese University of Hong Kong
Heung, Ho Lam	The Chinese University of Hong Kong
Chiu, WAI, YAN Philip	Chinese University of Hong Kong

Li, Zheng	The Chinese University of Hong Kong
15:36-15:39	ThDTS5.3
<i>Continuum Manipulator with Redundant Backbones and Constrained Bending Curvature for Continuously Variable Stiffness</i> , pp. 7492-7499.	
Zhao, Bin	Shanghai Jiao Tong University
Zhang, Weihao	Shanghai Jiao Tong University
Zhang, Zhaoyu	Shanghai Jiao Tong University
Zhu, Xiangyang	Shanghai Jiao Tong University
Xu, Kai	Shanghai Jiao Tong University
15:39-15:42	ThDTS5.4
<i>A Multi-Segment Electro-Active Polymer Based Milli-Continuum Soft Robots</i> , pp. 7500-7506.	
Benouhiba, Amine	FEMTO-ST Institute, Université Bourgogne Franche-Comté, CNRS
Rabenorosa, Kanty	Univ. Bourgogne Franche-Comté, CNRS
Rougeot, Patrick	Univ. of Bourgogne Franche-Comté, CNRS
Ouisse, Morvan	FEMTO-ST Institute
Andreff, Nicolas	Université De Franche Comté
15:42-15:45	ThDTS5.5
<i>A Compact Wheeled Robot That Can Jump While Rolling</i> , pp. 7507-7512.	
Misu, Kenji	University of Tsukuba
Yoshii, Akira	University of Tsukuba
Mochiyama, Hiromi	University of Tsukuba
15:45-15:48	ThDTS5.6
<i>Soft LEGO: Bottom-Up Design Platform for Soft Robotics</i> , pp. 7513-7520.	
Lee, Jun-Young	Seoul National University
Eom, Jaemin	Seoul National University Biorobotics Lab
Choi, Woo-Young	Seoul National University
Cho, Kyu-Jin	Seoul National University, Biorobotics Laboratory
15:48-15:51	ThDTS5.7
<i>Soft Snake Robots: Investigating the Effects of Gait Parameters on Locomotion in Complex Terrains</i> , pp. 7521-7526.	
Branyan, Callie	Oregon State University
Menguc, Yigit	Oregon State University
ThDTS6 Room 1.L3	
Motion and Path Planning II (Regular session)	
Chair: Kurniawati, Hanna	University of Queensland
Co-Chair: Gambao, Ernesto	Universidad Politecnica De Madrid
15:30-15:33	ThDTS6.1
<i>Inverse Error Function Trajectories for Image Reconstruction</i> , pp. 7527-7532.	
Katoch, Rohan	Georgia Institute of Technology
Fusaro, Beatriz	Georgia Institute of Technology
Ueda, Jun	Georgia Institute of Technology
15:33-15:36	ThDTS6.2
<i>Faster Collision Checks for Car-Like Robot Motion Planning</i> , pp. 7533-7538.	
Heinrich, Benjamin C.	University of the Bundeswehr Munich
Fassbender, Dennis	University of the Bundeswehr Munich

Wuensche, Hans J	UniBw Munich
15:36-15:39	ThDTS6.3
<i>Platform-Independent Benchmarks for Task and Motion Planning</i> , N/A.	
Lagriffoul, Fabien	Örebro University
Dantam, Neil	Colorado School of Mines
Srivastava, Siddharth	University of California Berkeley
Akbari, Aliakbar	Universitat Politcnica De Catalunya (UPC)
Garrett, Caelan	Massachusetts Institute of Technology
15:39-15:42	ThDTS6.4
<i>C-MPDM: Continuously-Parameterized Risk-Aware MPDM by Quickly Discovering Contextual Policies</i> , pp. 7547-7554.	
Mehta, Dhanvin	University of Michigan
Ferrer, Gonzalo	Skolkovo Institute of Science and Technology
Olson, Edwin	University of Michigan
15:42-15:45	ThDTS6.5
<i>Skating with a Force Controlled Quadrupedal Robot</i> , pp. 7555-7561.	
Bjelonic, Marko	ETH Zurich
Bellicoso, C. Dario	ETH Zurich
Hutter, Marco	ETH Zurich
Tiryaki, Mehmet Efe	ETH Zurich
15:45-15:48	ThDTS6.6
<i>A Comparative Analysis of Contact Models in Trajectory Optimization for Manipulation</i> , pp. 7562-7567.	
Onol, Aykut Ozgun	Northeastern University
Long, Philip	Northeastern University
Padir, Taskin	Northeastern University
15:48-15:51	ThDTS6.7
<i>Combining Method of Alternating Projections and Augmented Lagrangian for Task Constrained Trajectory Optimization</i> , pp. 7568-7575.	
Singh, Arun Kumar	Tampere University of Technology, Finland
Ghabcheloo, Reza	Tampere University of Technology
Mueller, Andreas	Johannes Kepler University
Pandya, Harit	IIIT Hyderabad
15:51-15:54	ThDTS6.8
<i>A Software Framework for Planning under Partial Observability</i> , pp. 7576-7582.	
Hoerger, Marcus	University of Queensland
Kurniawati, Hanna	University of Queensland
Elfes, Alberto	CSIRO
ThDTS7 Room 2.L3	
Bioinspired Robotics II (Regular session)	
Co-Chair: Yalikun, Yaxiaer	Graduate School of Engineering, Osaka University
15:30-15:33	ThDTS7.1
<i>Adaptive Path Following for Snake Robot on Ground with Unknown and Varied Friction Coefficients</i> , pp. 7583-7588.	
Wang, Gang	University of Nevada
Yang, Weixin	University of Nevada, Reno
Shen, Yantao	University of Nevada, Reno
Shao, Haiyan	University of Jinan
15:33-15:36	ThDTS7.2
<i>Analytical Model of Thermal Soaring: Towards Energy Efficient</i>	

Path Planning for Flying Robots, pp. 7589-7594.

Khaghani, Javad	University of Tehran
Nekoui, Mahdiar	University of Tehran
Nasiri, Rezvan	University of Tehran
Nili Ahmadabadi, Majid	University of Tehran

15:36-15:39 ThDTS7.3

Atmospheric-Operable 3D Printed Walking Bio-Robot Powered by Muscle-Tissue of Earthworm, pp. 7595-7600.

Yalikun, Yaxiaer	Graduate School of Engineering, Osaka University
Kamamichi, Norihiro	Tokyo Denki University
Noguchi, Yuji	Tokyo Denki University
Tanaka, Yo	Riken

15:39-15:42 ThDTS7.4

PIRat: An Autonomous Framework for Studying Social Behaviour in Rats and Robots, pp. 7601-7608.

Heath, Scott	University of Queensland
Ramirez-Brinez, Carlos Andres	The University of Queensland
Arnold, Joshua	The University of Queensland
Olsson, Ola	University of Queensland
Taufatofua, Jonathon	The University of Queensland
Pounds, Pauline	The University of Queensland
Wiles, Janet	University of Queensland
Leonardis, Eric	University of California, San Diego - Cognitive Science Departme
Gygi, Emmanuel	University of California, San Diego - Cognitive Science Departme
Leija, Estelita	University of California, San Diego - Cognitive Science Departme
Quinn, Laleh	University of California, San Diego - Cognitive Science Departme
Chiba, Andrea	University of California, San Diego

15:42-15:45 ThDTS7.5

Tarzan: Design, Prototyping, and Testing of a Wire-Borne Brachiating Robot, pp. 7609-7614.

Davies, Evan	Georgia Institute of Technology
Garlow, Adam	Georgia Institute of Technology
Farzan, Siavash	Georgia Institute of Technology
Rogers, Jonathan	Georgia Institute of Technology
Hu, Ai-Ping	Georgia Tech Research Institute

15:45-15:48 ThDTS7.6

Longitudinal Rollover Strategy As Effective Intervention to Reduce Wrist Injuries During Forward Fall, N/A.

Abdolshah, Saeed	Nagoya University
Rajaei, Nader	Graduate School of Engineering, Nagoya University
Akiyama, Yasuhiro	Nagoya-University
Yamada, Yoji	Nagoya University
Okamoto, Shogo	Nagoya University

15:48-15:51 ThDTS7.7

Online Foot-Strike Detection Using Inertial Measurements for Multi-Legged Walking Robots, pp. 7622-7627.

Cizek, Petr	Czech Technical University in Prague, Faculty of Electrical Engi
Kubík, Jiří	Czech Technical University in Prague, FEE

Faigl, Jan

Czech Technical University in
Prague

15:51-15:54 ThDTS7.8

TacWhiskers: Biomimetic Optical Tactile Whiskered Robots, pp. 7628-7634.

Lepora, Nathan	University of Bristol
Pearson, Martin	Bristol Robotics Laboratory
Cramphorn, Luke	Bristol University

ThDTS8 Room 2.R1

Service Robots I (Regular session)

Chair: Kosuge, Kazuhiro	Tohoku University
Co-Chair: Bellotto, Nicola	University of Lincoln

15:30-15:33 ThDTS8.1

Multisensor Online Transfer Learning for 3D LiDAR-Based Human Detection with a Mobile Robot, pp. 7635-7640.

Yan, Zhi	University of Technology of Belfort-Montbéliard (UTBM)
Sun, Li	University of Birmingham
Duckett, Tom	University of Lincoln
Bellotto, Nicola	University of Lincoln

15:33-15:36 ThDTS8.2

An Everyday Robotic System That Maintains Local Rules Using Semantic Map Based on Long-Term Episodic Memory, pp. 7641-7647.

Furuta, Yuki	The University of Tokyo
Okada, Kei	The University of Tokyo
Inaba, Masayuki	The University of Tokyo
Kakiuchi, Yohei	The University of Tokyo

15:36-15:39 ThDTS8.3

Dynamic Dumbbell - Novel Muscle Training Robot with Programmable Exercise Load, pp. 7648-7653.

Lee, Chan	DGIST (Daegu Gyeongbuk Institute of Science and Technology)
Oh, Sehoon	DGIST (Daegu Gyeongbuk Institute of Science and Technology)

15:39-15:42 ThDTS8.4

Autonomous Navigation Using Multimodal Potential Field to Initiate Interaction with Multiple People, pp. 7654-7659.

Kawasaki, Yosuke	KEIO University
Yorozu, Ayanori	Keio University
Takahashi, Masaki	Keio University

15:42-15:45 ThDTS8.5

Estimating Door Shape and Manipulation Model for Daily Assistive Robots Based on the Integration of Visual and Touch Information, pp. 7660-7666.

Nagahama, Kotaro	Shinshu University
Takeshita, Keisuke	Toyota Motor Corporation
Yaguchi, Hiroaki	The University of Tokyo
Yamazaki, Kimitoshi	Shinshu University
Yamamoto, Takashi	Toyota Motor Corporation
Inaba, Masayuki	The University of Tokyo

15:45-15:48 ThDTS8.6

Designing for Robust Movement in a Child-Friendly Robot, pp. 7667-7674.

Taufatofua, Jonathon	The University of Queensland
Heath, Scott	University of Queensland
Ramirez-Brinez, Carlos Andres	The University of Queensland

Hensby, Kristyn	The University of Queensland
Durantin, Gautier	The University of Queensland
Kong, Wilson	The University of Queensland
Wiles, Janet	University of Queensland
Pounds, Pauline	The University of Queensland

15:48-15:51 ThDTS8.7

Development of the Research Platform of a Domestic Mobile Manipulator Utilized for International Competition and Field Test, pp. 7675-7682.

Yamamoto, Takashi	Toyota Motor Corporation
Terada, Koji	TOYOTA Motor Corporation
Ochiai, Akiyoshi	Toyota Research Institute
Saito, Fuminori	Toyota Motor Corporation
Asahara, Yoshiaki	Toyota Motor Corporation
Murase, Kazuto	The University of Tokyo

15:51-15:54 ThDTS8.8

Robot Artist Performs Cartoon Style Facial Portrait Painting, pp. 7683-7688.

Luo, Ren	National Taiwan University
Liu, Yu Jung	National Taiwan University

ThDTS9 Room 4.L1
Agriculture Robotics I (Regular session)
 Co-Chair: Sun, Li University of Birmingham

15:30-15:33 ThDTS9.1

Robust Plant Phenotyping Via Model-Based Optimization, pp. 7689-7696.

Sodhi, Paloma	Carnegie Mellon University
Sun, Hanqi	Carnegie Mellon University
Poczós, Barnabas	Carnegie Mellon University
Wettergreen, David	Carnegie Mellon University

15:33-15:36 ThDTS9.2

Registering Reconstructions of the Two Sides of Fruit Tree Rows, pp. 7697-7702.

Roy, Pravakar	University of Minnesota
Dong, Wenbo	University of Minnesota
Isler, Volkan	University of Minnesota

15:36-15:39 ThDTS9.3

Fruit Quantity and Ripeness Estimation Using a Robotic Vision System, N/A.

Halstead, Michael Allan	Queensland University of Technology
McCool, Christopher Steven	Queensland University of Technology
Denman, Simon	QUT
Perez, Tristan	Queensland University of Technology
Fookes, Clinton	Queensland University of Technology

15:39-15:42 ThDTS9.4

Design of an Autonomous Precision Pollination Robot, pp. 7711-7718.

Ohi, Nicholas	West Virginia University
Lassak, Kyle	West Virginia University
Watson, Ryan	West Virginia University
Strader, Jared	West Virginia University
Du, Yixin	West Virginia University
Yang, Chizhao	West Virginia University
Hedrick, Gabrielle	West Virginia University
Nguyen, Jennifer	West Virginia University
Harper, Scott	West Virginia University

Reynolds, Dylan	West Virginia University
Kilic, Cagri	West Virginia University
Hikes, Jacob	West Virginia University
Mills, Sarah	West Virginia University
Castle, Conner	West Virginia University
Buzzo, Benjamin	West Virginia University
Waterland, Nicole	West Virginia University, Division of Plant and Soil Sciences
Gross, Jason	West Virginia University
Park, Yong-Lak	West Virginia University
Li, Xin	West Virginia University
Gu, Yu	West Virginia University

15:42-15:45 ThDTS9.5

Multi-Species Fruit Flower Detection Using a Refined Semantic Segmentation Network, N/A.

Ambrozio, Dias, Philippe	Marquette University
Tabb, Amy	USDA-ARS-AFRS
Medeiros, Henry	Marquette University

15:45-15:48 ThDTS9.6

Close Coordination of Mobile Robots Using Radio Beacons: A New Concept Aimed at Smart Spraying in Agriculture, pp. 7727-7734.

Tourrette, Thibault	IRSTEA Clermont Ferrand
Deremetz, Mathieu	IRSTEA Clermont Ferrand
Naud, Olivier	Irstea
Lenain, Roland	Irstea
Laneurit, Jean	Irstea
De Rudnicki, Vincent	Irstea

15:48-15:51 ThDTS9.7

Tree Detection with Low-Cost 3D Sensors for Autonomous Navigation in Orchards, N/A.

Durand-Petiteville, Adrien	University of California, Davis
Le Flecher, Emile	Univ Toulouse III, LAAS-CNRS
Cadenat, Viviane	University of Toulouse
Sentenac, Thierry	LAAS-CNRS
Vougioukas, Stavros	UC Davis

15:51-15:54 ThDTS9.8

Diversity in Pedestrian Safety for Industrial Environments Using 3D Lidar Sensors and Neural Networks, pp. 7743-7749.

Bell, Jamie	The University of Auckland
MacDonald, Bruce	University of Auckland
Ahn, Ho Seok	The University of Auckland, Auckland

ThDTS10 Room 4.R1
Software and Middleware I (Regular session)

Chair: Beltrame, Giovanni	Ecole Polytechnique De Montreal
Co-Chair: Faragasso, Angela	The University of Tokyo

15:30-15:33 ThDTS10.1

Underworlds: Cascading Situation Assessment for Robots, pp. 7750-7757.

Lemaignan, Séverin	University of the West of England
Sallami, Yoan	LAAS-CNRS
Wallbridge, Christopher	University of Plymouth
Clodic, Aurélie	Laas - Cnrs
Belpaeme, Tony	Plymouth University
Alami, Rachid	CNRS

15:33-15:36 ThDTS10.2

OpenSeqSLAM2.0: An Open Source Toolbox for Visual Place Recognition under Changing Conditions, pp. 7758-7765.

Talbot, Ben	Queensland University of Technology
Garg, Sourav	Queensland University of Technology
Milford, Michael J	Queensland University of Technology

15:36-15:39 ThDTS10.3

HERO: Accelerating Autonomous Robotic Tasks with FPGA, pp. 7766-7772.

Shi, Xuesong	Intel
Cao, Lu	Intel
Wang, Dawei	Intel Labs
Liu, Ling	Intel
You, Ganmei	Intel
Liu, Shuang	Intel
Wang, Chunjie	Intel

15:39-15:42 ThDTS10.4

Procedurally Provisioned Access Control for Robotic Systems, pp. 7773-7780.

White, Ruffin	University of California San Diego
Caiazza, Gianluca	Ca Foscari University of Venice
Cortesi, Agostino	Università Ca' Foscari Venezia
Christensen, Henrik Iskov	UC San Diego

15:42-15:45 ThDTS10.5

XBotCloud: A Scalable Cloud Computing Infrastructure for XBot Powered Robots, pp. 7781-7788.

Muratore, Luca	Istituto Italiano Di Tecnologia
Lennox, Barry	The University of Manchester
Tsarakakis, Nikos	Istituto Italiano Di Tecnologia

15:45-15:48 ThDTS10.6

Learning to Touch Objects through Stage-Wise Deep Reinforcement Learning, pp. 7789-7794.

de La Bourdonnaye, François	Université Clermont Auvergne
Teuliere, Celine	Blaise Pascal University
Triesch, Jochen	Frankfurt Institute for Advanced Studies
Chateau, Thierry	Clermont Auvergne University

15:48-15:51 ThDTS10.7

Bayesian Information Recovery from CNN for Probabilistic Inference, pp. 7795-7802.

Kopitkov, Dmitry	Technion - Israel Institute of Technology
Indelman, Vadim	Technion - Israel Institute of Technology

ThETS1 Room 1.L5
Aerial Systems VIII (Regular session)

Co-Chair: Schoellig, Angela P.	University of Toronto
--------------------------------	-----------------------

17:00-17:03 ThETS1.1

Catenary Tether Shape Analysis for a UAV - USV Team, pp. 7803-7809.

Talke, Kurt	Spawar Systems Center Pacific
de Oliveira, Mauricio	University of California, San Diego
Bewley, Thomas	Flow Control & Coordinated Robotics Labs

17:03-17:06 ThETS1.2

Inertial Velocity and Attitude Estimation for Quadrotors, pp. 7810-7816.

Svacha, James	University of Pennsylvania
Mohta, Kartik	University of Pennsylvania
Watterson, Michael	University of Pennsylvania
Loianno, Giuseppe	New York University
Kumar, Vijay	University of Pennsylvania

17:06-17:09 ThETS1.3

Quadtree-Accelerated Real-Time Monocular Dense Mapping, pp. 7817-7824.

Wang, Kaixuan	Hong Kong University of Science and Technology
Ding, Wenchao	Hong Kong University of Science and Technology
Shen, Shaojie	Hong Kong University of Science and Technology

17:09-17:12 ThETS1.4

The Deformable Quad-Rotor Enabled and Wasp-Pedal-Carrying Inspired Aerial Gripper, pp. 7825-7830.

Zhao, Na	University of Nevada, Reno
Luo, Yudong	University of Nevada, Reno
Deng, Hongbin	Beijing Institute of Technology
Shen, Yantao	University of Nevada, Reno
Xu, Hao	University of Nevada, Reno

17:12-17:15 ThETS1.5

Adaptive Model Predictive Control for High-Accuracy Trajectory Tracking in Changing Conditions, pp. 7831-7837.

Pereida Perez, Karime	University of Toronto
Schoellig, Angela P.	University of Toronto

17:15-17:18 ThETS1.6

Methods for Autonomous Wristband Placement with a Search-And-Rescue Aerial Manipulator, pp. 7838-7844.

Gomez de Gabriel, Jesus Manuel	Universidad De Malaga
Gandarias, Juan M.	University of Malaga
Perez Maldonado, Francisco Javier	University of Malaga
García Nuñez, Francisco Jose	Universidad De Málaga
Fernández, García, Emilio Jesús	University of Málaga
García-Cerezo, Alfonso	University of Malaga

17:18-17:21 ThETS1.7

Nonlinear Adaptive Control of Quadrotor Multi-Flipping Maneuvers in the Presence of Time-Varying Torque Latency, pp. 7845-7852.

Chen, Ying	University of Southern California
Perez-Arancibia, Nestor O	University of Southern California (USC)

17:21-17:24 ThETS1.8

High-Speed Flight of Quadrotor Despite Loss of Single Rotor, N/A.

Sun, Sihao	Student
Sijbers, Leon Marinus Christiaan	Delft University of Technology
Wang, Xuerui	Delft University of Technology
de Visser, Coen	TU Delft

ThETS2 Room 2.L5 KUKA
Sensorial Perception VIII (Regular session)

Chair: Piater, Justus	University of Innsbruck
Co-Chair: Copaci, Dorin Sabin	Universidad Carlos III De Madrid

17:00-17:03	ThETS2.1
<i>NDVI Point Cloud Generator Tool Using Low-Cost RGB-D Sensors</i> , pp. 7860-7865.	
Calero, Scanlan, David	CTTC
Fernández, Murcia, Enric	CTTC
Parés, Calaf, Maria Eulàlia	CTTC
Angelats, Company, Eduard	CTTC
17:03-17:06	ThETS2.2
<i>Unsupervised Object Proposal Using Depth Boundary Density and Density Uniformity</i> , pp. 7866-7871.	
Hosono, Takashi	NTT Media Intelligence Laboratories, NTT Corporation
Tarashima, Shuhei	NTT Media Intelligence Laboratories
Shimamura, Jun	NTT Media Intelligence Laboratories
Kinebuchi, Tetsuya	NTT Corporation
17:06-17:09	ThETS2.3
<i>LIMO: Lidar-Monocular Visual Odometry</i> , pp. 7872-7879.	
Gräter, Johannes	Karlsruher Institut Für Technologie (KIT)
Wilczynski, Alexander	Karlsruhe Institute of Technology
Lauer, Martin	Karlsruhe Institute of Technology
17:09-17:12	ThETS2.4
<i>Learning to Segment Generic Handheld Objects Using Class-Agnostic Deep Comparison and Segmentation Network</i> , N/A.	
Chaudhary, Krishneel Chand	The University of Tokyo
Wada, Kentaro	The University of Tokyo
Chen, Xiangyu	The University of Tokyo
Kimura, Kohei	The University of Tokyo
Okada, Kei	The University of Tokyo
Inaba, Masayuki	The University of Tokyo
17:12-17:15	ThETS2.5
<i>Exercising Affordances of Objects: A Part-Based Approach</i> , N/A.	
Rezapour Lakani, Safoura	University of Innsbruck
Rodriguez-Sanchez, Antonio	University of Innsbruck
Piater, Justus	University of Innsbruck
17:15-17:18	ThETS2.6
<i>Detect Globally, Label Locally: Learning Accurate 6-DOF Object Pose Estimation by Joint Segmentation and Coordinate Regression</i> , N/A.	
Nigam, Apurv	University College London
Peñate-Sánchez, Adrián	Institut De Robòtica I Informàtica Industrial, CSIC-UPC
Agapito, Lourdes	University College London
17:18-17:21	ThETS2.7
<i>DLWV2: A Deep Learning-Based Wearable Vision-System with Vibrotactile-Feedback for Visually Impaired People to Reach Objects</i> , pp. 7904-7911.	
Shih, Meng-Li	National Tsing Hua University
Chen, Yi-Chun	National Tsing Hua University
Tung, Chia-Yu	National Tsing Hua University
Sun, Cheng	National Tsing Hua University
Cheng, Ching-Ju	National Tsing Hua University
Chan, Liwei	National Chao Tung University
Varadarajan, Srenivas	Intel Corporation
Sun, Min	National Tsing Hua University
17:21-17:24	ThETS2.8
<i>PCAOT: A Manhattan Point Cloud Registration Method towards</i>	

Large Rotation and Small Overlap, pp. 7912-7917.

Guo, Ping	Intel
Hu, Wei	Intel
Ren, Haibing	Intel Labs China
Zhang, Yimin	Intel Corporation

ThETS3	Room 1.L2
Path Planning for Multiple Mobile Robots (Regular session)	
Chair: Hasegawa, Yasuhisa	Nagoya University
17:00-17:03	ThETS3.1
<i>Minimal Construct: Efficient Shortest Path Finding for Mobile Robots in Polygonal Maps</i> , pp. 7918-7923.	
Missura, Marcell	University of Bonn
Lee, Daniel	Cornell Tech
Bennewitz, Maren	University of Bonn
17:03-17:06	ThETS3.2
<i>Trajectory Planning for Heterogeneous Robot Teams</i> , pp. 7924-7931.	
Debord, Mark	University of Southern California
Hoenig, Wolfgang	University of Southern California
Ayanian, Nora	University of Southern California
17:06-17:09	ThETS3.3
<i>A Motion Planning Approach for Marsupial Robotic Systems</i> , pp. 7932-7938.	
Stankiewicz, Paul	Johns Hopkins University Applied Physics Laboratory
Jenkins, Stephen	Johns Hopkins University Applied Physics Laboratory
Mullins, Galen	University of Maryland
Wolfe, Kevin	Johns Hopkins University Applied Physics Laboratory
Johannes, Matthew	The Johns Hopkins University Applied Physics Laboratory
Moore, Joseph	Johns Hopkins University Applied Physics Lab
17:09-17:12	ThETS3.4
<i>Motion Planning and Goal Assignment for Robot Fleets Using Trajectory Optimization</i> , pp. 7939-7946.	
Salvado, João	Orebro University
Mansouri, Masoumeh	Örebro University
Pecora, Federico	Örebro University
Krug, Robert	KTH Royal Institute of Technology
17:12-17:15	ThETS3.5
<i>Re-Establishing Communication in Teams of Mobile Robots</i> , pp. 7947-7954.	
Vandermeulen, Isaac	University of Sheffield
Gross, Roderich	The University of Sheffield
Kolling, Andreas	IRobot Corporation
17:15-17:18	ThETS3.6
<i>Multi-Agent Planning for Coordinated Robotic Weed Killing</i> , pp. 7955-7960.	
McAllister, Wyatt	University of Illinois at Urbana-Champaign
Osipychiev, Denis	University of Illinois at Urbana-Champaign
Chowdhary, Girish	University of Illinois at Urbana-Champaign
Davis, Adam	USDA-ARS in Urbana, IL
17:18-17:21	ThETS3.7
<i>Intelligent Robotic IoT System (IRIS) Testbed</i> , pp. 7961-7966.	

Tran, Jason A	University of Southern California
Ghosh, Pradipta	University of Southern California
Gu, Yutong	University of Southern California
Kim, Richard	University of Southern California
Dsouza, Daniel	University of Southern California
Ayanian, Nora	University of Southern California
Krishnamachari, Bhaskar	USC Viterbi School of Engineering
17:21-17:24	ThETS3.8
<i>SEAR: A Polynomial-Time Multi-Robot Path Planning Algorithm with Expected Constant-Factor Optimality Guarantee</i> , pp. 7967-7974.	
Han, Shuai D.	Rutgers University
Jaramillo Rodriguez, Edgar	University of California, Berkeley
Yu, Jingjin	Rutgers University
ThETS4	Room 2.L2
Control V (Regular session)	
Co-Chair: Gimenez, Antonio	University of Almeria
17:00-17:03	ThETS4.1
<i>Towards Peak Torque Minimization for Modular Self-Folding Robots</i> , pp. 7975-7982.	
Yao, Meibao	Harbin Institute of Technology
Cui, Hutaο	Harbin Institute of Technology
Xiao, Xueming	Changchun University of Science and Technology
Belke, Christoph H.	École Polytechnique Fédérale De Lausanne
Paik, Jamie	Ecole Polytechnique Federale De Lausanne
17:03-17:06	ThETS4.2
<i>Passive Nonlinear Impedance Control for Port-Hamiltonian Systems</i> , pp. 7983-7988.	
Okura, Yuki	Kyoto University
Fujimoto, Kenji	Kyoto University
17:06-17:09	ThETS4.3
<i>Trajectory Optimization with Implicit Hard Contacts</i> , N/A.	
Carius, Jan	ETH Zurich
Ranftl, Rene	Intel
Koltun, Vladlen	Intel Labs
Hutter, Marco	ETH Zurich
17:09-17:12	ThETS4.4
<i>Riding and Speed Governing for Parallel Two-Wheeled Scooter Based on Sequential Online Learning Control by Humanoid Robot</i> , pp. 7997-8004.	
Kimura, Kohei	The University of Tokyo
Nozawa, Shunichi	The University of Tokyo
Mizohana, Hiroto	University of Tokyo
Okada, Kei	The University of Tokyo
Inaba, Masayuki	The University of Tokyo
17:12-17:15	ThETS4.5
<i>Soft-Actuator-Based Robotic Joint for Safe and Forceful Interaction with Controllable Impact Response</i> , N/A.	
Chen, Xiaojiao	The University of Hong Kong
Yi, Juan	The University of Hong Kong
Li, Jing	The University of Hong Kong
Zhou, Jianshu	The University of Hong Kong
Wang, Zheng	The University of Hong Kong
17:15-17:18	ThETS4.6

Dynamic Modelling and Motion Planning for the Nonprehensile Manipulation and Locomotion Tasks of the Quadruped Robot, pp. 8013-8018.

Zhang, Guoteng	Ritsumeikan University
Ma, Shugen	Ritsumeikan University
Li, Yibin	Shandong University

17:18-17:21 ThETS4.7

Fuzzy-Based Feedback Control of a Tip-Mounted Module for Robot-Assisted Endoscopy, pp. 8019-8026.

Gafford, Joshua	Harvard University
Aihara, Hiroyuki	Brigham and Women's Hospital
Thompson, Christopher	Brigham and Women's Hospital
Walsh, Conor James	Harvard University
Wood, Robert	Harvard University

17:21-17:24 ThETS4.8

A Real-Time Solver for Time-Optimal Control of Omnidirectional Robots with Bounded Acceleration, pp. 8027-8032.

Balaban, David	University of Massachusetts Amherst
Fischer, Alexander	University of Massachusetts, Amherst
Biswas, Joydeep	University of Massachusetts Amherst

ThETS5 Room 2.R3

Soft Robotics V (Regular session)

Co-Chair: Mochiyama, Hiromi	University of Tsukuba
-----------------------------	-----------------------

17:00-17:03 ThETS5.1

A Variable Degree-Of-Freedom and Self-Sensing Soft Bending Actuator Based on Conductive Liquid Metal and Thermoplastic Polymer Composites, pp. 8033-8038.

Hao, Yufei	Beihang University
Liu, Zemin	Beihang University
Xie, ZheXin	Beijing University of Aeronautics and Astronautics

Fang, Xi	Beihang University
Wang, Tianmiao	Beijing University of Aeronautics and Astronautics

Wen, Li	Beihang University
---------	--------------------

17:03-17:06 ThETS5.2

A New Manufacturing Process for Soft Robots and Soft/Rigid Hybrid Robots, pp. 8039-8046.

Yang, Hee Doo	Virginia Tech
Asbeck, Alan	Virginia Tech

17:06-17:09 ThETS5.3

An Origami-Inspired Reconfigurable Suction Gripper for Picking Objects with Variable Shape and Size, N/A.

Zhakypov, Zhenishbek	École Polytechnique Fédérale De Lausanne (EPFL)
Heremans, Florian	Vrije Universiteit Brussel
Billard, Aude	EPFL
Paik, Jamie	Ecole Polytechnique Federale De Lausanne

17:09-17:12 ThETS5.4

Braiding Thin McKibben Muscles to Enhance Their Contracting Abilities, N/A.

Koizumi, Shoichiro	Tokyo Institute of Technology
Kurumaya, Shunichi	Tokyo Institute of Technology
Nabae, Hiroyuki	Tokyo Institute of Technology
Endo, Gen	Tokyo Institute of Technology
Suzumori, Koichi	Tokyo Institute of Technology

17:12-17:15	ThETS5.5
<i>Magnetic-Field-Inspired Navigation for Soft Continuum Manipulator</i> , pp. 8061-8066.	
Ataka, Ahmad	King's College London
Shiva, Ali	King's College London
Lam, Hak-Keung	King's College London
Althoefer, Kaspar	Queen Mary University of London
17:15-17:18	ThETS5.6
<i>Real-Time Shape Estimation of an Elastic Rod Using a Robot Manipulator Equipped with a Sense of Force</i> , pp. 8067-8073.	
Nakagawa, Naohiro	University of Tsukuba
Mochiyama, Hiromi	University of Tsukuba
17:18-17:21	ThETS5.7
<i>Force Generation by Parallel Combinations of Fiber-Reinforced Fluid-Driven Actuators</i> , N/A.	
Bruder, Daniel	University of Michigan
Sedal, Audrey	University of Michigan
Vasudevan, Ram	University of Michigan
Remy, C. David	University of Michigan
ThETS6	Room 1.L3
Motion and Path Planning III (Regular session)	
Chair: Martinet, Philippe	INRIA
Co-Chair: Cañas, José M.	Universidad Rey Juan Carlos
17:00-17:03	ThETS6.1
<i>FOCS: Planning by Fusion of Optimal Control & Search and Its Application to Navigation</i> , pp. 8082-8088.	
Micelli, Piero	University of Parma
Likhachev, Maxim	Carnegie Mellon University
17:03-17:06	ThETS6.2
<i>Quotient-Space Motion Planning</i> , pp. 8089-8096.	
Orthey, Andreas	AIST
Escande, Adrien	Cnrs-Aist Jrl Umi3218/rl
Yoshida, Eiichi	National Inst. of AIST
17:06-17:09	ThETS6.3
<i>Computing a Collision-Free Path Using the Monogenic Scale Space</i> , pp. 8097-8102.	
Holmquist, Karl	Linköping University
Senel, Deniz	Bogazici University
Felsberg, Michael	Linköping University
17:09-17:12	ThETS6.4
<i>Automatic Parameter Tuning of Motion Planning Algorithms</i> , pp. 8103-8109.	
Cano, José	The University of Edinburgh
Yang, Yiming	University of Edinburgh
Bodin, Bruno	The University of Edinburgh
Nagarajan, Vijay	University of Edinburgh
O'Boyle, Michael F P	The University of Edinburgh
17:12-17:15	ThETS6.5
<i>Perception-Driven Sparse Graphs for Optimal Motion Planning</i> , pp. 8110-8117.	
Sayre-McCord, Thomas	MIT
Karaman, Sertac	Massachusetts Institute of Technology
17:15-17:18	ThETS6.6
<i>Social Cohesion in Autonomous Driving</i> , pp. 8118-8125.	
Landolfi, Nicholas Charles	University of California, Berkeley
Dragan, Anca	University of California Berkeley

17:18-17:21	ThETS6.7
<i>Socially-Aware Navigation Using Non-Linear Multi-Objective Optimization</i> , pp. 8126-8133.	
Forer, Scott	University of Nevada, Reno
Banisetty, Santosh Balajee	University of Nevada, Reno
Yliniemi, Logan	University of Nevada, Reno
Nicolescu, Monica	University of Nevada, Reno
Feil-Seifer, David	University of Nevada, Reno
17:21-17:24	ThETS6.8
<i>Constrained Path Planning Using Quadratic Programming</i> , pp. 8134-8139.	
Fusco, Franco	LS2N Centrale Nantes
Kermorgant, Olivier	École Centrale Nantes
Martinet, Philippe	INRIA
ThETS7	Room 2.L3
Bioinspired Robotics III (Regular session)	
Chair: Chen, Zheng	University of Houston
17:00-17:03	ThETS7.1
<i>Ladder Climbing with a Snake Robot</i> , pp. 8140-8145.	
Takemori, Tatsuya	Kyoto University
Tanaka, Motoyasu	The Univ. of Electro-Communications
Matsuno, Fumitoshi	Kyoto University
17:03-17:06	ThETS7.2
<i>Modeling of Robotic Fish Propelled by a Servo/IPMC Hybrid Tail</i> , pp. 8146-8151.	
Chen, Zheng	University of Houston
Hou, Piqi	Wichita State University
Ye, Zhihang	Wichita State University
17:06-17:09	ThETS7.3
<i>Blade-Type Crawler Capable of Running on the Surface of Water As Bio-Inspired by a Basilisk Lizard</i> , pp. 8152-8157.	
Yamada, Yasuyuki	Chuo University
Nakamura, Taro	Chuo University
17:09-17:12	ThETS7.4
<i>Bio-Inspired Design of a Gliding-Walking Multi-Modal Robot</i> , pp. 8158-8164.	
Shin, Won Dong	University of Illinois at Urbana Champaign
Park, Jae-jun	University of Illinois at Urbana-Champaign
Park, Hae-Won	University of Illinois at Urbana Champaign
17:12-17:15	ThETS7.5
<i>Design of Lizard-Inspired Robot with Lateral Body Motion</i> , pp. 8165-8170.	
Kim, Jeongryul	Seoul National University
Kim, Hongmin	Seoul National University
Kim, Youngsoo	Seoul National University
Kim, Hwa Soo	Kyonggi University
Kim, Jongwon	Seoul National University
17:15-17:18	ThETS7.6
<i>Natural Dynamics Exploitation of Dynamic Soaring: Towards Bio-Inspired and Energy Efficient Flying Locomotion</i> , pp. 8171-8176.	
Nekoui, Mahdiar	University of Tehran
Khaghani, Javad	University of Tehran
Nasiri, Rezvan	University of Tehran
Nili Ahmadabadi, Majid	University of Tehran
17:18-17:21	ThETS7.7

Development of High-Speed Type Peristaltic Crawling Robot for Long-Distance and Complex-Line Sewer Pipe Inspection, pp. 8177-8183.

Mano, Yuki	Chuo-University
Ishikawa, Ryutaro	Chuo-University
Yamada, Yasuyuki	Chuo University
Nakamura, Taro	Chuo University

ThETS8	Room 2.R1
Service Robots II (Regular session)	
Chair: Vincze, Markus	Vienna University of Technology

17:00-17:03 ThETS8.1

Learning and Generation of Actions from Teleoperation for Domestic Service Robots, pp. 8184-8191.

Iwata, Kensuke	The University of Electro-Communications
Aoki, Tatsuya	The University of Electro-Communications
Horii, Takato	The University of Electro-Communications
Nakamura, Tomoaki	The University of Electro-Communications
Nagai, Takayuki	University of Electro-Communications

17:03-17:06 ThETS8.2

Proxemics and Approach Evaluation by Service Robot Based on User Behavior in Domestic Environment, pp. 8192-8199.

Samarakoon, Bhagya	University of Moratuwa
Hewa Pelendage, Chapa Sirithunge	University of Moratuwa
Muthugala Arachchige, Viraj Jagathpriya Muthugala	University of Moratuwa
Jayasekara, A.G.B.P.	University of Moratuwa

17:06-17:09 ThETS8.3

Robot Approaching and Engaging People in a Human-Robot Companion Framework, pp. 8200-8205.

Repiso, Ely	Institut De Robòtica I Informàtica Industrial, CSIC-UPC
Garrell, Anais	UPC-CSIC
Sanfeliu, Alberto	Universitat Politècnica De Catalunya

17:09-17:12 ThETS8.4

A 7-DOF Wire-Driven Lightweight Arm with Wide Wrist Motion Range, pp. 8206-8211.

Tsumaki, Yuichi	Yamagata University
Suzuki, Yuya	Secom Industries, Ltd
Sasaki, Narumi	Yamagata University
Obara, Eiki	Yamagata University
Kanazawa, Shuta	Yamagata University

17:12-17:15 ThETS8.5

Don't Make the Same Mistakes Again and Again: Learning Local Recovery Policies for Navigation from Human Demonstrations, N/A

Del Duchetto, Francesco	University of Lincoln
Kucukyilmaz, Ayse	University of Lincoln
Iocchi, Luca	Sapienza University of Roma
Hanheide, Marc	University of Lincoln

17:15-17:18 ThETS8.6

RAMCIP – a Service Robot for MCI Patients at Home, pp. 8220-8220.

Peleka, Georgia	CERTH, Thessaloniki Greece
Kargakos, Andreas	CERTH

Skartados, Evangelos
Kostavelis, Ioannis

CERTH, Thessaloniki, Greece
Center for Research and Technology Hellas

Giakoumis, Dimitris

Centre for Research and Technology Hellas

Sarantopoulos, Iason

Aristotle University of Thessaloniki

Doulgeri, Zoe

Aristotle University of Thessaloniki

Foukarakis, Michalis

Foundation for Research and Technology Hellas

Antona, Margherita

Foundation for Research and Technology - Hellas (FORTH)

Hirche, Sandra

Technische Universität München

Ruffaldi, Emanuele

Scuola Superiore Sant'Anna

Stanczyk, Bartlomiej

ACCRESA

Zompas, Anastasios

Shadow Robot Company

Hernández Farigola, Joan

Alzheimer Research Center and Memory Clinic of Fundacio ACE

Roberto, Natalia

Alzheimer Research Center and Memory Clinic of Fundacio ACE

Rejdak, Konrad

Medical University of Lublin

Tzavaras, Dimitrios

Centre for Research and Technology Hellas

17:18-17:21 ThETS8.7

Nonlinear Analysis of an Indirectly Controlled Sliding Locomotion Robot, pp. 8221-8226.

Li, Longchuan

Japan Advanced Institute of Science and Technology

Asano, Fumihiko

Japan Advanced Institute of Science and Technology

Tokuda, Isao

Ritsumeikan University

17:21-17:24 ThETS8.8

Planning Topological Navigation for Complex Indoor Environments, pp. 8227-8232.

Martin Rico, Francisco

Carnegie Mellon University

Gines Clavero, Jonatan

King Juan Carlos University

Vargas Frutos, David

Universidad Rey Juan Carlos

Rodríguez Lera, Francisco Javier

Universidad De León

Matellan, Vicente

Universidad De Leon

ThETS9 Room 4.L1

Agriculture Robotics II (Regular session)

Chair: Ribeiro, Angela

CSIC

Co-Chair: Chen, Zetao

ETH Zurich

17:00-17:03 ThETS9.1

Joint Stem Detection and Crop-Weed Classification for Plant-Specific Treatment in Precision Farming, pp. 8233-8238.

Lottes, Philipp

University of Bonn

Behley, Jens

University of Bonn

Chebroly, Nived

University of Bonn

Milioto, Andres

University of Bonn

Stachniss, Cyrill

University of Bonn

17:03-17:06 ThETS9.2

Seeing the Wood for the Trees: Reliable Localization in Urban and Natural Environments, pp. 8239-8246.

Tinchev, Georgi

University of Oxford

Nobili, Simona

University of Edinburgh

Fallon, Maurice

University of Oxford

17:06-17:09 ThETS9.3

Extracting Phenotypic Characteristics of Corn Crops through the

Use of Reconstructed 3D Models, pp. 8247-8254.

Zermas, Dimitris	CSE, UMN
Morellas, Vassilios	U. of Minnesota
Mulla, David	University of Minnesota
Papanikolopoulos, Nikos	University of Minnesota

17:09-17:12 ThETS9.4

Automatic Segmentation of Tree Structure from Point Cloud Data, N/A.

Digumarti, Sundara Tejaswi	ETH Zurich
Nieto, Juan	ETH Zürich
Cadena Lerma, Cesar	ETH Zurich
Sieglwart, Roland	ETH Zurich
Beardsley, Paul	Disney Research Zurich

17:12-17:15 ThETS9.5

Analysis of Morphology-Based Features for Classification of Crop and Weeds in Precision Agriculture, N/A.

Bosilj, Petra	University of Lincoln
Duckett, Tom	University of Lincoln
Cielniak, Grzegorz	University of Lincoln

17:15-17:18 ThETS9.6

A Novel Autonomous Robot for Greenhouse Applications, pp. 8270-8277.

Grimstad, Lars	Norwegian University of Life Sciences
Zakaria, Remy Nazir Bård	Norwegian University of Life Sciences
Le, Tuan Dung	Norwegian University of Life Sciences
From, Pål Johan	Norwegian University of Life Sciences

17:18-17:21 ThETS9.7

An Effective Multi-Cue Positioning System for Agricultural Robotics, N/A.

Imperoli, Marco	Sapienza University of Rome
Potena, Ciro	Sapienza University of Rome
Nardi, Daniele	Sapienza University of Rome
Grisetti, Giorgio	Sapienza University of Rome
Pretto, Alberto	Sapienza University of Rome

17:21-17:24 ThETS9.8

The Use of Dynamic Sensing Strategies to Improve Detection for a Pepper Harvesting Robot, pp. 8286-8293.

Kurtser, Polina	Ben Gurion University of the Negev
Edan, Yael	Ben-Gurion University of the Negev

ThETS10 Room 4.R1
Software and Middleware II (Regular session)

Chair: Cherubini, Andrea	LIRMM - Universite De Montpellier CNRS
Co-Chair: Cianchetti, Matteo	Scuola Superiore Sant'Anna

17:00-17:03 ThETS10.1

Dolphin: A Task Orchestration Language for Autonomous Vehicle Networks, pp. 8294-8301.

Lima, Keila	Laboratório De Sistemas E Tecnologia Subaquática - Faculdade De
Marques, Eduardo R. B.	Dcc/fcup & Cracs/Inesc-Tec
Pinto, José	Faculty of Engineering, Porto University
Sousa, João	Universidade Porto - Faculdade Engenharia

17:03-17:06 ThETS10.2

π -SoC: Heterogeneous SoC Architecture for Visual Inertial SLAM Applications, pp. 8302-8307.

Tang, Jie	South China University of Technology
Yu, Bo	PerceptIn
Liu, Shaoshan	PerceptIn
Zhang, Zhe	PerceptIn
Fang, Weikang	Beijing Institute of Technology
Zhang, Yanjun	Beijing Institute of Technology

17:06-17:09 ThETS10.3

VTSL - a Formally Verifiable DSL for Specifying Robot Tasks, pp. 8308-8314.

Heinzemann, Christian	Robert Bosch GmbH
Lange, Ralph	Robert Bosch GmbH

17:09-17:12 ThETS10.4

GPU-Accelerated Next-Best-View Coverage of Articulated Scenes, pp. 8315-8322.

Osswald, Stefan	University of Bonn
Bennewitz, Maren	University of Bonn

17:12-17:15 ThETS10.5

Scene Modeling and Augmented Virtuality Interface for Telerobotic Satellite Servicing, N/A.

Vagvolgyi, Balazs	Johns Hopkins University
Pryor, Will	Johns Hopkins University
Reedy, Ryan	University of Central Florida
Niu, Wenlong	National Space Science Center, University of Chinese Academy Of

Deguet, Anton	Johns Hopkins University
Whitcomb, Louis	The Johns Hopkins University
Leonard, Simon	The Johns Hopkins University
Kazanzides, Peter	Johns Hopkins University

17:15-17:18 ThETS10.6

A 3D Convolutional Neural Network towards Real-Time Amodal 3D Object Detection, pp. 8331-8338.

Sun, Hao	National University of Singapore
Meng, Zehui	National University of Singapore
Du, Xinxin	Singapore-MIT Alliance for Research and Technology (SMART)
Ang Jr, Marcelo H	National University of Singapore

ThFTS1 Room 1.L5
Motion and Path Planning for Manipulators (Regular session)

Chair: Alami, Rachid	CNRS
Co-Chair: Prasad, Dilip	Nanyang Technological University

18:00-18:03 ThFTS1.1

Sinc-Based Dynamic Movement Primitives for Encoding Point-To-Point Kinematic Behaviors, pp. 8339-8345.

Papageorgiou, Dimitrios	Aristotle University of Thessaloniki
Sidiropoulos, Antonis	Aristotle University of Thessaloniki
Doulgeri, Zoe	Aristotle University of Thessaloniki

18:03-18:06 ThFTS1.2

An Optimization-Based Approach to Dual-Arm Motion Planning with Closed Kinematics, pp. 8346-8351.

Völz, Andreas	Ulm University
---------------	----------------

Graichen, Knut	Ulm University
18:06-18:09	ThFTS1.3
<i>Smooth Point-To-Point Trajectory Planning in SE(3) with Self-Collision and Joint Constraints Avoidance</i> , pp. 8352-8359.	
Grassmann, Reinhard	Gottfried Wilhelm Leibniz Universität Hannover
Johannsmeier, Lars	Technical University Munich
Haddadin, Sami	Technical University of Munich
18:09-18:12	ThFTS1.4
<i>Collision-Free Path Planning of Dual-Manipulator System Based on Energy Conversion</i> , pp. 8360-8366.	
Su, Chang	Huazhong University of Science & Technology
Wei, Ruixin	Huazhong University of Science and Technology
Mingliang, Zhang	Bosch (China) Investment Ltd
Rose, Hannes	Bosch (China) Investment Ltd
Jianfeng, Xu	Huazhong University of Science and Technology
18:12-18:15	ThFTS1.5
<i>CROC: Convex Resolution of Centroidal Dynamics Trajectories to Provide a Feasibility Criterion for the Multi Contact Planning Problem</i> , pp. 8367-8373.	
Fernbach, Pierre	Cnrs - Laas
Tonneau, Steve	Cnrs - Laas
Taïx, Michel	LAAS-CNRS/Université Paul Sabatier
18:15-18:18	ThFTS1.6
<i>A Framework for Manipulating Deformable Linear Objects by Coherent Point Drift</i> , N/A.	
Tang, Te	University of California, Berkeley
Wang, Changhao	University of California, Berkeley
Tomizuka, Masayoshi	University of California
18:18-18:21	ThFTS1.7
<i>Direct Collocation for Dynamic Behaviors with Nonprehensile Contacts: Application to Flipping Burgers</i> , N/A.	
Kolathaya, Shishir	Texas A&M University
Guffey, William	Miso Robotics
Sinnet, Ryan	ESolar, Inc
Ames, Aaron	Caltech
18:21-18:24	ThFTS1.8
<i>Variations on a Theme: ``It's a Poor Sort of Memory That Only Works Backwards``</i> , pp. 8390-8396.	
Balint-Benczedi, Ferenc	University of Bremen
Beetz, Michael	University of Bremen

ThFTS2	Room 2.L5 KUKA
Sensorial Perception IX (Regular session)	
Chair: Nunes, Urbano	Instituto De Sistemas E Robotica
Co-Chair: Kim, Joohee	Illinois Institute of Technology
18:00-18:03	ThFTS2.1
<i>Attitude Estimation from Polarimetric Cameras</i> , pp. 8397-8403.	
Rastgoo, Mojdeh	Universite De Bourgogne Franche-Comte
Demonceaux, Cédric	Université Bourgogne Franche-Comté
Seulin, Ralph	University of Burgundy, Le2i Laboratory, UMR-CNRS 5158, 71200 L
Morel, Olivier	University of Burgundy
18:03-18:06	ThFTS2.2

<i>The Earth Ain't Flat: Monocular Reconstruction of Vehicles on Steep and Graded Roads from a Moving Camera</i> , pp. 8404-8410.	
Ansari, Junaid Ahmed	International Institute of Information Technology, Hyderabad
Sharma, Sarthak	International Institute of Information Technology, Hyderabad
Majumdar, Anshuman	International Institute of Information Technology, Hyderabad
Jatavallabhula, Krishna Murthy	International Institute of Information Technology Hyderabad
Krishna, Madhava	IIIT Hyderabad
18:06-18:09	ThFTS2.3
<i>Fusing Joint Measurements and Visual Features for In-Hand Object Pose Estimation</i> , N/A.	
Pfanne, Martin	DLR German Aerospace Center
Chalon, Maxime	German Aerospace Center (DLR)
Stulp, Freek	DLR - Deutsches Zentrum Für Luft Und Raumfahrt E.V
Albu-Schäffer, Alin	DLR - German Aerospace Center
18:09-18:12	ThFTS2.4
<i>Real-World Multi-Object, Multi-Grasp Detection</i> , N/A.	
Chu, Fu-Jen	University of Michigan
Xu, Ruinian	Georgia Institute of Technology
Vela, Patricio	Georgia Institute of Technology
18:12-18:15	ThFTS2.5
<i>Extraction of Physically Plausible Support Relations to Predict and Validate Manipulation Action Effects</i> , N/A.	
Kartmann, Rainer	Karlsruhe Institute of Technology
Paus, Fabian	Karlsruhe Institute of Technology (KIT)
Grotz, Markus	Karlsruhe Institute of Technology (KIT)
Asfour, Tamim	Karlsruhe Institute of Technology (KIT)
18:15-18:18	ThFTS2.6
<i>Towards a Context Enhanced Framework for Multi Object Tracking in Human Robot Collaboration</i> , pp. 8435-8442.	
Akkaladevi, Sharath Chandra	Profactor GmbH
Plasch, Matthias	PROFACTOR
Eitzinger, Christian	Profactor GmbH
Pichler, Andreas	Profactor Produktionsforschung GmbH
Rinner, Bernhard	Klagenfurt University
18:18-18:21	ThFTS2.7
<i>Lane Marking Quality Assessment for Autonomous Driving</i> , pp. 8443-8448.	
Li, Binbin	Texas A&M University
Song, Dezhen	Texas A&M University
Li, Haifeng	Civil Aviation University of China
Pike, Adam	Texas A&M Transportation Institute
Carlson, Paul	Road Infrastructure Inc
18:21-18:24	ThFTS2.8
<i>Real-Time 3D Reconstruction Using a Combination of Point-Based and Volumetric Fusion</i> , pp. 8449-8455.	
Xia, Zhengyu	Illinois Institute of Technology
Kim, Joohee	Illinois Institute of Technology
Park, Young Soo	Argonne National Laboratory

ThFTS3	Room 1.L2
Motion and Path Planning for UAVs (Regular session)	
Co-Chair: Verdoja, Francesco	Aalto University
18:00-18:03	ThFTS3.1
<i>P-CAP: Pre-Computed Alternative Paths to Enable Aggressive Aerial Maneuvers in Cluttered Environments</i> , pp. 8456-8463.	
Zhang, Ji	Carnegie Mellon University
Gupta chadha, Rushat	Near Earth Autonomy
Velivela, Vivek	Carnegie Mellon University
Singh, Sanjiv	Carnegie Mellon University
18:03-18:06	ThFTS3.2
<i>Motion Planning for a Small Aerobatic Fixed-Wing Unmanned Aerial Vehicle</i> , pp. 8464-8470.	
Levin, Joshua Max	McGill University
Paranjape, Aditya Avinash	Imperial College London
Nahon, Meyer	McGill University
18:06-18:09	ThFTS3.3
<i>First Experimental Results on Motion Planning for Transportation in Aerial Long-Reach Manipulators with Two Arms</i> , pp. 8471-8477.	
Caballero, Alvaro	University of Seville
Suarez, Alejandro	University of Seville
Real, Fran	University of Seville
Vega, Victor M.	University of Seville
Béjar, Manuel	University Pablo De Olavide (Seville, Spain)
Rodriguez Castaño, Angel	University of Seville
Ollero, Anibal	University of Seville
18:09-18:12	ThFTS3.4
<i>Sparse 3D Topological Graphs for Micro-Aerial Vehicle Planning</i> , pp. 8478-8485.	
Oleynikova, Helen	ETH Zürich
Taylor, Zachary Jeremy	ETH Zürich
Sieglwart, Roland	ETH Zurich
Nieto, Juan	ETH Zürich
18:12-18:15	ThFTS3.5
<i>Motion Planning for a UAV with a Straight or Kinked Tether</i> , pp. 8486-8492.	
Xiao, Xuesu	Texas A&M University
Dufek, Jan	Texas A&M University
Suhail, Mohamed	Texas A&M University
Murphy, Robin	Texas A&M
18:15-18:18	ThFTS3.6
<i>Persistent Monitoring with Refueling on a Terrain Using a Team of Aerial and Ground Robots</i> , pp. 8493-8498.	
Maini, Parikshit	Indraprastha Institute of Information Technology, Delhi
Yu, Kevin	Virginia Tech
Pb, Sujit	Indraprastha Institute of Information Technology Delhi
Tokekar, Pratap	Virginia Tech
18:18-18:21	ThFTS3.7
<i>A Mobility Model Based on Improved Artificial Potential Fields for Swarms of UAVs</i> , pp. 8499-8504.	
Falomir, Ema	LaBRI Bordeaux Computer Science Research Laboratory, University
Chaumette, Serge	LaBRI, Bordeaux Computer Science Research Laboratory, University

Guerrini, Gilles	THALES DMS France
18:21-18:24	ThFTS3.8
<i>UAV/UGV Search and Capture of Goal-Oriented Uncertain Targets</i> , pp. 8505-8512.	
Sinay, Mor	Bar Ilan University
Agmon, Noa	Bar Ilan University
Maksimov, Oleg	Bar Ilan University
Levy, Guy	Bar Ilan
Bitan, Moshe	Bar Ilan University
Kraus, Sarit	Bar-Ilan University
ThFTS4	Room 2.L2
Control VI (Regular session)	
Chair: Gifftthaler, Markus	Swiss Federal Institute of Technology (ETH) Zurich, Switzerland
Co-Chair: Robuffo Giordano, Paolo	Centre National De La Recherche Scientifique (CNRS)
18:00-18:03	ThFTS4.1
<i>Lightweight Collision Avoidance for Resource-Constrained Robots</i> , pp. 8513-8518.	
Shahriari, Mohammadali	University of Guelph
Svogor, Ivan	Montreal Polytechnic
St-Onge, David	Ecole Polytechnique De Montreal
Beltrame, Giovanni	Ecole Polytechnique De Montreal
18:03-18:06	ThFTS4.2
<i>Control of Musculoskeletal Systems Using Learned Dynamics Models</i> , N/A.	
Buechler, Dieter	Max Planck Institute for Intelligent Systems Tübingen
Calandra, Roberto	University of California Berkeley
Schölkopf, Bernhard	Max Planck Institute for Intelligent Systems
Peters, Jan	Technische Universität Darmstadt
18:06-18:09	ThFTS4.3
<i>A Topological Approach to Workspace and Motion Planning for a Cable-Controlled Robot in Cluttered Environments</i> , N/A.	
Wang, Xiaolong	Lehigh University
Bhattacharya, Subhrajit	Lehigh University
18:09-18:12	ThFTS4.4
<i>An Improved Formulation for Model Predictive Control of Legged Robots for Gait Planning and Feedback Control</i> , pp. 8535-8542.	
Yuan, Kai	University of Edinburgh
Li, Zhibin	University of Edinburgh
18:12-18:15	ThFTS4.5
<i>Cable-Driven Actuation for Highly Dynamic Robotic Systems</i> , pp. 8543-8550.	
Hwangbo, Jemin	Swiss Federal Institute of Technology, Zurich
Tsounis, Vassilios	Swiss Federal Institute of Technology in Zurich
Kolvenbach, Hendrik	ETHZ
Hutter, Marco	ETH Zurich
18:15-18:18	ThFTS4.6
<i>Disturbance Observer Based Hovering Control of Quadrotor Tail-Sitter VTOL UAVs Using H-Infinity Synthesis</i> , N/A.	
Lyu, Ximin	Hong Kong University of Science and Technology
Zhou, Jinni	Hong Kong University of Science

	and Technology	
Gu, Haowei	Hong Kong University of Science and Technology	
Li, Zexiang	Hong Kong University of Science and Technology	
Shen, Shaojie	Hong Kong University of Science and Technology	
Zhang, Fu	University of Hong Kong	
18:18-18:21	ThFTS4.7	
<i>A Control Architecture with Online Predictive Planning for Position and Torque Controlled Walking of Humanoid Robots</i> , pp. 8559-8566.		
Dafarra, Stefano	Istituto Italiano Di Tecnologia	
Nava, Gabriele	Istituto Italiano Di Tecnologia	
Charbonneau, Marie	Istituto Italiano Di Tecnologia	
Guedelha, Nuno	IIT	
Andrade Chavez, Francisco Javier	Istituto Italiano Di Tecnologia	
Traversaro, Silvio	Istituto Italiano Di Tecnologia	
Fiorio, Luca	Istituto Italiano Di Tecnologia	
Romano, Francesco	Istituto Italiano Di Tecnologia	
Nori, Francesco	DeepMind	
Metta, Giorgio	Istituto Italiano Di Tecnologia (IIT)	
Pucci, Daniele	Italian Institute of Technology	
ThFTS5	Room 2.R3	
Human-Centered Robotics (Regular session)		
Chair: Tzovaras, Dimitrios	Centre for Research and Technology Hellas	
Co-Chair: Reinoso, Oscar	Miguel Hernandez University	
18:00-18:03	ThFTS5.1	
<i>Proactive Robot Assistants for Freeform Collaborative Tasks through Multimodal Recognition of Generic Subtasks</i> , pp. 8567-8573.		
Brooks, Connor	University of Colorado Boulder	
Atreya, Madhur	University of Colorado Boulder	
Szafir, Daniel J.	University of Colorado Boulder	
18:03-18:06	ThFTS5.2	
<i>Virtual Borders: Accurate Definition of a Mobile Robot's Workspace Using Augmented Reality</i> , pp. 8574-8581.		
Sprute, Dennis	Bielefeld University of Applied Sciences	
Tönnies, Klaus	Otto-Von-Guericke University Magdeburg	
König, Matthias	Bielefeld University of Applied Sciences	
18:06-18:09	ThFTS5.3	
<i>Multi-Modal Robot Apprenticeship: Imitation Learning Using Linearly Decayed DMP+ in a Human-Robot Dialogue System</i> , pp. 8582-8588.		
Wu, Yan	A*STAR Institute for Infocomm Research	
Wang, Ruohan	Imperial College London	
D'Haro, Luis Fernando	Institute for Infocomm Research, A*STAR, Singapore	
Banchs, Rafael E	Institute for Infocomm Research	
Tee, Keng Peng	Institute for Infocomm Research	
18:09-18:12	ThFTS5.4	
<i>A Transient-Goal Driven Communication-Aware Navigation Strategy for Large Human-Populated Environments</i> , pp. 8589-8596.		
K. Narayanan, Vishnu	ATR	

Miyashita, Takahiro	ATR	
Horikawa, Yukiko	ATR	
Hagita, Norihiro	ATR	
18:12-18:15	ThFTS5.5	
<i>Walking Assistance and Resistance of Walking Motion by Trunk and Pelvis Motion Assist</i> , pp. 8597-8602.		
Hashimoto, Kotaro	Hokkaido University	
Tanaka, Takayuki	Hokkaido University	
Kusaka, Takashi	Hokkaido University	
18:15-18:18	ThFTS5.6	
<i>Optimizing Contextual Ergonomics Models in Human-Robot Interaction</i> , pp. 8603-8608.		
Gonzales Marin, Antonio	Robotics and Mechatronics Center (DLR)	
S. Shrorijeh, Mohammad	Rice University	
Galibarov, Pavel	ABT	
Damsgaard, Michael	AnyBody Technology	
Fritzsche, Lars	IMK Automotive	
Stulp, Freek	DLR - Deutsches Zentrum Für Luft Und Raumfahrt E.V	
18:18-18:21	ThFTS5.7	
<i>Drivers' Manoeuvre Prediction for Safe HRI</i> , pp. 8609-8614.		
Lopez Pulgarin, Erwin Jose	University of Bristol	
Herrmann, Guido	University of Bristol	
Leonards, Ute	University of Bristol	
18:21-18:24	ThFTS5.8	
<i>Human Gaze Following for Human-Robot Interaction</i> , pp. 8615-8621.		
Saran, Akanksha	University of Texas at Austin	
Majumdar, Srinjoy	University of Texas at Austin	
Short, Elaine Schaertl	University of Texas at Austin	
Thomaz, Andrea Lockerd	University of Texas at Austin	
Niekum, Scott	University of Texas at Austin	
ThFTS6	Room 1.L3	
Motion and Path Planning IV (Regular session)		
Co-Chair: Cañas, José M.	Universidad Rey Juan Carlos	
18:00-18:03	ThFTS6.1	
<i>Incorporating Kinematic Properties into Fused Deposition Toolpath Optimization</i> , pp. 8622-8627.		
Lensgraf, Samuel	Tulane University	
Mettu, Ramgopal	Tulane University	
18:03-18:06	ThFTS6.2	
<i>A Natural Adaptive Control Law for Robot Manipulators</i> , pp. 8628-8635.		
Lee, Taeyoon	Seoul National University	
Kwon, Jaewoon	Seoul National University	
Park, Frank	Seoul National University	
18:06-18:09	ThFTS6.3	
<i>Reactive Magnetic-Field-Inspired Navigation Method for Robots in Unknown Convex 3D Environments</i> , N/A.		
Ataka, Ahmad	King's College London	
Lam, Hak-Keung	King's College London	
Althoefer, Kaspar	Queen Mary University of London	
18:09-18:12	ThFTS6.4	
<i>Map-Based Deep Imitation Learning for Obstacle Avoidance</i> , pp. 8644-8649.		
Liu, Yuejiang	Segway Robotics Inc	
Xu, An	Tsinghua University	

Chen, Zichong	Segway Robotics Inc
18:12-18:15	ThFTS6.5
<i>Multi-World Motion Planning, N/A.</i>	
Davis, Bobby	University of Minnesota
Sohre, Nick	University of Minnesota
Guy, Stephen J.	University of Minnesota - Twin Cities
18:15-18:18	ThFTS6.6
<i>Wireframe Mapping for Resource-Constrained Robots, pp. 8658-8665.</i>	
Caccavale, Adam	Stanford University
Schwager, Mac	Stanford University
18:18-18:21	ThFTS6.7
<i>Accelerating Goal-Directed Reinforcement Learning by Model Characterization, pp. 8666-8673.</i>	
Debnath, Shoubhik	NVIDIA
Sukhatme, Gaurav	University of Southern California
Liu, Lantao	Indiana University
18:21-18:24	ThFTS6.8
<i>Improving Trajectory Optimization Using a Roadmap Framework, pp. 8674-8681.</i>	
Dai, Siyu	Massachusetts Institute of Technology
Orton, Matthew	Massachusetts Institute of Technology
Schaffert, Shawn	Massachusetts Institute of Technology
Hofmann, Andreas	MIT
Williams, Brian	MIT
ThFTS7	Room 2.L3
Bioinspired Robotics IV (Regular session)	
Chair: Dieber, Bernhard	Joanneum Research
Co-Chair: Pallottino, Lucia	Università Di Pisa
18:00-18:03	ThFTS7.1
<i>PH Model-Based Shape Reconstruction of Heterogeneous Continuum Closed Loop Kinematic Chain: An Application to Skipping Rope, pp. 8682-8688.</i>	
Singh, Inderjeet	CRISTAL, CNRS UMR 9189, University of Lille1
Amara, Yacine	Ecole Militaire Polytechnique
Lakhal, Othman	University Lille1
Achille, Melingui	University of Lille1, Polytech' Lille, LAGIS Laboratory
Merzouki, Rochdi	CRISTAL, CNRS UMR 9189, University of Lille1
18:03-18:06	ThFTS7.2
<i>Optimal Feedback Control Based on Analytical Linear Models Extracted from Neural Networks Trained for Nonlinear Systems, pp. 8689-8694.</i>	
Duan, Yu	Osaka University
Ikemoto, Shuhei	Osaka University
Hosoda, Koh	Osaka University
18:06-18:09	ThFTS7.3
<i>Learning to Grasp by Extending the Peri-Personal Space Graph, pp. 8695-8700.</i>	
Juett, Jonathan	University of Michigan at Ann Arbor
Kuipers, Benjamin	University of Michigan
18:09-18:12	ThFTS7.4
<i>Impedance Control of a High Performance Twisted-Coiled</i>	

Polymer Actuator, pp. 8701-8706.

Luong, Anh Tuan	Sungkyunkwan University
Moon, Hyungpil	Sungkyunkwan University
Seo, Sungwon	SungKyunKwan Univ
Kim, Youngeun	Sungkyunkwan University
Yang, Sang Yul	Sungkyunkwan University
Cho, Kyeong Ho	SungKyunKwan University
Choi, Hyouk Ryeol	Sungkyunkwan University
Koo, Ja Choon	Sungkyunkwan University
Park, Jae Hyeong	Sungkwunkwan University
Kim, Kihyeon	Sungkyunkwan University

18:12-18:15 ThFTS7.5

Jumping Motion Generation of a Humanoid Robot Utilizing Human-Like Joint Elasticity, pp. 8707-8714.

Otani, Takuya	Waseda University
Hashimoto, Kenji	Meiji University
Ueta, Hiroki	Waseda University
Sakaguchi, Masanori	Waseda University
Kawakami, Yasuo	Waseda University
Lim, Hun-ok	Kanagawa University
Takanishi, Atsuo	Waseda University

18:15-18:18 ThFTS7.6

Ostraciiform Underwater Robot with Segmented Caudal Fin, N/A.

Zhang, Runzhi	The University of Hong Kong
Shen, Zhong	The University of Hong Kong
Wang, Zheng	The University of Hong Kong

18:18-18:21 ThFTS7.7

Secure Data Recording and Bio-Inspired Functional Integrity for Intelligent Robots, pp. 8723-8728.

Taurer, Sebastian	JOANNEUM RESEARCH Forschungsgesellschaft
Dieber, Bernhard	Joanneum Research
Schartner, Peter	Alpen-Adria Universität Klagenfurt

ThFTS8 Room 2.R1

Haptics (Regular session)

Chair: Khalil, Islam S.M.	German University in Cairo
Co-Chair: Ferre, Manuel	Universidad Politecnica De Madrid

18:00-18:03 ThFTS8.1

A Wearable 3-Axis Tactile Sensor for Human Fingertips, N/A.

Kristanto, Harris	Waseda University
Schmitz, Alexander	Waseda University
Sathe, Prathamesh	Waseda University
Tomo, Tito Pradhono	Waseda University
Somlor, Sophon	Waseda University
Sugano, Shigeki	Waseda University

18:03-18:06 ThFTS8.2

Rendering of Virtual Volumetric Shapes Using an Electromagnetic-Based Haptic Interface, pp. 8737-8742.

Adel, Alaa	German University in Cairo
Micheal, Mina	German University in Cairo
Abou Seif, Mohamed	German University in Cairo
Abdennadher, Slim	German University in Cairo
Khalil, Islam S.M.	German University in Cairo

18:06-18:09 ThFTS8.3

ErgoTac: A Tactile Feedback Interface for Improving Human

Ergonomics in Workplaces, N/A.

Kim, Wansoo	Istituto Italiano Di Tecnologia
Lorenzini, Marta	Istituto Italiano Di Tecnologia
Kapicioglu, Kagan	Bahçeşehir University
Ajoudani, Arash	Istituto Italiano Di Tecnologia

18:09-18:12 ThFTS8.4
Master-Slave Coordination Using Virtual Constraints for a Redundant Dual-Arm Haptic Interface, pp. 8751-8757.

Ghazaei Ardakani, M. Mahdi	Istituto Italiano Di Tecnologia (IIT)
Karlsson, Martin	Lund University
Nilsson, Klas	Lund University
Robertsson, Anders	LTH, Lund University
Johansson, Rolf	Lund University

18:12-18:15 ThFTS8.5
Gaussian Process Dynamic Programming for Optimizing Ungrounded Haptic Guidance, pp. 8758-8764.

Walker, Julie M.	Stanford University
Okamura, Allison M.	Stanford University
Kochenderfer, Mykel	Stanford University

18:15-18:18 ThFTS8.6
A Novel Input Device for Robotic Prosthetic Hand : Design and Preliminary Results, pp. 8765-8770.

Kim, Young-Jin	University of Science and Technology, Korea
Lee, Dong-Hyuk	Korea Institute of Industrial Technology (KITECH)
Park, Hyeonjun	Seoul National University
Park, Jae-Han	Korea Institute of Industrial Technology
Bae, Ji-Hun	Korea Institute of Industrial Technology

18:18-18:21 ThFTS8.7
Combining Wearable Haptics and Augmented Reality: User Evaluation Using an External Camera and the Microsoft HoloLens, N/A.

Meli, Leonardo	University of Siena
Pacchierotti, Claudio	Centre National De La Recherche Scientifique (CNRS)
Salvietti, Gionata	University of Siena
Chinello, Francesco	Aarhus University
Maisto, Maurizio	Dipartimento Di Ingegneria Informatica, Automatica E Gestionale,
De Luca, Alessandro	Sapienza University of Rome
Prattichizzo, Domenico	University of Siena

18:21-18:24 ThFTS8.8
Continuous State-Action-Observation POMDPs for Trajectory Planning with Bayesian Optimisation, pp. 8779-8786.

Morere, Philippe	University of Sydney
Marchant, Roman	University of Sydney
Ramos, Fabio	University of Sydney

ThFTS9 Room 4.L1
Agriculture Robotics III (Regular session)

Chair: Berns, Karsten	University of Kaiserslautern
Co-Chair: Misimi, Ekrem	SINTEF Ocean

18:00-18:03 ThFTS9.1
Super-High-Purity Seed Sorter Using Low-Latency Image Recognition Based on Deep Learning, N/A.

Heo, Young Jin	POSTECH
----------------	---------

Kim, Se Jin	POSTECH
Kim, Dayeon	POSTECH
Lee, Keondo	POSTECH, Mechanical Engineering
Chung, Wan Kyun	POSTECH

18:03-18:06 ThFTS9.2
Crop Row Detection on Tiny Plants with the Pattern Hough Transform, N/A.

Winterhalter, Wera	University of Freiburg
Fleckenstein, Freya Veronika	University of Freiburg
Dornhege, Christian	University of Freiburg
Burgard, Wolfram	University of Freiburg

18:06-18:09 ThFTS9.3
3D Soil Compaction Mapping through Kriging-Based Exploration with a Mobile Robot, N/A.

Pulido Fentanes, Jaime	University of Lincoln
Gould, Iain	University of Lincoln
Duckett, Tom	University of Lincoln
Pearson, Simon	University of Lincoln
Cielniak, Grzegorz	University of Lincoln

18:09-18:12 ThFTS9.4
Achieving Robotically Peeled Lettuce, N/A.

Hughes, Josie	University of Cambridge
Scimeca, Luca	University of Cambridge
Ifrim, Ioana	University of Cambridge
Maiolino, Perla	University of Cambridge
Iida, Fumiya	University of Cambridge

18:12-18:15 ThFTS9.5
Robotics for Sugarcane Cultivation: Analysis of Billet Quality Using Computer Vision, N/A.

Alencastre-Miranda, Moises	Massachusetts Institute of Technology (MIT)
Davidson, Joseph	Massachusetts Institute of Technology
Johnson, Richard M.	United States Department of Agriculture – Agricultural Research
Waguespack, Herman	American Sugar Cane League
Krebs, Hermano Igo	MIT

18:15-18:18 ThFTS9.6
Robust Long-Term Registration of UAV Images of Crop Fields for Precision Agriculture, N/A.

Chebrolu, Nived	University of Bonn
Läbe, Thomas	University of Bonn
Stachniss, Cyrill	University of Bonn

18:18-18:21 ThFTS9.7
Fully Convolutional Networks with Sequential Information for Robust Crop and Weed Detection in Precision Farming, N/A.

Lottes, Philipp	University of Bonn
Behley, Jens	University of Bonn
Milioto, Andres	University of Bonn
Stachniss, Cyrill	University of Bonn

Technical Program for Friday October 5, 2018

FrA1	Room 1.L2
WSFFD09 - Robotics for Logistics in Warehouses and Environments Shared with Humans, Part I (Workshop)	
Chair: Villani, Luigi	Univ. Napoli Federico II
09:00-11:00	FrA1.1
<i>Robotics for Logistics in Warehouses and Environments Shared with Humans*.</i>	
Villani, Luigi	Univ. Napoli Federico II
Magnusson, Martin	Örebro University
Prassler, Erwin	Bonn-Rhein-Sieg Univ. of Applied Sciences
Puljiz, David	Karlsruhe Institute of Technology
De la Riva, Jesús Julián	ITAINNOVA / Instituto Tecnológico de Aragón, Spain
Alfonso	
FrA2	Room 1.L3
TUFAM04 - Screw Theory for Robotics: A Practical Approach for Modern Robot Mechanics for Robotics: A Practical Approach for Modern Robot Mechanics, Part I (Tutorial)	
Chair: Pardos-Gotor, Jose M.	Universidad Carlos III De Madrid
09:00-11:00	FrA2.1
<i>SCREW THEORY for ROBOTICS - a Practical Approach for Modern Robot Mechanics*.</i>	
Pardos-Gotor, Jose M.	Universidad Carlos III de Madrid
FrA3	Room 4.L3
WSFFD12 - Soft Robotic Modeling and Control: Bringing Together Articulated Soft Robots and Soft-Bodied Robots, Part I (Workshop)	
Chair: Katzschmann, Robert	Massachusetts Institute of Technology
Kevin	
09:00-11:00	FrA3.1
<i>Soft Robotic Modeling and Control: Bringing Together Articulated Soft Robots and Soft-Bodied Robots*.</i>	
Katzschmann, Robert Kevin	Massachusetts Institute of Technology
Della Santina, Cosimo	Centro E. Piaggio
Rus, Daniela	MIT
FrA4	Room 1.R3
WSFFD13 - Shape Changing Robotic Structures and Interfaces, Part I (Workshop)	
Chair: Wurdemann, Helge	University College London
Arne	
09:00-11:00	FrA4.1
<i>Workshop on Shape Changing Robotic Structures and Interfaces*.</i>	
Wurdemann, Helge Arne	University College London
Roudaut, Anne	University of Bristol
Dogramadzi, Sanja	University of the West of England
Paik, Jamie	Ecole Polytechnique Federale de Lausanne
Girouard, Audrey	Carleton University
Althoefer, Kaspar	Queen Mary University of London
Ho, Van	Japan Advanced Institute of Science and Technology
FrA5	Room 2.L2

WSFFD15 - Experimental Robotic Grasping and Manipulation: Benchmarks, Datasets, and Competitions, Part I (Workshop)	
Chair: Sun, Yu	University of South Florida
09:00-11:00	FrA5.1
<i>Experimental Robotic Grasping and Manipulation -- Benchmarks, Datasets, and Competitions*.</i>	
Sun, Yu	University of South Florida
Moon, Hyungpil	Sungkyunkwan University
Falco, Joe	NIST
Calli, Berk	Worcester Institute of Technology
FrA6	Auditorium
WSFFD04 - Machine Learning in Robot Motion Planning, Part I (Workshop)	
Chair: Choudhury, Sanjiban	University of Washington
09:00-11:00	FrA6.1
<i>Machine Learning in Robot Motion Planning*.</i>	
Choudhury, Sanjiban	University of Washington
Dey, Debadeepta	Microsoft
Srinivasa, Siddhartha	University of Washington
Toussaint, Marc	University of Stuttgart
Boots, Byron	Georgia Institute of Technology
FrA7	Room 1.L5
WSFFD02 - Vision-Based Drones: What's Next? Part I (Workshop)	
Chair: Loianno, Giuseppe	New York University
09:00-11:00	FrA7.1
<i>Vision-Based Drones: What's Next?*</i>	
Loianno, Giuseppe	New York University
Scaramuzza, Davide	University of Zurich
Kumar, Vijay	University of Pennsylvania
FrA8	Room 4.R1
WSFAM20 - Human-Robot Cooperation and Collaboration in Manipulation: Advancements and Challenges, Part I (Workshop)	
Chair: Ortenzi, Valerio	Queensland University of Technology / ACRV
09:00-11:00	FrA8.1
<i>Human-Robot Cooperation and Collaboration in Manipulation: Advancements and Challenges*.</i>	
Ortenzi, Valerio	Queensland University of Technology / ACRV
Controzzi, Marco	Scuola Superiore Sant'Anna
Marturi, Naresh	University of Birmingham
Bekiroglu, Yasemin	Vicarious AI
Corke, Peter	Queensland University of Technology
Cherubini, Andrea	LIRMM - Universite de Montpellier CNRS
FrA9	Room 2.R1
WSFFD14 - Development of Agile Robots, Part I (Workshop)	
Chair: Kashiri, Navvab	Istituto Italiano Di Tecnologia
09:00-11:00	FrA9.1
<i>Development of Agile Robots*.</i>	
Kashiri, Navvab	Istituto Italiano di Tecnologia

Malzahn, Jörn
Tsagarakis, Nikos

Istituto Italiano di Tecnologia
Istituto Italiano di Tecnologia

FrA10	Room 4.L4
WSFAM19 - New Horizons for Underwater Intervention Missions: From Current Technologies to Future Applications, Part I (Workshop)	
Chair: Sanz, Pedro J	Jaume I
09:00-11:00	FrA10.1
<i>New Horizons for Underwater Intervention Missions: From Current Technologies to Future Applications*.</i>	
Sanz, Pedro J	Jaume I
Khatib, Oussama	Stanford University
Choi, Hyun-Taek	Korea Institute of Oceans Science and Technology
Kawamura, Sadao	Ritsumeikan University
Ridao, Pere	Universitat de Girona
FrA11	Room 4.R3
WSFAM25 - Robotic Co-Workers 4.0: Human Safety and Comfort in Human-Robot Interactive Social Environments, Part I (Workshop)	
Chair: Ngo, Trung-Dung	University of Prince Edward Island
09:00-11:00	FrA11.1
<i>Robotic Co-Workers 4.0: Human Safety and Comfort in Human-Robot Interactive Social Environments*.</i>	
Ngo, Trung-Dung	University of Prince Edward Island
Alami, Rachid	CNRS
Nejat, Goldie	University of Toronto
Ou, Yongsheng	Chinese Academy of Sciences
Kanda, Takayuki	Kyoto University
Truong, Xuan-Tung	Le Quy Don Technical University
FrA12	Room 4.R5
WSFFD07 - Autonomous Dialogue Technologies in Symbiotic Human-Robot Interaction, Part I (Workshop)	
Chair: Ishiguro, Hiroshi	Osaka University
09:00-11:00	FrA12.1
<i>Autonomous Dialogue Technologies in Symbiotic Human-Robot Interaction*.</i>	
Ishiguro, Hiroshi	Osaka University
Kawahara, Tatsuya	Kyoto Univ.
Nakamura, Yutaka	Osaka university
FrA13	Room 2.L5 KUKA
WSFFD01 - 2nd Workshop on Multi-Robot Perception-Driven Control and Planning, Part I (Workshop)	
Chair: Alonso-Mora, Javier	Delft University of Technology
09:00-11:00	FrA13.1
<i>Second Workshop on Multi-Robot Perception-Driven Control and Planning*.</i>	
Alonso-Mora, Javier	Delft University of Technology
Montijano, Eduardo	Universidad de Zaragoza
Rus, Daniela	MIT
Schwager, Mac	Stanford University
FrA14	Room 1.R4

TUFFD01 - Aerial Robotic Manipulation, Part I (Tutorial)	
Chair: Heredia, Guillermo	University of Seville
09:00-11:00	FrA14.1
<i>Aerial Robotic Manipulation*.</i>	
Heredia, Guillermo	University of Seville
FrA15	Room 2.R4
WSFFD11 - Continuum and Soft Robots (CSR) for Medical Interventions: Modelling, Fabrication, and Control, Part I (Workshop)	
Chair: Rabenoroso, Kanty	Univ. Bourgogne Franche-Comté, CNRS
09:00-11:00	FrA15.1
<i>Continuum and Soft Robots (CSR) for Medical Interventions: Modeling, Fabrication, and Control*.</i>	
Rabenoroso, Kanty	Univ. Bourgogne Franche-Comté, CNRS
Burgner-Kahrs, Jessica	Leibniz Universität Hannover
Cianchetti, Matteo	Scuola Superiore Sant'Anna
Rucker, Caleb	University of Tennessee
FrA16	Room 1.R5
WSFFD06 - Collaboratively Working towards Ontology-Based Standards for Robotics and Automation, Part I (Workshop)	
Chair: Bermejo, Julita	Universidad Politecnica De Madrid
09:00-11:00	FrA16.1
<i>Collaboratively Working towards Ontology-Based Standards for Robotics and Automation*.</i>	
Bermejo, Julita	Universidad Politecnica de Madrid
Chibani, Abdelghani	Lissi Lab Paris EST University
Gonçalves, Paulo	Instituto Politecnico de Castelo Branco
Li, Howard	University of New Brunswick
Jordan, Sara Rene	Virginia Tech
Olivares, Alberto	Universidad de Castilla-La Mancha
Olszewska, Joanna Isabelle	University of Gloucestershire, United Kingdom
Prestes, Edson	UFRGS
Rama Fiorini, Sandro	Université Paris-Est Creteil
Sanz, Ricardo	Universidad Politecnica de Madrid
FrA17	Room 1.L1
WSFAM21 - Hand-Shaking Advanced Control in Marine Robotics Applications, Part I (Workshop)	
Chair: Zereik, Enrica	CNR - National Research Council
09:00-11:00	FrA17.1
<i>Hand-Shaking Advanced Control in Marine Robotics Applications*.</i>	
Zereik, Enrica	CNR - National Research Council
Bonsignorio, Fabio Paolo	Heron Robots srl and The Biorobotics Insitute Scuola Superiore S. Anna
FrA18	Room 2.L3
WSFFD05 - Robots for Assisted Living, Part I (Workshop)	
Chair: Calinon, Sylvain	Idiap Research Institute

09:00-11:00	FrA18.1
<i>Robots for Assisted Living*</i> .	
Calinon, Sylvain	Idiap Research Institute
Dogramadzi, Sanja	University of the West of England
Torras, Carme	CSIC - UPC
Shibata, Tomohiro	Kyushu institute of technology
Demiris, Yiannis	Imperial College London
FrA19	Room 4.R4
WSFFD03 - ImPACT Tough Robotics Challenge: A National Project of Disaster Robotics Aiming at Social Innovation in Safety and Security, Part I (Workshop)	
Chair: Tadokoro, Satoshi	Tohoku University
09:00-11:00	FrA19.1
<i>ImPACT Tough Robotics Challenge - a National Project of Disaster Robotics Aiming at Social Innovation in Safety and Security*</i> .	
Tadokoro, Satoshi	Tohoku University
Matsuno, Fumitoshi	Kyoto University
FrA20	Room 2.R3
WSFAM17 - Workshop on Crossmodal Learning for Intelligent Robotics, Part I (Workshop)	
Chair: Parisi, German Ignacio	University of Hamburg
09:00-11:00	FrA20.1
<i>Workshop on Crossmodal Learning for Intelligent Robotics*</i> .	
Parisi, German Ignacio	University of Hamburg
Barros, Pablo	University of Hamburg
Jirak, Doreen	University of Hamburg
Tani, Jun	Okinawa Institute of Science and Technology
Choe, Yoonsuck	Texas A and M University
FrA21	Room 4.R2
TUFAM03 - Robot Audition: Open Source Software HARK, Part I (Tutorial)	
Chair: Nakadai, Kazuhiro	Honda Research Inst. Japan Co., Ltd
09:00-11:00	FrA21.1
<i>Tutorial on Robot Audition Open Source Software HARK*</i> .	
Nakadai, Kazuhiro	Honda Research Inst. Japan Co., Ltd.
Okuno, Hiroshi G.	Waseda University
Kumon, Makoto	Graduate School of Science and Technology, Kumamoto
Ince, Gokhan	Istanbul Technical University
Sugiyama, Osamu	Kyoto University Hospital
Itoyama, Katsutoshi	Kyoto University
Kojima, Ryosuke	Kyoto University
Suzuki, Reiji	Nagoya University
Hoshiba, Kotaro	Kanagawa University
FrA22	Room 2.R2
TUFFD02 - Collaborative Robotics Toolkit (CRTK) and Open Platforms for Medical Robotics Research, Part I (Tutorial)	
Chair: Kazanzides, Peter	Johns Hopkins University
09:00-11:00	FrA22.1
<i>Collaborative Robotics Toolkit (CRTK) and Open Platforms for</i>	

*Medical Robotics Research**.

Kazanzides, Peter	Johns Hopkins University
Hannaford, Blake	University of Washington
Fischer, Gregory Scott	Worcester Polytechnic Institute, WPI

FrA23	Room 4.L1
WSFFD08 - Semantic Policy and Action Representations for Autonomous Robots, Part I (Workshop)	
Chair: Aksoy, Eren Erdal	Halmstad University

09:00-11:00	FrA23.1
<i>Semantic Policy and Action Representations for Autonomous Robots*</i> .	

Aksoy, Eren Erdal	Halmstad University
Yang, Yezhou	Arizona State University
Ramirez-Amaro, Karinne	Institute for Cognitive Systems. Technische Universität München.
Dantam, Neil	Colorado School of Mines
Cheng, Gordon	Technical University of Munich

FrB1	Room 1.L2
WSFFD09 - Robotics for Logistics in Warehouses and Environments Shared with Humans, Part II (Workshop)	
Chair: Villani, Luigi	Univ. Napoli Federico II

11:30-13:30	FrB1.1
<i>Robotics for Logistics in Warehouses and Environments Shared with Humans*</i> .	

Villani, Luigi	Univ. Napoli Federico II
Magnusson, Martin	Örebro University
Prassler, Erwin	Bonn-Rhein-Sieg Univ. of Applied Sciences
Puljiz, David	Karlsruhe Institute of Technology
De la Riva, Jesús Julián Alfonso	ITAINNOVA / Instituto Tecnológico de Aragón, Spain

FrB2	Room 1.L3
TUFAM04 - Screw Theory for Robotics: A Practical Approach for Modern Robot Mechanics for Robotics: A Practical Approach for Modern Robot Mechanics, Part II (Tutorial)	
Chair: Pardos-Gotor, Jose M.	Universidad Carlos III De Madrid

11:30-13:30	FrB2.1
<i>SCREW THEORY for ROBOTICS - a Practical Approach for Modern Robot Mechanics*</i> .	
Pardos-Gotor, Jose M.	Universidad Carlos III de Madrid

FrB3	Room 4.L3
WSFFD12 - Soft Robotic Modeling and Control: Bringing Together Articulated Soft Robots and Soft-Bodied Robots, Part II (Workshop)	
Chair: Katzschnmann, Robert Kevin	Massachusetts Institute of Technology

11:30-13:30	FrB3.1
<i>Soft Robotic Modeling and Control: Bringing Together Articulated Soft Robots and Soft-Bodied Robots*</i> .	

Katzschnmann, Robert Kevin	Massachusetts Institute of Technology
Della Santina, Cosimo	Centro E. Piaggio
Rus, Daniela	MIT

FrB4	Room 1.R3
WSFFD13 - Shape Changing Robotic Structures and Interfaces, Part II (Workshop)	
Chair: Wurdemann, Helge Arne	University College London
11:30-13:30	FrB4.1
<i>Workshop on Shape Changing Robotic Structures and Interfaces*.</i>	
Wurdemann, Helge Arne	University College London
Roudaut, Anne	University of Bristol
Dogramadzi, Sanja	University of the West of England
Paik, Jamie	Ecole Polytechnique Federale de Lausanne
Girouard, Audrey	Carleton University
Althoefer, Kaspar	Queen Mary University of London
Ho, Van	Japan Advanced Institute of Science and Technology
FrB5	Room 2.L2
WSFFD15 - Experimental Robotic Grasping and Manipulation: Benchmarks, Datasets, and Competitions, Part II (Workshop)	
Chair: Sun, Yu	University of South Florida
11:30-13:30	FrB5.1
<i>Experimental Robotic Grasping and Manipulation -- Benchmarks, Datasets, and Competitions*.</i>	
Sun, Yu	University of South Florida
Moon, Hyungpil	Sungkyunkwan University
Falco, Joe	NIST
Calli, Berk	Worcester Institute of Technology
FrB6	Auditorium
WSFFD04 - Machine Learning in Robot Motion Planning, Part II (Workshop)	
Chair: Choudhury, Sanjiban	University of Washington
11:30-13:30	FrB6.1
<i>Machine Learning in Robot Motion Planning*.</i>	
Choudhury, Sanjiban	University of Washington
Dey, Debadeepta	Microsoft
Srinivasa, Siddhartha	University of Washington
Toussaint, Marc	University of Stuttgart
Boots, Byron	Georgia Institute of Technology
FrB7	Room 1.L5
WSFFD02 - Vision-Based Drones: What's Next? Part II (Workshop)	
Chair: Loianno, Giuseppe	New York University
11:30-13:30	FrB7.1
<i>Vision-Based Drones: What's Next?*</i> .	
Loianno, Giuseppe	New York University
Scaramuzza, Davide	University of Zurich
Kumar, Vijay	University of Pennsylvania
FrB8	Room 4.R1
WSFAM20 - Human-Robot Cooperation and Collaboration in Manipulation: Advancements and Challenges, Part II (Workshop)	
Chair: Ortenzi, Valerio	Queensland University of Technology / ACRV

11:30-13:30	FrB8.1
<i>Human-Robot Cooperation and Collaboration in Manipulation: Advancements and Challenges*.</i>	
Ortenzi, Valerio	Queensland University of Technology / ACRV
Controzzi, Marco	Scuola Superiore Sant'Anna
Marturi, Naresh	University of Birmingham
Bekiroglu, Yasemin	Vicarious AI
Corke, Peter	Queensland University of Technology
Cherubini, Andrea	LIRMM - Universite de Montpellier CNRS

FrB9	Room 2.R1
WSFFD14 - Development of Agile Robots, Part II (Workshop)	
Chair: Kashiri, Navvab	Istituto Italiano Di Tecnologia
11:30-13:30	FrB9.1
<i>Development of Agile Robots*.</i>	
Kashiri, Navvab	Istituto Italiano di Tecnologia
Malzahn, Jörn	Istituto Italiano di Tecnologia
Tsagarakis, Nikos	Istituto Italiano di Tecnologia

FrB10	Room 4.L4
WSFAM19 - New Horizons for Underwater Intervention Missions: From Current Technologies to Future Applications, Part II (Workshop)	
Chair: Sanz, Pedro J	Jaume I
11:30-13:30	FrB10.1
<i>New Horizons for Underwater Intervention Missions: From Current Technologies to Future Applications*.</i>	
Sanz, Pedro J	Jaume I
Khatib, Oussama	Stanford University
Choi, Hyun-Taek	Korea Institute of Oceans Science and Technology
Kawamura, Sadao	Ritsumeikan University
Ridao, Pere	Universitat de Girona

FrB11	Room 4.R3
WSFAM25 - Robotic Co-Workers 4.0: Human Safety and Comfort in Human-Robot Interactive Social Environments, Part II (Workshop)	
Chair: Ngo, Trung-Dung	University of Prince Edward Island
11:30-13:30	FrB11.1
<i>Robotic Co-Workers 4.0: Human Safety and Comfort in Human-Robot Interactive Social Environments*.</i>	
Ngo, Trung-Dung	University of Prince Edward Island
Alami, Rachid	CNRS
Nejat, Goldie	University of Toronto
Ou, Yongsheng	Chinese Academy of Sciences
Kanda, Takayuki	Kyoto University
Truong, Xuan-Tung	Le Quy Don Technical University

FrB12	Room 4.R5
WSFFD07 - Autonomous Dialogue Technologies in Symbiotic Human-Robot Interaction, Part II (Workshop)	
Chair: Ishiguro, Hiroshi	Osaka University
11:30-13:30	FrB12.1
<i>Autonomous Dialogue Technologies in Symbiotic Human-Robot</i>	

Interaction.*

Ishiguro, Hiroshi	Osaka University
Kawahara, Tatsuya	Kyoto Univ.
Nakamura, Yutaka	Osaka university

FrB13	Room 2.L5 KUKA
WSFFD01 - 2nd Workshop on Multi-Robot Perception-Driven Control and Planning, Part II (Workshop)	
Chair: Alonso-Mora, Javier	Delft University of Technology

11:30-13:30	FrB13.1
<i>Second Workshop on Multi-Robot Perception-Driven Control and Planning*.</i>	

Alonso-Mora, Javier	Delft University of Technology
Montijano, Eduardo	Universidad de Zaragoza
Rus, Daniela	MIT
Schwager, Mac	Stanford University

FrB14	Room 1.R4
TUFFD01 - Aerial Robotic Manipulation, Part II (Tutorial)	
Chair: Heredia, Guillermo	University of Seville

11:30-13:30	FrB14.1
<i>Aerial Robotic Manipulation*.</i>	
Heredia, Guillermo	University of Seville

FrB15	Room 2.R4
WSFFD11 - Continuum and Soft Robots (CSR) for Medical Interventions: Modelling, Fabrication, and Control, Part II (Workshop)	
Chair: Rabenorosoa, Kanty	Univ. Bourgogne Franche-Comté, CNRS

11:30-13:30	FrB15.1
<i>Continuum and Soft Robots (CSR) for Medical Interventions: Modeling, Fabrication, and Control*.</i>	

Rabenorosoa, Kanty	Univ. Bourgogne Franche-Comté, CNRS
Burgner-Kahrs, Jessica	Leibniz Universität Hannover
Cianchetti, Matteo	Scuola Superiore Sant'Anna
Rucker, Caleb	University of Tennessee

FrB16	Room 1.R5
WSFFD06 - Collaboratively Working towards Ontology-Based Standards for Robotics and Automation, Part II (Workshop)	
Chair: Bermejo, Julita	Universidad Politecnica De Madrid

11:30-13:30	FrB16.1
<i>Collaboratively Working towards Ontology-Based Standards for Robotics and Automation*.</i>	

Bermejo, Julita	Universidad Politecnica de Madrid
Chibani, Abdelghani	Lissi Lab Paris EST University
Gonçalves, Paulo	Instituto Politecnico de Castelo Branco
Li, Howard	University of New Brunswick
Jordan, Sara Rene	Virginia Tech
Olivares, Alberto	Universidad de Castilla-La Mancha
Olszewska, Joanna Isabelle	University of Gloucestershire, United Kingdom
Prestes, Edson	UFRGS
Rama Fiorini, Sandro	Université Paris-Est Creteil

Sanz, Ricardo	Universidad Politecnica de Madrid
---------------	-----------------------------------

FrB17	Room 1.L1
WSFAM21 - Hand-Shaking Advanced Control in Marine Robotics Applications, Part II (Workshop)	
Chair: Zereik, Enrica	CNR - National Research Council

11:30-13:30	FrB17.1
-------------	---------

<i>Hand-Shaking Advanced Control in Marine Robotics Applications*.</i>	
Zereik, Enrica	CNR - National Research Council
Bonsignorio, Fabio Paolo	Heron Robots srl and The Biorobotics Institute Scuola Superiore S. Anna

FrB18	Room 2.L3
WSFFD05 - Robots for Assisted Living, Part II (Workshop)	
Chair: Calinon, Sylvain	Idiap Research Institute

11:30-13:30	FrB18.1
-------------	---------

<i>Robots for Assisted Living*.</i>	
Calinon, Sylvain	Idiap Research Institute
Dogramadzi, Sanja	University of the West of England
Torras, Carme	CSIC - UPC
Shibata, Tomohiro	Kyushu institute of technology
Demiris, Yiannis	Imperial College London

FrB19	Room 4.R4
WSFFD03 - ImPACT Tough Robotics Challenge: A National Project of Disaster Robotics Aiming at Social Innovation in Safety and Security, Part II (Workshop)	
Chair: Tadokoro, Satoshi	Tohoku University

11:30-13:30	FrB19.1
-------------	---------

<i>ImPACT Tough Robotics Challenge - a National Project of Disaster Robotics Aiming at Social Innovation in Safety and Security*.</i>	
Tadokoro, Satoshi	Tohoku University
Matsuno, Fumitoshi	Kyoto University

FrB20	Room 2.R3
WSFAM17 - Workshop on Crossmodal Learning for Intelligent Robotics, Part II (Workshop)	
Chair: Parisi, German Ignacio	University of Hamburg

11:30-13:30	FrB20.1
-------------	---------

<i>Workshop on Crossmodal Learning for Intelligent Robotics*.</i>	
Parisi, German Ignacio	University of Hamburg
Barros, Pablo	University of Hamburg
Jirak, Doreen	University of Hamburg
Tani, Jun	Okinawa Institute of Science and Technology
Choe, Yoonsuck	Texas A and M University

FrB21	Room 4.R2
TUFAM03 - Robot Audition: Open Source Software HARK, Part II (Tutorial)	
Chair: Nakadai, Kazuhiro	Honda Research Inst. Japan Co., Ltd

11:30-13:30	FrB21.1
-------------	---------

Tutorial on Robot Audition Open Source Software HARK.*

Nakadai, Kazuhiro	Honda Research Inst. Japan Co., Ltd.
Okuno, Hiroshi G.	Waseda University
Kumon, Makoto	Graduate School of Science and Technology, Kumamoto
Ince, Gokhan	Istanbul Technical University
Sugiyama, Osamu	Kyoto University Hospital
Itoyama, Katsutoshi	Kyoto University
Kojima, Ryosuke	Kyoto University
Suzuki, Reiji	Nagoya University
Hoshiba, Kotaro	Kanagawa University

FrB22	Room 2.R2
TUFFD02 - Collaborative Robotics Toolkit (CRTK) and Open Platforms for Medical Robotics Research, Part II (Tutorial)	
Chair: Kazanzides, Peter	Johns Hopkins University

11:30-13:30 FrB22.1

Collaborative Robotics Toolkit (CRTK) and Open Platforms for Medical Robotics Research.*

Kazanzides, Peter	Johns Hopkins University
Hannaford, Blake	University of Washington
Fischer, Gregory Scott	Worcester Polytechnic Institute, WPI

FrB23	Room 4.L1
WSFFD08 - Semantic Policy and Action Representations for Autonomous Robots, Part II (Workshop)	
Chair: Aksoy, Eren Erdal	Halmstad University

11:30-13:30 FrB23.1

Semantic Policy and Action Representations for Autonomous Robots.*

Aksoy, Eren Erdal	Halmstad University
Yang, Yezhou	Arizona State University
Ramirez-Amaro, Karinne	Institute for Cognitive Systems. Technische Universität München.
Dantam, Neil	Colorado School of Mines
Cheng, Gordon	Technical University of Munich

FrC1	Room 1.L2
WSFFD09 - Robotics for Logistics in Warehouses and Environments Shared with Humans, Part III (Workshop)	
Chair: Villani, Luigi	Univ. Napoli Federico II

14:30-16:30 FrC1.1

Robotics for Logistics in Warehouses and Environments Shared with Humans.*

Villani, Luigi	Univ. Napoli Federico II
Magnusson, Martin	Örebro University
Prassler, Erwin	Bonn-Rhein-Sieg Univ. of Applied Sciences
Puljiz, David	Karlsruhe Institute of Technology
De la Riva, Jesús Julián Alfonso	ITAINNOVA / Instituto Tecnológico de Aragón, Spain

FrC2	Room 1.L3
WSFPM23 - Unconventional Sensing and Processing for Robotic Visual Perception (PM), Part I (Workshop)	
Chair: Sandamirskaya, Yulia	University and ETH Zurich

14:30-16:30 FrC2.1

Unconventional Sensing and Processing for Robotic Visual Perception.*

Sandamirskaya, Yulia	University and ETH Zurich
Martel, Julien	University of Zurich & ETH Zurich

FrC3	Room 4.L3
WSFFD12 - Soft Robotic Modeling and Control: Bringing Together Articulated Soft Robots and Soft-Bodied Robots, Part III (Workshop)	
Chair: Katzschmann, Robert Kevin	Massachusetts Institute of Technology

14:30-16:30 FrC3.1

Soft Robotic Modeling and Control: Bringing Together Articulated Soft Robots and Soft-Bodied Robots.*

Katzschmann, Robert Kevin	Massachusetts Institute of Technology
Della Santina, Cosimo	Centro E. Piaggio
Rus, Daniela	MIT

FrC4	Room 1.R3
WSFFD13 - Shape Changing Robotic Structures and Interfaces, Part III (Workshop)	
Chair: Wurdemann, Helge Arne	University College London

14:30-16:30 FrC4.1

Workshop on Shape Changing Robotic Structures and Interfaces.*

Wurdemann, Helge Arne	University College London
Roudaut, Anne	University of Bristol
Dogramadzi, Sanja	University of the West of England
Paik, Jamie	Ecole Polytechnique Federale de Lausanne
Girouard, Audrey	Carleton University
Althoefer, Kaspar	Queen Mary University of London
Ho, Van	Japan Advanced Institute of Science and Technology

FrC5	Room 2.L2
WSFFD15 - Experimental Robotic Grasping and Manipulation: Benchmarks, Datasets, and Competitions, Part III (Workshop)	
Chair: Sun, Yu	University of South Florida

14:30-16:30 FrC5.1

Experimental Robotic Grasping and Manipulation -- Benchmarks, Datasets, and Competitions.*

Sun, Yu	University of South Florida
Moon, Hyungpil	Sungkyunkwan University
Falco, Joe	NIST
Calli, Berk	Worcester Institute of Technology

FrC6	Auditorium
WSFFD04 - Machine Learning in Robot Motion Planning, Part III (Workshop)	
Chair: Choudhury, Sanjiban	University of Washington

14:30-16:30 FrC6.1

Machine Learning in Robot Motion Planning.*

Choudhury, Sanjiban	University of Washington
Dey, Debadeepta	Microsoft
Srinivasa, Siddhartha	University of Washington

Toussaint, Marc
Boots, Byron

University of Stuttgart
Georgia Institute of Technology

FrC7	Room 1.L5
WSFFD02 - Vision-Based Drones: What's Next? Part III (Workshop)	
Chair: Loianno, Giuseppe	New York University

14:30-16:30 FrC7.1

*Vision-Based Drones: What's Next?**

Loianno, Giuseppe
Scaramuzza, Davide
Kumar, Vijay

New York University
University of Zurich
University of Pennsylvania

FrC8	Room 4.R1
WSFPM24 - Automating Robot Experiments: Manipulation and Learning, Part I (Workshop)	
Chair: Kroemer, Oliver	Carnegie Mellon University

14:30-16:30 FrC8.1

*Automating Robot Experiments: Manipulation and Learning**

Kroemer, Oliver
Pinto, Lerrel Joseph
Muelling, Katharina

Carnegie Mellon University
Carnegie Mellon University
Carnegie Mellon University

FrC9	Room 2.R1
WSFFD14 - Development of Agile Robots, Part III (Workshop)	
Chair: Kashiri, Navvab	Istituto Italiano Di Tecnologia

14:30-16:30 FrC9.1

*Development of Agile Robots**

Kashiri, Navvab
Malzahn, Jörn
Tsagarakis, Nikos

Istituto Italiano di Tecnologia
Istituto Italiano di Tecnologia
Istituto Italiano di Tecnologia

FrC10	Room 4.L4
WSFPM26 - towards Intelligent Social Robots: From Naive Robots to Robot Sapiens, Part I (Workshop)	
Chair: Aly, Amir	Ritsumeikan University

14:30-16:30 FrC10.1

*Towards Intelligent Social Robots: From Naive Robots to Robot Sapiens**

Aly, Amir

Ritsumeikan University

FrC11	Room 4.R3
WSFAM18 - Robot Safety: Filling the Gap between Technology Offer and Industry Needs for a Fully Deployable Human Robot Collaboration, Part I (Workshop)	
Chair: Albert, Fabien	Airbus

14:30-16:30 FrC11.1

*Robot Safety: Filling the Gap between Technology Offer and Industry Needs, for a Fully Deployable Human Robot Collaboration**

Albert, Fabien
Cristalli, Cristina

Airbus
Loccioni Group - AEA

FrC12	Room 4.R5
WSFFD07 - Autonomous Dialogue Technologies in Symbiotic Human-Robot Interaction, Part III (Workshop)	
Chair: Ishiguro, Hiroshi	Osaka University

14:30-16:30 FrC12.1

*Autonomous Dialogue Technologies in Symbiotic Human-Robot Interaction**

Ishiguro, Hiroshi
Kawahara, Tatsuya
Nakamura, Yutaka

Osaka University
Kyoto Univ.
Osaka university

FrC13	Room 2.L5 KUKA
WSFFD01 - 2nd Workshop on Multi-Robot Perception-Driven Control and Planning, Part III (Workshop)	
Chair: Alonso-Mora, Javier	Delft University of Technology

14:30-16:30 FrC13.1

*Second Workshop on Multi-Robot Perception-Driven Control and Planning**

Alonso-Mora, Javier
Montijano, Eduardo
Rus, Daniela
Schwager, Mac

Delft University of Technology
Universidad de Zaragoza
MIT
Stanford University

FrC14	Room 1.R4
TUFFD01 - Aerial Robotic Manipulation, Part III (Tutorial)	
Chair: Heredia, Guillermo	University of Seville

14:30-16:30 FrC14.1

*Aerial Robotic Manipulation**

Heredia, Guillermo

University of Seville

FrC15	Room 2.R4
WSFFD11 - Continuum and Soft Robots (CSR) for Medical Interventions: Modelling, Fabrication, and Control, Part III (Workshop)	
Chair: Rabenoroosa, Kanty	Univ. Bourgogne Franche-Comté, CNRS

14:30-16:30 FrC15.1

*Continuum and Soft Robots (CSR) for Medical Interventions: Modeling, Fabrication, and Control**

Rabenoroosa, Kanty
Burgner-Kahrs, Jessica
Cianchetti, Matteo
Rucker, Caleb

Univ. Bourgogne Franche-Comté, CNRS
Leibniz Universität Hannover
Scuola Superiore Sant'Anna
University of Tennessee

FrC16	Room 1.R5
WSFFD06 - Collaboratively Working towards Ontology-Based Standards for Robotics and Automation, Part III (Workshop)	
Chair: Bermejo, Julita	Universidad Politecnica De Madrid

14:30-16:30 FrC16.1

*Collaboratively Working towards Ontology-Based Standards for Robotics and Automation**

Bermejo, Julita
Chibani, Abdelghani
Gonçalves, Paulo
Li, Howard
Jordan, Sara Rene
Olivares, Alberto
Olszewska, Joanna Isabelle

Universidad Politecnica de Madrid
Lissi Lab Paris EST University
Instituto Politecnico de Castelo Branco
University of New Brunswick
Virginia Tech
Universidad de Castilla-La Mancha
University of Gloucestershire, United Kingdom

Prestes, Edson	UFRGS
Rama Fiorini, Sandro	Université Paris-Est Creteil
Sanz, Ricardo	Universidad Politecnica de Madrid

Faragasso, Angela	The University of Tokyo
Murphy, Robin	Texas A&M
Asama, Hajime	The University of Tokyo

FrC17	Room 1.L1
WSFPM27 - RoboCup Humanoid League, Part I (Workshop)	
Chair: Hofer, Ludovic	LaBRI, Bordeaux University
14:30-16:30	FrC17.1
<i>RoboCup Humanoid League*</i> .	
Hofer, Ludovic	LaBRI, Bordeaux University
Gerndt, Reinhard	Ostfalia University of Applied Sciences

FrC18	Room 2.L3
WSFFD05 - Robots for Assisted Living, Part III (Workshop)	
Chair: Calinon, Sylvain	Idiap Research Institute
14:30-16:30	FrC18.1
<i>Robots for Assisted Living*</i> .	
Calinon, Sylvain	Idiap Research Institute
Dogramadzi, Sanja	University of the West of England
Torras, Carme	CSIC - UPC
Shibata, Tomohiro	Kyushu institute of technology
Demiris, Yiannis	Imperial College London

FrC19	Room 4.R4
WSFFD03 - ImPACT Tough Robotics Challenge: A National Project of Disaster Robotics Aiming at Social Innovation in Safety and Security, Part III (Workshop)	
Chair: Tadokoro, Satoshi	Tohoku University
14:30-16:30	FrC19.1
<i>ImPACT Tough Robotics Challenge - a National Project of Disaster Robotics Aiming at Social Innovation in Safety and Security*</i> .	
Tadokoro, Satoshi	Tohoku University
Matsuno, Fumitoshi	Kyoto University

FrC20	Room 2.R3
WSFPM22 - Robots That Learn and Reason: Towards Learning Logic Rules from Noisy Data, Part I (Workshop)	
Chair: Moreno, Plinio	IST-ID
14:30-16:30	FrC20.1
<i>Robots That Learn and Reason: Towards Learning Logic Rules from Noisy Data*</i> .	
Moreno, Plinio	IST-ID
Kersting, Kristian	Fraunhofer IAIS and University of Bonn
Santos-Victor, José	Instituto Superior Técnico - Lisbon
Bernardino, Alexandre	IST - Técnico Lisboa
Ventura, Rodrigo	Instituto Superior Técnico

FrC21	Room 4.R2
WSFPM16 - Human-Aiding Robotics: Open Issues and Future Direction, Part I (Workshop)	
Chair: Faragasso, Angela	The University of Tokyo
14:30-16:30	FrC21.1
<i>Human-Aiding Robotics: Open Issues and Future Direction*</i> .	

FrC22	Room 2.R2
TUFFD02 - Collaborative Robotics Toolkit (CRTK) and Open Platforms for Medical Robotics Research, Part III (Tutorial)	
Chair: Kazanzides, Peter	Johns Hopkins University
14:30-16:30	FrC22.1
<i>Collaborative Robotics Toolkit (CRTK) and Open Platforms for Medical Robotics Research*</i> .	
Kazanzides, Peter	Johns Hopkins University
Hannaford, Blake	University of Washington
Fischer, Gregory Scott	Worcester Polytechnic Institute, WPI

FrC23	Room 4.L1
WSFFD08 - Semantic Policy and Action Representations for Autonomous Robots, Part III (Workshop)	
Chair: Aksoy, Eren Erdal	Halmstad University
14:30-16:30	FrC23.1
<i>Semantic Policy and Action Representations for Autonomous Robots*</i> .	
Aksoy, Eren Erdal	Halmstad University
Yang, Yezhou	Arizona State University
Ramirez-Amaro, Karinne	Institute for Cognitive Systems. Technische Universität München.
Dantam, Neil	Colorado School of Mines
Cheng, Gordon	Technical University of Munich

FrD1	Room 1.L2
WSFFD09 - Robotics for Logistics in Warehouses and Environments Shared with Humans, Part IV (Workshop)	
Chair: Villani, Luigi	Univ. Napoli Federico II
17:00-19:00	FrD1.1
<i>Robotics for Logistics in Warehouses and Environments Shared with Humans*</i> .	
Villani, Luigi	Univ. Napoli Federico II
Magnusson, Martin	Örebro University
Prassler, Erwin	Bonn-Rhein-Sieg Univ. of Applied Sciences
Puljiz, David	Karlsruhe Institute of Technology
De la Riva, Jesús Julián Alfonso	ITAINNOVA / Instituto Tecnológico de Aragón, Spain

FrD2	Room 1.L3
WSFPM23 - Unconventional Sensing and Processing for Robotic Visual Perception (PM), Part II (Workshop)	
Chair: Sandamirskaya, Yulia	University and ETH Zurich
17:00-19:00	FrD2.1
<i>Unconventional Sensing and Processing for Robotic Visual Perception*</i> .	
Sandamirskaya, Yulia	University and ETH Zurich
Martel, Julien	University of Zurich & ETH Zurich

FrD3	Room 4.L3
WSFFD12 - Soft Robotic Modeling and Control: Bringing Together Articulated Soft Robots and Soft-Bodied Robots,	

Part IV (Workshop)	
Chair: Katzschmann, Robert Kevin	Massachusetts Institute of Technology
17:00-19:00	FrD3.1
<i>Soft Robotic Modeling and Control: Bringing Together Articulated Soft Robots and Soft-Bodied Robots*.</i>	
Katzschmann, Robert Kevin	Massachusetts Institute of Technology
Della Santina, Cosimo	Centro E. Piaggio
Rus, Daniela	MIT
FrD4	Room 1.R3
WSFFD13 - Shape Changing Robotic Structures and Interfaces, Part IV (Workshop)	
Chair: Wurdemann, Helge Arne	University College London
17:00-19:00	FrD4.1
<i>Workshop on Shape Changing Robotic Structures and Interfaces*.</i>	
Wurdemann, Helge Arne	University College London
Roudaut, Anne	University of Bristol
Dogramadzi, Sanja	University of the West of England
Paik, Jamie	Ecole Polytechnique Federale de Lausanne
Girouard, Audrey	Carleton University
Althoefer, Kaspar	Queen Mary University of London
Ho, Van	Japan Advanced Institute of Science and Technology
FrD5	Room 2.L2
WSFFD15 - Experimental Robotic Grasping and Manipulation: Benchmarks, Datasets, and Competitions, Part IV (Workshop)	
Chair: Sun, Yu	University of South Florida
17:00-19:00	FrD5.1
<i>Experimental Robotic Grasping and Manipulation -- Benchmarks, Datasets, and Competitions*.</i>	
Sun, Yu	University of South Florida
Moon, Hyungpil	Sungkyunkwan University
Falco, Joe	NIST
Calli, Berk	Worcester Institute of Technology
FrD6	Auditorium
WSFFD04 - Machine Learning in Robot Motion Planning, Part IV (Workshop)	
Chair: Choudhury, Sanjiban	University of Washington
17:00-19:00	FrD6.1
<i>Machine Learning in Robot Motion Planning*.</i>	
Choudhury, Sanjiban	University of Washington
Dey, Debadeepta	Microsoft
Srinivasa, Siddhartha	University of Washington
Toussaint, Marc	University of Stuttgart
Boots, Byron	Georgia Institute of Technology
FrD7	Room 1.L5
WSFFD02 - Vision-Based Drones: What's Next? Part IV (Workshop)	
Chair: Loianno, Giuseppe	New York University
17:00-19:00	FrD7.1

*Vision-Based Drones: What's Next?**.

Loianno, Giuseppe	New York University
Scaramuzza, Davide	University of Zurich
Kumar, Vijay	University of Pennsylvania

FrD8	Room 4.R1
WSFPM24 - Automating Robot Experiments: Manipulation and Learning, Part II (Workshop)	
Chair: Kroemer, Oliver	Carnegie Mellon University
17:00-19:00	FrD8.1
<i>Automating Robot Experiments: Manipulation and Learning*.</i>	
Kroemer, Oliver	Carnegie Mellon University
Pinto, Lerrel Joseph	Carnegie Mellon University
Muelling, Katharina	Carnegie Mellon University

FrD9	Room 2.R1
WSFFD14 - Development of Agile Robots, Part IV (Workshop)	
Chair: Kashiri, Navvab	Istituto Italiano Di Tecnologia
17:00-19:00	FrD9.1
<i>Development of Agile Robots*.</i>	
Kashiri, Navvab	Istituto Italiano di Tecnologia
Malzahn, Jörn	Istituto Italiano di Tecnologia
Tsagarakis, Nikos	Istituto Italiano di Tecnologia

FrD10	Room 4.L4
WSFPM26 - towards Intelligent Social Robots: From Naive Robots to Robot Sapiens, Part II (Workshop)	
Chair: Aly, Amir	Ritsumeikan University
17:00-19:00	FrD10.1
<i>Towards Intelligent Social Robots: From Naive Robots to Robot Sapiens*.</i>	
Aly, Amir	Ritsumeikan University

FrD11	Room 4.R3
WSFAM18 - Robot Safety: Filling the Gap between Technology Offer and Industry Needs for a Fully Deployable Human Robot Collaboration, Part II (Workshop)	
Chair: Albert, Fabien	Airbus
17:00-19:00	FrD11.1
<i>Robot Safety: Filling the Gap between Technology Offer and Industry Needs, for a Fully Deployable Human Robot Collaboration*.</i>	
Albert, Fabien	Airbus
Cristalli, Cristina	Loccioni Group - AEA

FrD12	Room 4.R5
WSFFD07 - Autonomous Dialogue Technologies in Symbiotic Human-Robot Interaction, Part IV (Workshop)	
Chair: Ishiguro, Hiroshi	Osaka University
17:00-19:00	FrD12.1
<i>Autonomous Dialogue Technologies in Symbiotic Human-Robot Interaction*.</i>	
Ishiguro, Hiroshi	Osaka University
Kawahara, Tatsuya	Kyoto Univ.
Nakamura, Yutaka	Osaka university

FrD13	Room 2.L5 KUKA
--------------	----------------

WSFFD01 - 2nd Workshop on Multi-Robot Perception-Driven Control and Planning, Part IV (Workshop)	
Chair: Alonso-Mora, Javier	Delft University of Technology
17:00-19:00	FrD13.1
<i>Second Workshop on Multi-Robot Perception-Driven Control and Planning*.</i>	
Alonso-Mora, Javier	Delft University of Technology
Montijano, Eduardo	Universidad de Zaragoza
Rus, Daniela	MIT
Schwager, Mac	Stanford University
FrD14	Room 1.R4
TUFFD01 - Aerial Robotic Manipulation, Part IV (Tutorial)	
Chair: Heredia, Guillermo	University of Seville
17:00-19:00	FrD14.1
<i>Aerial Robotic Manipulation*.</i>	
Heredia, Guillermo	University of Seville
FrD15	Room 2.R4
WSFFD11 - Continuum and Soft Robots (CSR) for Medical Interventions: Modelling, Fabrication, and Control, Part IV (Workshop)	
Chair: Rabenorosa, Kanty	Univ. Bourgogne Franche-Comté, CNRS
17:00-19:00	FrD15.1
<i>Continuum and Soft Robots (CSR) for Medical Interventions: Modeling, Fabrication, and Control*.</i>	
Rabenorosa, Kanty	Univ. Bourgogne Franche-Comté, CNRS
Burgner-Kahrs, Jessica	Leibniz Universität Hannover
Cianchetti, Matteo	Scuola Superiore Sant'Anna
Rucker, Caleb	University of Tennessee
FrD16	Room 1.R5
WSFFD06 - Collaboratively Working towards Ontology-Based Standards for Robotics and Automation, Part IV (Workshop)	
Chair: Bermejo, Julita	Universidad Politecnica De Madrid
17:00-19:00	FrD16.1
<i>Collaboratively Working towards Ontology-Based Standards for Robotics and Automation*.</i>	
Bermejo, Julita	Universidad Politecnica de Madrid
Chibani, Abdelghani	Lissi Lab Paris EST University
Gonçalves, Paulo	Instituto Politecnico de Castelo Branco
Li, Howard	University of New Brunswick
Jordan, Sara Rene	Virginia Tech
Olivares, Alberto	Universidad de Castilla-La Mancha
Olszewska, Joanna Isabelle	University of Gloucestershire, United Kingdom
Prestes, Edson	UFRGS
Rama Fiorini, Sandro	Université Paris-Est Creteil
Sanz, Ricardo	Universidad Politecnica de Madrid
FrD17	Room 1.L1
WSFPM27 - RoboCup Humanoid League, Part II (Workshop)	
Chair: Hofer, Ludovic	LaBRI, Bordeaux University

17:00-19:00	FrD17.1
<i>RoboCup Humanoid League*.</i>	
Hofer, Ludovic	LaBRI, Bordeaux University
Gerndt, Reinhard	Ostfalia University of Applied Sciences
FrD18	Room 2.L3
WSFFD05 - Robots for Assisted Living, Part IV (Workshop)	
Chair: Calinon, Sylvain	Idiap Research Institute
17:00-19:00	FrD18.1
<i>Robots for Assisted Living*.</i>	
Calinon, Sylvain	Idiap Research Institute
Dogramadzi, Sanja	University of the West of England
Torras, Carme	CSIC - UPC
Shibata, Tomohiro	Kyushu institute of technology
Demiris, Yiannis	Imperial College London
FrD19	Room 4.R4
WSFFD03 - ImPACT Tough Robotics Challenge: A National Project of Disaster Robotics Aiming at Social Innovation in Safety and Security, Part IV (Workshop)	
Chair: Tadokoro, Satoshi	Tohoku University
17:00-19:00	FrD19.1
<i>ImPACT Tough Robotics Challenge - a National Project of Disaster Robotics Aiming at Social Innovation in Safety and Security*.</i>	
Tadokoro, Satoshi	Tohoku University
Matsuno, Fumitoshi	Kyoto University
FrD20	Room 2.R3
WSFPM22 - Robots That Learn and Reason: Towards Learning Logic Rules from Noisy Data, Part II (Workshop)	
Chair: Moreno, Plinio	IST-ID
17:00-19:00	FrD20.1
<i>Robots That Learn and Reason: Towards Learning Logic Rules from Noisy Data*.</i>	
Moreno, Plinio	IST-ID
Kersting, Kristian	Fraunhofer IAIS and University of Bonn
Santos-Victor, José	Instituto Superior Técnico - Lisbon
Bernardino, Alexandre	IST - Técnico Lisboa
Ventura, Rodrigo	Instituto Superior Técnico
FrD21	Room 4.R2
WSFPM16 - Human-Aiding Robotics: Open Issues and Future Direction, Part II (Workshop)	
Chair: Faragasso, Angela	The University of Tokyo
17:00-19:00	FrD21.1
<i>Human-Aiding Robotics: Open Issues and Future Direction*.</i>	
Faragasso, Angela	The University of Tokyo
Murphy, Robin	Texas A&M
Asama, Hajime	The University of Tokyo
FrD22	Room 2.R2
TUFFD02 - Collaborative Robotics Toolkit (CRTK) and Open Platforms for Medical Robotics Research, Part IV (Tutorial)	
Chair: Kazanzides, Peter	Johns Hopkins University

17:00-19:00	FrD22.1
-------------	---------

Collaborative Robotics Toolkit (CRTK) and Open Platforms for Medical Robotics Research.*

Kazanzides, Peter	Johns Hopkins University
Hannaford, Blake	University of Washington
Fischer, Gregory Scott	Worcester Polytechnic Institute, WPI

FrD23	Room 4.L1
--------------	-----------

WSFFD08 - Semantic Policy and Action Representations for Autonomous Robots, Part IV (Workshop)

Chair: Aksoy, Eren Erdal	Halmstad University
--------------------------	---------------------

17:00-19:00	FrD23.1
-------------	---------

Semantic Policy and Action Representations for Autonomous Robots.*

Aksoy, Eren Erdal	Halmstad University
Yang, Yezhou	Arizona State University
Ramirez-Amaro, Karinne	Institute for Cognitive Systems. Technische Universität München.
Dantam, Neil	Colorado School of Mines
Cheng, Gordon	Technical University of Munich