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Technical Program for Monday October 8, 2012

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Chair: Lepora, Nathan — Univ. of Sheffield
Co-Chair: v. Wichert, Georg — Siemens AG

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Virta, Antti E. A. — Aalto Univ. School of Electrical Engineering
Timonen, Jaakko V. I. — Aalto Univ.
Ras, Robin H. A. — Aalto Univ. School of Science
Zhou, Quan — Aalto Univ.

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Evans, Mathew — Univ. of Sheffield
Pearson, Martin — Bristol Robotics Lab.
Lepora, Nathan — Univ. of Sheffield
Prescott, Tony J — Univ. of Sheffield
Fox, Charles — Univ. of Sheffield

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Scalable Robotic-Hand Control System Based on a Hierarchical Multi-Processor Architecture Adopting a Large Number of Tactile Sensors, pp. 14-19.
Ito, Kiyoto — Central Res. Lab. Hitachi, Ltd.
Saen, Makoto — Central Res. Lab. Hitachi, Ltd.
Osada, Kenichi — Central Res. Lab. Hitachi, Ltd.

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A Versatile Tactile Sensor System for Covering Large and Curved Surface Areas, pp. 20-24.
Zillich, Michael — Vienna Univ. of Tech.
Feiten, Wendelin — Siemens AG

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Soft Tactile Sensor Arrays for Micromanipulation, pp. 25-32.
Hammond III, Frank L. — Harvard Univ.
Kramer, Rebecca — Harvard Univ.
Wan, Qian — Harvard Univ.
Howe, Robert D. — Harvard Univ.
Wood, Robert — Harvard Univ.

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Towards a Minimal Architecture for a Printable, Modular, and Robust Sensing Skin, pp. 33-38.
Buchan, Austin D — UC Berkeley
Bachrach, Jonathan — uc berkeley
Fearing, Ronald — Univ. of California at Berkeley

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Chair: Tsagarakis, Nikolaos — Istituto Italiano di Tecnologia

11:00-11:15 MonAT2.1

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Wang, Dangxiao — Beihang Univ.
Liu, Shuai — Beihang Univ.
Zhang, Xin — Beihang Univ.
Xiao, Jing — UNC-Charlotte
Hou, Jianxia — Peking Univ.
Zhang, Yuru — Beihang Univ.

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Integration of a Tactile Display in Teleoperation of a Soft Robotic Finger Using Model Based Tactile Feedback, pp.

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Sarakoglou, Ioannis	Istituto Italiano di Tecnologia
Garcia Hernandez, Nadia Vanessa	Istituto Italiano di Tecnologia
Tsagarakis, Nikolaos	Istituto Italiano di Tecnologia
Caldwell, Darwin G.	Italian Inst. of Tech.

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Surface Material Recognition through Haptic Exploration Using an Intelligent Contact Sensing Finger, pp. 52-57.

Liu, Hongbin	King's Coll. London
Song, Xiaojing	King's Coll. London
Bimbo, Joao	King's Coll. London
Seneviratne, Lakmal	Kings Coll. London
Althoefer, Kaspar	Kings Coll. London

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A Rate-Position Haptic Controller for Large Telemanipulation Workspaces, pp. 58-63. Attachment

Barrio, Jorge	Univ. Pol. de Madrid
Suárez-Ruiz, Francisco	Univ. Pol. de Madrid
Ferre, Manuel	Univ. Pol. de Madrid
Aracil, Rafael	Univ. Pol. de Madrid

12:00-12:15 MonAT2.5

Passive Haptic Rendering and Control of Lagrangian Virtual Proxy, pp. 64-69.

Lee, Dongjun	Seoul National Univ.
Kim, Myungsin	Seoul National Univ.
Qiu, Tian	Univ. of Tennessee

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Jazayeri, Ali	Univ. of Alberta
Tavakoli, Mahdi	Univ. of Alberta

MonAT3 Pegaso B

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Chair: Antonelli, Gianluca	Univ. degli Studi di Cassino
Co-Chair: Chemori, Ahmed	LIRMM

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Maalouf, Divine	LIRMM
Creuze, Vincent	LIRMM, Univ. Montpellier 2 , CNRS UMR5506
Chemori, Ahmed	LIRMM

11:15-11:30 MonAT3.2

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Daly, John Michael	Quanser
Tribou, Michael John	Univ. of Waterloo
Waslander, Steven Lake	Univ. of Waterloo

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Galceran, Enric	Univ. of Girona
Carreras, Marc	Univ. de Girona

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Sliwka, Jan	ENSIETA
Clement, Benoit	ENSTA-Bretagne
Probst, Irvin	ENSTA-Bretagne

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Dhull, Sandeep	Univ. of Minnesota
Canelon, Dario	ME, UMN

Kottas, Apostolos	UMN
Dancs, Justin	Univ. of Minnesota
Carlson, Andrew	Univ. of Minnesota
Papanikolopoulos, Nikos	Univ. of Minnesota
12:15-12:30	MonAT3.6

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Prats, Mario	Univ. of Jaume I
Fernández, José Javier	Univ. of Jaume-I
Sanz, Pedro J	Jaume I

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Chair: Hosoda, Koh	Osaka Univ.
Co-Chair: Kim, Sangbae	Massachusetts Inst. of Tech.
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Finio, Benjamin	Harvard Univ.
Wood, Robert	Harvard Univ.
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Shi, Qing	Waseda Univ.
Ishii, Hiroyuki	Waseda Univ.
Takanishi, Atsuo	Waseda Univ.
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Chin, Yao Wei	Nanyang Tech. Univ.
Lau, Gih Keong	Nanyang Tech. Univ.
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Sato, Takahide	Tohoku Univ.
Kano, Takeshi	Tohoku Univ.
Hirai, Akihiro	Tohoku Univ.
Kobayashi, Ryo	Hiroshima Univ.
Ishiguro, Akio	Tohoku Univ.
12:00-12:15	MonAT4.5

Redundant Sensor System for Stochastic Resonance Tuning without Input Signal Knowledge, pp. 139-144.

Koyama, Nagisa	Osaka Univ.
Ikemoto, Shuhei	Osaka Univ.
Hosoda, Koh	Osaka Univ.
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Kang, Rongjie	Istituto Italiano di Tecnologia
Guglielmino, Emanuele	Istituto Italiano di Tecnologia
Branson, David	Istituto Italiano di Tecnologia (IIT)
Caldwell, Darwin G.	Fondazione Itituto Italiano di Tecnologia

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Chair: Park, Jong Hyeon	Hanyang Univ.
Co-Chair: Byl, Katie	UCSB
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Tanaka, Daiki	Japan Advanced Inst. of Science and Tech.
Asano, Fumihiko	Japan Advanced Inst. of Science and Tech.
Tokuda, Isao	Ritsumeikan Univ.

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Active Viscoelastic-Legged Rimless Wheel with Upper Body and Its Adaptability to Irregular Terrain, pp. 157-162. Attachment	
Kawamoto, Junji	Japan Advanced Inst. of Science and Tech.
Asano, Fumihiko	Japan Advanced Inst. of Science and Tech.
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Ishikawa, Masato	Osaka Univ.
Kato, Takaaki	Osaka Univ.
Sugimoto, Yasuhiro	Osaka Univ.
Osuka, Koichi	Osaka Univ.
Sankai, Yoshiyuki	Univ. of Tsukuba
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Maheshwari, Nandan	ETH Z, Bio-Inspired Robotics Lab. IRIS
Yu, Xiaoxiang	ETHZ
Reis, Murat	ETH - Zurich
Iida, Fumiya	ETH Zurich
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Park, Jaehwan	Hanyang Univ.
Park, Jong Hyeon	Hanyang Univ.
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Walas, Krzysztof, Tadeusz	Pol. Poznanska
Kasinski, Andrzej J.	Poznan Univ. of Tech.

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Chair: Miura, Jun	Toyohashi Univ. of Tech.
Co-Chair: Kennedy, Ryan	Univ. of Pennsylvania
11:00-11:15	MonAT6.1
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Khalvati, Koosha	Univ. of British Columbia
Mackworth, Alan	Univ. of British Columbia
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Kennedy, Ryan	Univ. of Pennsylvania
Daniilidis, Kostas	Univ. of Pennsylvania
Naroditsky, Oleg	Univ. of Pennsylvania
Taylor, Camillo Jose	Univ. of Pennsylvania
11:30-11:45	MonAT6.3
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Matsuo, Keisuke	Toyohashi Univ. of Tech.
Miura, Jun	Toyohashi Univ. of Tech.
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Moreno-Salinas, David	Univ. Nacional de Educacion a Distancia
Pascoal, Antonio	Inst. Superior Tecnico
Aranda, Joaquín	Univ. Nacional de Educacion a Distancia
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Rogers-Marcovitz, Forrest	Carnegie Mellon Univ.
George, Michael David	Carnegie Mellon Univ.
Seegmiller, Neal Andrew	Carnegie Mellon Univ.

Kelly, Alonzo	Carnegie Mellon Univ.
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Sert, Hugues	Univ. de Lille 1, LAGIS, Syner,
Perruquetti, Wilfrid	Ec. Centrale de Lille
Kokosy, Annemarie	ISEN
Jin, Xin	ISEN LILLE
Palos, Jorge	ISEN

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Wongpiromsarn, Tichakorn	Singapore-MIT Alliance for Res. & Tech.
Ulusoy, Alphan	Boston Univ.
Belta, Calin	Boston Univ.
Frazzoli, Emilio	Massachusetts Inst. of Tech.
Rus, Daniela	MIT
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Dantam, Neil	Georgia Inst. of Tech.
Essa, Irfan	Georgia Inst. of Tech.
Stilman, Mike	Georgia Tech.
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Nyga, Daniel	Tech. Univ. München
Beetz, Michael	Univ. of Bremen
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Raman, Vasumathi	Cornell Univ.
Finucane, Cameron	Cornell Univ.
Kress-Gazit, Hadas	Cornell Univ.
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Seo, Jungwon	Univ. of Pennsylvania
Kumar, Vijay	Univ. of Pennsylvania
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Kim, Kangjin	Arizona State Univ.
Fainekos, Georgios	Arizona State Univ.

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Chair: de Almeida, Anibal	Univ. of Coimbra
Co-Chair: Johnson, Aaron	Univ. of Pennsylvania
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Johnson, Aaron	Univ. of Pennsylvania
Haynes, Galen Clark	Univ. of Pennsylvania
Koditschek, Daniel	Univ. of Pennsylvania
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Tavakoli, Mahmoud	Univ. of Coimbra
Marques, Lino	Univ. of Coimbra

de Almeida, Anibal	Univ. of Coimbra
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Birkmeyer, Paul	Univ. of California, Berkeley
Gillies, Andrew G	UC Berkeley
Fearing, Ronald	Univ. of California at Berkeley
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Godage, Isuru S.	Istituto Italiano di Tecnologia
Nanayakkara, Thrishantha	King's Coll. Univ. of London
Caldwell, Darwin G.	Fondazione Itituto Italiano di Tecnologia
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Kibayashi, Takeshi	Osaka Univ.
Sugimoto, Yasuhiro	Osaka Univ.
Ishikawa, Masato	Osaka Univ.
Osuka, Koichi	Osaka Univ.
Sankai, Yoshiyuki	Univ. of Tsukuba
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Wang, Liyu	Bio-Inspired Robotics Lab. ETH Zurich
Graber, Lina	Hocoma AG, ETH Zurich
Iida, Fumiya	ETH Zurich

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Rehabilitation Robotics I (Regular Session)	
Chair: Guglielmelli, Eugenio	Univ. Campus Bio-Medico
Co-Chair: Mazzoleni, Stefano	Scuola Superiore Sant'Anna
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Ikeda, Takahiro	Univ. of Tsukuba
Matsushita, Akira	Univ. of Tsukuba
Saotome, Kosaku	Univ. of Tsukuba
Hasegawa, Yasuhisa	Univ. of Tsukuba
Sankai, Yoshiyuki	Univ. of Tsukuba
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Galiana, Ignacio	Centre for Automation and Robotics UPM-CSIC
Hammond III, Frank L.	Harvard Univ.
Howe, Robert D.	Harvard Univ.
Popovic, Marko	Worcester Pol. Inst.
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Everarts, Christophe	Univ. catholique de Louvain
Dehez, Bruno	Univ. catholique de Louvain
Ronsse, Renaud	Univ. catholique de Louvain
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Mou, Wei-Hao	National Taiwan Univ.
Chang, Ming-Fang	National Taiwan Univ.
Liao, Chien-Ke	National Taiwan Univ.
Hsu, Yuan-Han	National Taiwan Univ.
Tseng, Shih-Huan	National Taiwan Univ.
Fu, Li-Chen	National Taiwan Univ.
12:00-12:15	MonAT9.5
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Vertechy, Rocco	Scuola Superiore Sant' Anna
Frisoli, Antonio	Scuola Superiore Sant'Anna
Solazzi, Massimiliano	Scuola Superiore Sant'Anna, TeCIP Inst.
Pellegrinetti, Dario	Scuola Superiore Sant' Anna
Bergamasco, Massimo	Scuola Superiore S.Anna

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Nihei, Misato	the Univ. of Tokyo
Harue, Naohiko	the Univ. of Tokyo
Kamata, Minoru	The Univ. of Tokyo

MonAT10 Lince

Safety, Failure Handling and Recovery I (Regular Session)

Chair: Haddadin, Sami — German Aerospace Center (DLR)

11:00-11:15 MonAT10.1

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Sankaran, Bharath	Univ. of Pennsylvania
Pitzer, Benjamin	Robert Bosch LLC
Osentoski, Sarah	Robert Bosch LLC

11:15-11:30 MonAT10.2

Relative-Change-Based Hierarchical Taxonomy for Cantilever-Snap Assembly Verification, pp. 356-363.

Rojas, Juan Luis	National Inst. of Advanced Industrial andScienceTechnology
Harada, Kensuke	National Inst. of AIST
Onda, Hiromu	National Inst. of AIST
Yamanobe, Natsuki	Advanced Industrial Science and Tech.
Yoshida, Eiichi	National Inst. of AIST
Nagata, Kazuyuki	National Inst. of AIST
Kawai, Yoshihiro	National Inst. of Advanced Industrial ScienceandTechnology (

11:30-11:45 MonAT10.3

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Niemueller, Tim	RWTH Aachen Univ.
Lakemeyer, Gerhard	Computer Science Department, RWTH Aachen Univ.
Srinivasa, Siddhartha	Carnegie Mellon Univ.

11:45-12:00 MonAT10.4

Motion Interference Detection in Mobile Robots, pp. 370-375.

Mendoza, Juan Pablo	Carnegie Mellon Univ.
Veloso, Manuela	Carnegie Mellon Univ.
Simmons, Reid	Carnegie Mellon Univ.

12:00-12:15 MonAT10.5

The Role of Joint Stiffness Enhancing Collision Reaction Performance of Collaborative Robot Manipulators, pp. 376-381.

Kishi, Yasuo	Yaskawa Electric Corp.
Yamada, Yoji	Nagoya Univ.
Yokoyama, Kazuhiko	Yaskawa Electric Corp.

12:15-12:30 MonAT10.6

Development of Pedestrian Behavior Model Taking Account of Intention, pp. 382-387.

Tamura, Yusuke	Chuo Univ.
Le, Phuoc Dai	The Univ. of Tokyo
Hitomi, Kentarou	Toyota InfoTechnology Center
Naiwala Pathirannehelage, Chandrasiri	Toyota Info Tech. Center
Bando, Takashi	DENSO Corp.
Yamashita, Atsushi	The Univ. of Tokyo
Asama, Hajime	The Univ. of Tokyo

MonAT11 Hidra

Nonholonomic Motion Planning (Invited Session)

Chair: Kozlowski, Krzysztof R. — Poznan Univ. of Tech.

Co-Chair: Egerstedt, Magnus	Georgia Inst. of Tech.
Organizer: Kozlowski, Krzysztof R.	Poznan Univ. of Tech.
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Szulczyński, Paweł	Poznan Univ. of Tech.
Kozlowski, Krzysztof R.	Poznan Univ. of Tech.
Pazderski, Dariusz	Poznan Univ. of Tech.
11:15-11:30	MonAT11.2
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Pazderski, Dariusz	Poznan Univ. of Tech.
Kozlowski, Krzysztof R.	Poznan Univ. of Tech.
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Path Tracking of a Small Autonomous Airplane in Wind Gusts, pp. 402-407.	
Kahale, Elie	Lab. IBISC, Univ. d'Evry
Bestaoui, Yasmina	Univ. of Evry
Castillo, Pedro	Univ. de Tech. de Compiègne
11:45-12:00	MonAT11.4
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Droge, Greg	Georgia Inst. of Tech.
Kingston, Peter	Georgia Inst. of Tech.
Egerstedt, Magnus	Georgia Inst. of Tech.
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Svinin, Mikhail	Kyushu Univ.
Morinaga, Akihiro	Kyushu Univ.
Yamamoto, Motoji	Kyushu Univ.
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Maly, Matthew	Rice Univ.
Kavraki, Lydia	Rice Univ.

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Chair: Barreto, João P.	Univ. of Coimbra
14:00-14:15	MonBT1.1
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Hu, Jwu-Sheng	Intelligent Robotics Tech. Div.
Wang, Jyun-Ji	National Chiao Tung Univ.
Chang, Yung-Jung	National Chiao Tung Univ.
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Schenk, Konrad	Ilmenau Univ. of Tech.
Kolarow, Alexander	Ilmenau Univ. of Tech.
Eisenbach, Markus	Ilmenau Univ. of Tech.
Debes, Klaus	Ilmenau Univ. of Tech.
Gross, Horst-Michael	Ilmenau Univ. of Tech.
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Kim, Jae-Hean	ETRI
Koo, Bon-Ki	ETRI
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Wittmeier, Steffen	Tech. Univ. of Munich
Gaschler, Andre Karlheinz	Tech. Univ. Muenchen
Jäntsch, Michael	Tech. Univ. of Munich
Dalamagkidis, Konstantinos	TU Munich

Knoll, Alois — TU Munich

MonBT2 — Fenix 2

Human Robot Interaction I (Regular Session)

Chair: Laschi, Cecilia — Scuola Superiore Sant'Anna

Co-Chair: Lambrecht, Jens — Berlin Inst. of Tech.

14:00-14:15 — MonBT2.1

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Albin, Aaron — Georgia Inst. of Tech.

Weinberg, Gil — Georgia Inst. of Tech.

Egerstedt, Magnus — Georgia Inst. of Tech.

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Cuntoor, Naresh — Kitware

Collins, Roderic — Kitware

Hoogs, Anthony J. — Kitware

14:30-14:45 — MonBT2.3

Spatial Programming for Industrial Robots Based on Gestures and Augmented Reality, pp. 466-472. Attachment

Lambrecht, Jens — Berlin Inst. of Tech.

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Scheduling Operator Attention for Multi-Robot Control, pp. 473-479.

Chien, Shih-Yi — Univ. of Pittsburgh

Mehrotra, Siddharth — Carnegie Mellon Univ.

Brooks, Nathan — Carnegie Mellon Univ.

Lewis, Michael — Univ. of Pittsburgh

Sycara, Katia — Carnegie Mellon Univ.

MonBT3 — Pegaso B

Aerial Robotics I (Regular Session)

Chair: Kosuge, Kazuhiro — Tohoku Univ.

Co-Chair: Kim, H. Jin — Seoul National Univ.

14:00-14:15 — MonBT3.1

Bio-Inspired TauPilot for Automated Aerial 4D Docking and Landing of Unmanned Aircraft Systems, pp. 480-487.

Kendoul, Farid — Australian Commonwealth ScientificandResearchOrganization(CSIRO)

Arain, Bilal Ahmed — CSIRO ICT Centre

14:15-14:30 — MonBT3.2

Levitation Control of Experimental Wing-In-Ground Effect Vehicle Along Y and Z Axes and about Three Axes, pp. 488-494. Attachment

Sugahara, Yusuke — Kokushikan Univ.

Minagawa, Nozomu — Tohoku Univ.

Kosuge, Kazuhiro — Tohoku Univ.

Kohama, Yasuaki — Tohoku Univ.

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Onboard Flight Control of a Micro Quadrotor Using Single Strapdown Optical Flow Sensor, pp. 495-500. Attachment

Lim, Hyon — Seoul National Univ.

Lee, Hyeonbeom — Seoul National Uni.

Kim, H. Jin — Seoul National Univ.

14:45-15:00 — MonBT3.4

A Flapping-Wing Micro Air Vehicle with Interchangeable Parts for System Integration Studies, pp. 501-506.

Sahai, Ranjana — Harvard Univ.

Galloway, Kevin — Wyss Inst.

Karpelson, Michael — Harvard Univ.

Wood, Robert — Harvard Univ.

MonBT4 — Fenix 3

Biologically Inspired Robotics I (Regular Session)

Chair: Poulakakis, Ioannis — Univ. of Delaware

14:00-14:15 — MonBT4.1

A Switching Kinematic Model for an Octapedal Robot, pp. 507-512.

Karydis, Konstantinos — Univ. of Delaware
Poulakakis, Ioannis — Univ. of Delaware
Tanner, Herbert G. — Univ. of Delaware

14:15-14:30 — MonBT4.2

Performance Analysis and Terrain Classification for a Legged Robot Over Rough Terrain, pp. 513-519.

Garcia Bermudez, Fernando L. — Univ. of California, Berkeley
Julian, Ryan C. — Univ. of California, Berkeley
Haldane, Duncan — Univ. of California, Berkeley
Abbeel, Pieter — UC Berkeley
Fearing, Ronald — Univ. of California at Berkeley

14:30-14:45 — MonBT4.3

Underwater Object Tracking Using Electrical Impedance Tomography, pp. 520-525.

Snyder, James — Northwestern Univ.
Silverman, Yonatan — Northwestern Univ.
Bai, Yang — Northwestern Univ.
MacIver, Malcolm A. — Northwestern Univ.

14:45-15:00 — MonBT4.4

Toward Innate Leg Stability on Unmodeled and Natural Terrain: Hexapod Walking, pp. 526-531. Attachment

Palankar, Mayur — Univ. of South Florida
Palmer III, Luther R. — Univ. of South Florida

MonBT5 — Gemini 2

Distributed Robot Systems I (Regular Session)

Chair: Oriolo, Giuseppe — Univ. di Roma
Co-Chair: Di Caro, Gianni A. — IDSIA (USI/SUPSI)

14:00-14:15 — MonBT5.1

A Parameterized Control Methodology for a Modular Flying Vehicle, pp. 532-538.

Oung, Raymond — ETH Zurich
Picallo Cruz, Miguel — UPC BarcelonaTech
D'Andrea, Raffaello — ETHZ

14:15-14:30 — MonBT5.2

A Swarm Aggregation Algorithm Based on Local Interaction for Multi-Robot Systems with Actuator Saturation, pp. 539-544. Attachment

Gasparri, Andrea — Univ. degli Studi Roma Tre
Oriolo, Giuseppe — Univ. di Roma
Priolo, Attilio — Univ. degli studi Roma Tre
Ulivi, Giovanni — Univ. di Roma Tre

14:30-14:45 — MonBT5.3

Multi-Robot Cognitive Formations, pp. 545-550. Attachment

Sousa, Miguel — Univ. of Minho
Monteiro, Sergio — Univ. of Minho
Machado, Toni — Univ. of Minho
Erlhagen, Wolfram — Univ. of Minho
Bicho, Estela — Univ. of Minho

14:45-15:00 — MonBT5.4

Cooperative Sensing and Recognition by a Swarm of Mobile Robots, pp. 551-558. Attachment

Giusti, Alessandro — IDSIA Lugano, SUPSI
Nagi, Jawad — Dalle Molle Inst. for Artificial Intelligence (IDSIA)
Gambardella, Luca — idsia
Di Caro, Gianni A. — IDSIA (USI/SUPSI)

MonBT6 — Gemini 3

Localization and Mapping I (Regular Session)

Chair: Siegwart, Roland	ETH Zurich
14:00-14:15	MonBT6.1
Single Camera Visual Odometry Based on Random Finite Set Statistics, pp. 559-566.	
Zhang, Feihu	TU München
Staehle, Hauke	Tech. Univ. Munich
Gaschler, Andre Karlheinz	Tech. Univ. Muenchen
Buckl, Christian	fortiss
Knoll, Alois	TU Munich
14:15-14:30	MonBT6.2
The Role of Homing in Visual Topological Navigation, pp. 567-572. Attachment	
Liu, Ming	ETH Zurich
Pradalier, Cedric	ETH Zurich
Pomerleau, Francois	ETH Zurich
Moore, Lewis	ETH
Siegwart, Roland	ETH Zurich
14:30-14:45	MonBT6.3
A Benchmark for the Evaluation of RGB-D SLAM Systems, pp. 573-580.	
Sturm, Jürgen	Tech. Univ. of Munich
Engelhard, Nikolas	TU Munich
Endres, Felix	Univ. of Freiburg
Burgard, Wolfram	Univ. of Freiburg
Cremers, Daniel	Tech. Univ. of Munich
14:45-15:00	MonBT6.4
Robust Optimization of Factor Graphs by Using Condensed Measurements, pp. 581-588.	
Grisetti, Giorgio	Sapienza Univ. of Rome
Kuemmerle, Rainer	Univ. of Freiburg
Ni, Kai	Microsoft

MonBT7	Vega
Motion and Path Planning I (Regular Session)	
Chair: Shiller, Zvi	Ariel Univ. Center
14:00-14:15	MonBT7.1
A Generic Infrastructure for Benchmarking Motion Planners, pp. 589-595.	
Cohen, Benjamin	Univ. of Pennsylvania
Sucan, Ioan Alexandru	Willow Garage
Chitta, Sachin	Willow Garage Inc.
14:15-14:30	MonBT7.2
High Speed On-Line Motion Planning in Cluttered Environments, pp. 596-601. Attachment	
Shiller, Zvi	Ariel Univ. Center
Sharma, Sanjeev	Indian Inst. of Tech. Roorkee; Searching-Eye.Com
14:30-14:45	MonBT7.3
Minimum Time Search for Lost Targets Using Cross Entropy Optimization, pp. 602-609.	
Lanillos, Pablo	Univ. Complutense de Madrid
Besada-Portas, Eva	Univ. Complutense de Madrid
Pajares, Gonzalo	Univ. Complutense de Madrid
Ruz, Jose J	Univ. Complutense de Madrid
14:45-15:00	MonBT7.4
Modeling the Rotational Paddling of an Epaddle-Based Amphibious Robot, pp. 610-615.	
Sun, Yi	Ritsumeikan Univ.
Ma, Shugen	Ritsumeikan Univ.
Fujita, Kazuhiro	Ritsumeikan Univ.
Yang, Yang	Ritsumeikan Univ.
Pu, Huayan	Shanghai Univ.

MonBT8	Gemini 1
Novel Actuation Technologies (Regular Session)	

Chair: Accoto, Dino — Univ. Campus Bio-Medico

14:00-14:15 — MonBT8.1

Novel Actuator Driven with Phase Transition of Working Fluid for Uses in Wide Temperature Range, pp. 616-621.

Suzumori, Koichi — Okayama Univ.
Matsuoka, Hiroki — Okayama Univ.
Wakimoto, Shuichi — Okayama Univ.

14:15-14:30 — MonBT8.2

A Resonant Electrostatic Induction Motor with Piezoelectric Elements As Inductors Connected to Its Slider Electrodes, pp. 622-627.

Saito, Ryosuke — The Univ. of Tokyo
Hosobata, Takuya — The Univ. of Tokyo
Yamamoto, Akio — Univ. of Tokyo
Higuchi, Toshiro — The Univ. of Tokyo

14:30-14:45 — MonBT8.3

System Identification Model for an Intelligent Pneumatic Actuator (IPA) System, pp. 628-633.

Osman, Khairuddin — Univ. Teknikal Malaysia Melaka
Mohd Faudzi, Ahmad `Athif — Univ. Teknologi Malaysia
Rahmat, Mohd Fua'ad — Univ. Teknologi Malaysia
Mustafa, Nu'man Din — Univ. Teknologi Malaysia
Azman, M. Asyraf — Univ. Teknologi Malaysia
Suzumori, Koichi — Okayama Univ.

14:45-15:00 — MonBT8.4

Model-Based Trajectory Control of Robots with Pneumatic Actuator Dynamics, pp. 634-639.

Niiyama, Ryuma — Massachusetts Inst. of Tech.

MonBT9 — Fenix 1

Micro-Nano Scale Automation I (Regular Session)

Chair: Fukuda, Toshio — Nagoya Univ.

14:00-14:15 — MonBT9.1

Nanorobotic Transfer and Characterization of Graphene Flakes, pp. 640-645.

Zimmermann, Soeren — Inst. for Information Tech. (OFFIS)
Eichhorn, Volkmar — Univ. of Oldenburg
Fatikow, Sergej — Univ. of Oldenburg

14:15-14:30 — MonBT9.2

Auto Nanomanipulation System for Single Cell Mechanical Property Characterization Inside an Environmental SEM, pp. 646-651.

Shen, Yajing — Nagoya Univ.
Nakajima, Masahiro — Nagoya Univ.
Homma, Michio — Nagoya Univ.
Fukuda, Toshio — Nagoya Univ.

14:30-14:45 — MonBT9.3

Dynamic Path Planning in Robot-Aided Optical Manipulation of Biological Cells, pp. 652-657.

Ju, Tao — Joint Advanced Res. Center of Univ. of Science and Tech.
Liu, Shuang — City Univ. of Hong Kong, Kowloon, Hong Kong
Yang, Jie — Univ. of Science and Tech. of China
Sun, Dong — City Univ. of Hong Kong

14:45-15:00 — MonBT9.4

Optimal Design, Modeling and Analysis of a 2-DOF Nanopositioning Stage with Dual-Mode: Towards High-Rate AFM Scanning, pp. 658-663.

Tang, Hui — Univ. of Macau
Li, Yangmin — Univ. of Macau

MonBT10 — Lince

Manipulation Planning I (Regular Session)

Chair: De Luca, Alessandro — Univ. di Roma "La Sapienza"

14:00-14:15 — MonBT10.1

A Reasoning Architecture for Human-Robot Joint Tasks Using Physics-, Social-, and Capability-Based Logic, pp.

664-671.

Williams, Kenton	Massachusetts Inst. of Tech.
Breazeal, Cynthia	MIT

14:15-14:30 MonBT10.2

A Linear Relaxation Solution of the Tactical Movement Problem, pp. 672-677.

Beasley, Peter	Univ. of Queensland
McAree, Peter Ross	Univ. of Queensland

14:30-14:45 MonBT10.3

Two-Level RRT Planning for Robotic Push Manipulation, pp. 678-685.

Zito, Claudio	Univ. of Birmingham
Stolkin, Rustam	Univ. of Birmingham
Kopicki, Marek Sewer	Univ. of Birmingham
Wyatt, Jeremy	Univ. of Birmingham

14:45-15:00 MonBT10.4

Learning Operators for Manipulation Planning, pp. 686-693. Attachment

Burbridge, Christopher	Univ. of Birmingham
Saigol, Zeyn A	Univ. of Birmingham
Schmidt, Florian	German Aerospace Centre (DLR)
Borst, Christoph	German Aerospace Center (DLR)
Dearden, Richard	Univ. of Birmingham

MonBT11 Hidra

Robot Audition I (Invited Session)

Chair: Ince, Gokhan	Honda Res. Inst. Japan Co., Ltd.
Co-Chair: Martinson, Eric	US Naval Res. Lab.
Organizer: Ince, Gokhan	Istanbul Tech. Univ.
Organizer: Nakadai, Kazuhiro	Honda Res. Inst. Japan Co., Ltd.
Organizer: Okuno, Hiroshi G.	Kyoto Univ.
Organizer: Danès, Patrick	Univ. Toulouse - LAAS-CNRS - UPS
Organizer: Martinson, Eric	US Naval Res. Lab.
Organizer: Iwahashi, Naoto	National Inst. ofInformationandCommunicationsTechnology

14:00-14:15 MonBT11.1

Real-Time Super-Resolution Sound Source Localization for Robots, pp. 694-699.

Nakamura, Keisuke	Honda Res. Inst. Japan Co., Ltd.
Nakadai, Kazuhiro	Honda Res. Inst. Japan Co., Ltd.
Ince, Gokhan	Honda Res. Inst. Japan Co., Ltd.

14:15-14:30 MonBT11.2

Simple Auditory and Visual Features for Human-Robot Dialog Scene Analysis, pp. 700-706.

Yan, Rujiao	Bielefeld Univ.
Rodemann, Tobias	Honda Res. Inst. Europe
Wrede, Britta	Bielefeld Univ.

14:30-14:45 MonBT11.3

Bearing-Only Tracking with a Mixture of Von Mises Distributions, pp. 707-712.

Markovic, Ivan	Univ. of Zagreb
Petrovic, Ivan	Univ. of Zagreb

14:45-15:00 MonBT11.4

Spherical Microphone Array for Spatial Sound Localization for a Mobile Robot, pp. 713-718.

Sasaki, Yoko	National Inst. of Advanced Industrial Science andTechnology
Kabasawa, Mitsutaka	AIST
Thompson, Simon	National Inst. of Advanced Industrial Science
Kagami, Satoshi	National Inst. of AIST
Oro, Kyoichi	Kansai Electric Power Co. Inc.

MonCT1 Pegaso A

Calibration and Identification II (Regular Session)

Chair: Barreto, João P.	Univ. of Coimbra

15:00-15:15 MonCT1.1

Simultaneous Optimal Parameter and Mode Transition Time Estimation, pp. 719-724.

Miller, Lauren — Northwestern Univ.
Murphey, Todd — Northwestern Univ.

15:15-15:30 MonCT1.2

Semi-Parametric Gaussian Process for Robot System Identification, pp. 725-731.

Wu, Tingfan — UCSD
Movellan, Javier — Univ. California San Diego

15:30-15:45 MonCT1.3

Simultaneous Vision System Calibration and Full-Motion Estimation Using a Sequence of Noisy Images from a Stereo Affine Cameras, pp. 732-739.

Almeida Santos, Carlos Manuel — National Lab. for Civil Engineering
de Oliveira Costa, Carlos António — National Lab. for Civil Engineering
Batista, Jorge — Univ. of Coimbra

15:45-16:00 MonCT1.4

Comparative Study of Two 3D Reconstruction Methods for Underwater Archaeology, pp. 740-745.

Meline, Arnaud — Univ. Montpellier 2, LIRMM
Triboulet, Jean — LIRMM
Jouvencel, Bruno — Univ. of Montpellier 2 - CNRS UMR5506 -LIRMM

MonCT2 — Fenix 2
Human Robot Interaction II (Regular Session)

Chair: Oh, Sang-Rok — KIST
Co-Chair: Lambrecht, Jens — Berlin Inst. of Tech.

15:00-15:15 MonCT2.1

Development of a Wearable and Dry Semg Electrode System for Decoding of Human Hand Configurations, pp. 746-750.

Lee, HanJin — Korea Inst. Science and Tech.
Kim, Keehoon — Korea Inst. of Science and Tech.
Oh, Sang-Rok — KIST

15:15-15:30 MonCT2.2

Incremental Action Recognition and Generalizing Motion Generation Based on Goal-Directed Features, pp. 751-757.

Gräve, Kathrin — Univ. of Bonn
Behnke, Sven — Univ. of Bonn

15:30-15:45 MonCT2.3

Analysis of Power Assist Effect During Skill Assist for Periodic Motions under Use of Semi-Active Assist Mechanisms, pp. 758-763.

Kusaka, Takashi — Hokkaido Univ.
Tanaka, Takayuki — Hokkaido Univ.
Kaneko, Shun'ichi, Kaneko — Hokkaido Univ.
Kajiwara, Hidekazu — Kushiro National Coll. of Tech.

15:45-16:00 MonCT2.4

An Affordable, 3D-Printable Camera Eye with Two Active Degrees of Freedom for an Anthropomorphic Robot, pp. 764-771. Attachment

Schulz, Simon — Bielefeld Univ.
Lütkebohle, Ingo — Bielefeld Univ.
Wachsmuth, Sven — Bielefeld Univ.

MonCT3 — Pegaso B
Aerial Robotics II (Regular Session)

Chair: Stramigioli, Stefano — Univ. of Twente
Co-Chair: Carloni, Raffaella — Univ. of Twente

15:00-15:15 MonCT3.1

Low-Power Parallel Algorithms for Single Image Based Obstacle Avoidance in Aerial Robots, pp. 772-779. Attachment

Lenz, Ian — Cornell Univ.
Gemici, Mevlana Celaleddin — Cornell Univ.
Saxena, Ashutosh — Cornell Univ.

15:15-15:30 MonCT3.2

Critical Subsystem Failure Mitigation in an Indoor UAV Testbed, pp. 780-785.

Mueller, Mark Wilfried — ETH Zurich
D'Andrea, Raffaello — ETHZ

15:30-15:45 MonCT3.3

Omni-Directional Hovercraft Design As a Foundation for MAV Education, pp. 786-792.

Detweiler, Carrick — Univ. of Nebraska-Lincoln
Griffin, Brent Austin — Univ. of Nebraksa-Lincoln
Roehr, Heath — Univ. of Nebraska-Lincoln

15:45-16:00 MonCT3.4

A Comparison of Deterministic and Stochastic Approaches for Allocating Spatially Dependent Tasks in Micro-Aerial Vehicle Collectives, pp. 793-800.

Dantu, Karthik — Harvard Univ.
Berman, Spring — Arizona State Univ.
Kate, Bryan — Harvard Univ.
Nagpal, Radhika — Harvard Univ.

MonCT4 — Fenix 3

Biologically Inspired Robotics II (Regular Session)

Chair: Asfour, Tamim — Karlsruhe Inst. of Tech. (KIT)
Co-Chair: Iida, Fumiya — ETH Zurich

15:00-15:15 MonCT4.1

Multi-Robot Foraging Based on Darwin's Survival of the Fittest, pp. 801-806. Attachment

Couceiro, Micael — Insitute of Systems and Robotics
Rocha, Rui Paulo — Inst. of Systems and Robotics - Univ. of Coimbra
Figueiredo, Carlos — Coimbra Inst. of Engineering
Luz, J. Miguel A. — RoboCorp, Department of Electrotechnical Engineering (DEE), Engi
Fonseca Ferreira, Nuno Miguel — Inst. of Engineering of Coimbra

15:15-15:30 MonCT4.2

Multimodal Saliency-Based Attention: A Lazy Robot's Approach, pp. 807-814.

Kuehn, Benjamin — Karlsruhe Inst. of Tech. (KIT)
Schauerte, Boris — Karlsruhe Inst. of Tech.
Kroschel, Kristian — Fraunhofer Inst. of Optronics, System Tech. and Image
Stiefelhagen, Rainer — Karlsruhe Inst. of Tech.

15:30-15:45 MonCT4.3

Generation of Robotic Fish Locomotion through Biomimetic Learning, pp. 815-821. Attachment

Ren, Qinyuan — National Univ. of Singapore
Xu, Jian-Xin — National Univ. of Singapore
Gao, Wenchao — National Univ. of Singapore
Niu, Xuelei — National Univ. of Singapore

15:45-16:00 MonCT4.4

A Hierarchical Connectionist CPG Controller for Controlling the Snake-Like Robot's 3-Dimensional Gaits, pp. 822-827.

Yang, Guizhi — Graduate Univ. of Chinese Acad. of Sciences, State Key La
Ma, Shugen — Ritsumeikan Univ.
Li, Bin — Shenyang Inst. of Automation
Wang, Minghui — Shenyang Inst. of Automation, Chinese Acad.

MonCT5 — Gemini 2

Distributed Robot Systems II (Regular Session)

Chair: Oriolo, Giuseppe — Univ. di Roma
Co-Chair: Di Caro, Gianni A. — IDSIA (USI/SUPSI)

15:00-15:15 MonCT5.1

An Efficient Distributed Topo-Geometric Spatial Density Estimation Method for Multi-Robot Systems, pp. 828-833.

Liu, Lantao — Texas A&M Univ.
Shell, Dylan — Texas A&M Univ.

15:15-15:30 MonCT5.2

Variation As an Element in Multi-Agent Control for Target Tracking, pp. 834-841.

Riggs, Cortney	Univ. of Central Florida
Wu, Annie	Univ. of Central Florida

15:30-15:45 MonCT5.3

Distributed Coverage While Not Being Covered, pp. 842-848. Attachment

Carpin, Stefano	Univ. of California, Merced

15:45-16:00 MonCT5.4

Automatic Extraction of Goal-Scoring Behaviors from Soccer Matches, pp. 849-856.

Almeida, Fernando	Superior School of Tech. of the Pol. Inst. of Vi
Abreu, Pedro Henriques	Univ. of Coimbra
Lau, Nuno	Aveiro Univ.
Reis, Luís Paulo	Univ. of Minho

MonCT6 Gemini 3

Localization and Mapping II (Regular Session)

15:00-15:15 MonCT6.1

Automatic Dense Visual Semantic Mapping from Street-Level Imagery, pp. 857-862. Attachment

Sengupta, Sunando	Oxford Brookes Univ.
Sturgess, Paul	Oxford Brookes Univ.
Ladický, Ľubor	Univ. of Oxford
Torr, Philip	Oxford Brookes

15:15-15:30 MonCT6.2

I See You, You See Me: Cooperative Localization through Bearing-Only Mutually Observing Robots, pp. 863-869.

Giguere, Philippe	Univ. Laval
Rekleitis, Ioannis	McGill Univ.
Latulippe, Maxime	Univ. Laval

15:30-15:45 MonCT6.3

Development of a Relative Localization Scheme for Ground-Aerial Multi-Robot Systems, pp. 870-875. Attachment

De Silva, Oscar	Memorial Univ.
Mann, George K. I.	Memorial Univ. of Newfoundland
Gosine, Raymond G.	Memorial Univ. of Newfoundland

15:45-16:00 MonCT6.4

Improvement of the Inertial Sensor-Based Localization for Mobile Robots Using Multiple Estimation Windows Filter, pp. 876-881.

Kwak, Hwan-Joo	Korea Univ.
Lee, Dong-Hun	Korea Univ.
Hwang, Jung-Moon	Seoul National Univ. of Science and Tech.
Kim, Jung Han	seoul national Univ. of Tech.
Kim, Chong-Kap	Hyundai-Kia Motors
Park, Gwi-Tae	Korea Univ.

MonCT7 Vega

Motion and Path Planning II (Regular Session)

Chair: Shiller, Zvi Ariel Univ. Center

15:00-15:15 MonCT7.1

Path Planning for Clothes Climbing Robots on Deformable Clothes Surface, pp. 882-887.

Liu, Yuanyuan	Shenzhen Inst. of Advanced Tech.
Wu, Xinyu	Shenzhen Inst. of Advanced Tech.
Song, Dezhen	Texas A&M Univ.
Fu, Ruiqing	Shenzhen Insitutes of Advanced Tech. Chinese Acad. Sci
Zheng, Duan	Guangxi Univ. Tech.
Xu, Yangsheng	Chinese Univ. of Hong Kong/ShenzhenInstituteofAdvancedTechn

15:15-15:30 MonCT7.2

Motion Planning for a Two-Link Planar Robot in a Viscous Environment, pp. 888-895. Attachment

Babikian, Sevag	American Univ. of Beirut
Shammas, Elie	American Univ. of Beirut
Asmar, Daniel	American Univ. of Beirut

15:30-15:45	MonCT7.3
Path Planning Based on Reaction-Diffusion Process, pp. 896-901. Attachment	
Alejandro, Vázquez-Otero	Univ. of Santiago de Compostela
Faigl, Jan	Czech Tech. Univ. in Prague
Alberto, Pérez Muñuzuri	Univ. of Santiago de Compostela
15:45-16:00	MonCT7.4
Socially Acceptable Robot Navigation: A Learning Approach, pp. 902-907.	
Luber, Matthias	Univ. of Freiburg
Spinello, Luciano	Univ. of Freiburg
Silva, Jens	Univ. of Freiburg
Arras, Kai Oliver	Univ. of Freiburg

MonCT8	Gemini 1
Novel Robot Design (Regular Session)	
Chair: Accoto, Dino	Univ. Campus Bio-Medico
Co-Chair: Vanderborght, Bram	Vrije Univ. Brussel
15:00-15:15	MonCT8.1
A Novel Design of a Robot That Can Jump and Roll with a Single Actuator, pp. 908-913.	
Ho, Thanhtam	Konkuk Univ.
Lee, Sangyoon	Konkuk Univ.
15:15-15:30	MonCT8.2
Electrostatic-Motor-Driven Electroadhesive Robot, pp. 914-919. Attachment	
Wang, Hongqiang	the Univ. of Tokyo
Yamamoto, Akio	Univ. of Tokyo
Higuchi, Toshiro	The Univ. of Tokyo
15:30-15:45	MonCT8.3
A Novel Design of Tri-Star Wheeled Mobile Robot for High Obstacle Climbing, pp. 920-925. Attachment	
Yang, Yong	CUHK
Qian, Huihuan	CUHK
Wu, Xinyu	Shenzhen Inst. of Advanced Tech.
Xu, Guiyun	China Univ. of Mining And Tech.
Xu, Yangsheng	The Chinese Univ. of Hong Kong
15:45-16:00	MonCT8.4
Development of an In-Pipe Inspection Robot for Narrow Pipes and Elbows Using Pneumatic Artificial Muscles, pp. 926-931.	
Ikeuchi, Megumi	Chuo Univ.
Nakamura, Taro	Chuo Univ.
Matsubara, Dai	Chuo Univ.

MonCT9	Fenix 1
Micro-Nano Scale Automation II (Regular Session)	
Chair: Fukuda, Toshio	Nagoya Univ.
Co-Chair: Eichhorn, Volkmar	Univ. of Oldenburg
15:00-15:15	MonCT9.1
Micro Fluidic Device to Control the Position and to Analyze the Condition of C. Elegans As a Bioindicator, pp. 932-937.	
Jung, Jaehoon	Nagoya Univ.
Nakajima, Masahiro	Nagoya Univ.
Kojima, Masaru	Osaka Univ.
Tajima, Hirotaka	Nagoya Univ.
Fukuda, Toshio	Nagoya Univ.
15:15-15:30	MonCT9.2
High Speed Cell Manipulation by Dielectrophoresis and Movable Microstructure Embedding Cells Fabricated Inside Microfluidic Chips, pp. 938-943.	
Yue, Tao	Nagoya Univ.
Nakajima, Masahiro	Nagoya Univ.
Kojima, Masaru	Nagoya Univ.
Fukuda, Toshio	Nagoya Univ.

Tajima, Hirotaka	Nagoya Univ.

15:30-15:45 MonCT9.3

Smooth Enucleation of Bovine Oocyte by Microrobot with Local Flow Speed Control in Microchannel, pp. 944-949. Attachment

Feng, Lin	Nagoya Univ.
Hagiwara, Masaya	Univ. of California, Los Angeles
Ichikawa, Akihiko	Nagoya Univ.
Kawahara, Tomohiro	Kyushu Inst. of Tech.
Arai, Fumihito	Nagoya Univ.

15:45-16:00 MonCT9.4

Interaction Force Estimation During Manipulation of Microparticles, pp. 950-956. Attachment

Khalil, Islam S.M.	Univ. of Twente
Metz, Roel M.P.	Univ. of Twente
Abelmann, Leon	Univ. of Twente
Misra, Sarthak	Univ. of Twente

MonCT10 Lince

Manipulation Planning II (Regular Session)

Chair: De Luca, Alessandro — Univ. di Roma "La Sapienza"

15:00-15:15 MonCT10.1

Constraint Propagation on Intervals Bounds for Dealing with Geometric Backtracking, pp. 957-964.

Lagriffoul, Fabien	Örebro Univ.
Dimitrov, Dimitar Nikolaev	Oerebro Univ.
Saffiotti, Alessandro	Orebro Univ.
Karlsson, Lars	Örebro Univ.

15:15-15:30 MonCT10.2

A Planning Method for Efficient Mobile Manipulation Considering Ambiguity, pp. 965-972.

Attamimi, Muhammad	The Univ. of Electro-Communications
Ito, Keisuke	The Univ. of Electro-Communications
Nakamura, Tomoaki	Univ. of Electro-Communications
Nagai, Takayuki	Univ. of Electro-Communications

15:30-15:45 MonCT10.3

Orienting Deformable Polygonal Parts without Sensors, pp. 973-979.

Kristek, Shawn	Texas A&M Univ.
Shell, Dylan	Texas A&M Univ.

15:45-16:00 MonCT10.4

Object Placement Planner for Robotic Pick and Place Tasks, pp. 980-985.

Harada, Kensuke	National Inst. of AIST
Tsuji, Tokuo	Kyushu Univ.
Nagata, Kazuyuki	National Inst. of AIST
Yamanobe, Natsuki	Advanced Industrial Science and Tech.
Onda, Hiromu	National Inst. of AIST
Kawai, Yoshihiro	National Inst. of Advanced Industrial ScienceandTechnology (

MonCT11 Hidra

Robot Audition II (Invited Session)

Chair: Okuno, Hiroshi G.	Kyoto Univ.
Co-Chair: Nakadai, Kazuhiro	Honda Res. Inst. Japan Co., Ltd.
Organizer: Ince, Gokhan	Istanbul Tech. Univ.
Organizer: Nakadai, Kazuhiro	Honda Res. Inst. Japan Co., Ltd.
Organizer: Okuno, Hiroshi G.	Kyoto Univ.
Organizer: Danès, Patrick	Univ. Toulouse - LAAS-CNRS - UPS
Organizer: Martinson, Eric	US Naval Res. Lab.
Organizer: Iwahashi, Naoto	National Inst. ofInformationandCommunicationsTechnology

15:00-15:15 MonCT11.1

Combining Laser Range Finders and Local Steered Response Power for Audio Monitoring, pp. 986-991.

Even, Jani — ATR

Ishi, Carlos Toshinori	ATR
Heracleous, Panikos	ATR Intelligent Robotics and Communication Lab.
Miyashita, Takahiro	ATR
Hagita, Norihiro	ATR

15:15-15:30 MonCT11.2

Live Assessment of Beat Tracking for Robot Audition, pp. 992-997.

Oliveira, João Lobato	Univ. do Porto - Faculdade de Engenharia
Ince, Gokhan	Honda Res. Inst. Japan Co., Ltd.
Nakamura, Keisuke	Honda Res. Inst. Japan Co., Ltd.
Nakadai, Kazuhiro	Honda Res. Inst. Japan Co., Ltd.
Okuno, Hiroshi G.	Kyoto Univ.
Reis, Luís Paulo	Univ. of Minho
Gouyon, Fabien	INESC Porto

15:30-15:45 MonCT11.3

A Versatile System-On-A-Programmable-Chip for Array Processing and Binaural Robot Audition, pp. 998-1003.

Lunati, Valentin	CNRS; LAAS ; 7, avenue du Colonel Roche, F-31077 Toulouse,France
Manhes, Jérôme	CNRS; LAAS
Danes, Patrick	Univ. Toulouse - LAAS-CNRS - UPS

15:45-16:00 MonCT11.4

Towards a Systematic Study of Binaural Cues, pp. 1004-1009.

Youssef, Karim	Univ. Pierre et Marie Curie; Inst. desSystèmesIntelligen
Argentieri, Sylvain	Univ. PierreetMarieCurie;Inst. (I
Zarader, Jean-Luc	Univ. Pierre et Marie Curie

MonDT1 Pegaso A

Applications of RGB-D Cameras (Regular Session)

Chair: Papanikolopoulos, Nikos	Univ. of Minnesota
Co-Chair: Frisoli, Antonio	Scuola Superiore Sant'Anna

16:15-16:30 MonDT1.1

Detecting Risk-Markers in Children in a Preschool Classroom, pp. 1010-1016. Attachment

Fasching, Joshua	Univ. of Minnesota
Walczak, Nicholas	Univ. of Minnesota
Sivalingam, Ravishankar	Univ. of Minnesota
Cullen, Kathryn	UMN
Murphy, Barbara	Univ. of Minnesota
Sapiro, Guillermo	Univ. of Minnesota
Morellas, Vassilios	U. of Minnesota
Papanikolopoulos, Nikos	Univ. of Minnesota

16:30-16:45 MonDT1.2

Scene Adaptive RGB-D Based Oscillation Sensing for a Multi Flexible Link Robot Arm in Unstructured Dynamic Environments, pp. 1017-1022.

Malzahn, Jörn	Tech. Univ. Dortmund
Phung, Anh Son	Tech. Univ. Dortmund
Bertram, Torsten	Tech. Univ. Dortmund

16:45-17:00 MonDT1.3

Estimation of the Center of Mass with Kinect and Wii Balance Board, pp. 1023-1028. Attachment

González, Alejandro	LIRMM
Hayashibe, Mitsuhiro	INRIA
Fraisse, Philippe	LIRMM

17:00-17:15 MonDT1.4

Egocentric Real-Time Workspace Monitoring Using an RGB-D Camera, pp. 1029-1036. Attachment

Damen, Dima	Univ. of Bristol
Gee, Andrew	Univ. of Bristol
Mayol, Walterio	Univ. of Bristol
Calway, Andrew	Univ. of Bristol

17:15-17:30 MonDT1.5

A New Kinect-Based Guidance Mode for Upper Limb Robot-Aided Neurorehabilitation, pp. 1037-1042.

Loconsole, Claudio	Scuola Superiore Sant'Anna
Bannò, Filippo	Scuola Superiore Sant'Anna
Frisoli, Antonio	Scuola Superiore Sant'Anna
Bergamasco, Massimo	Scuola Superiore S.Anna

MonDT2	Fenix 2
Visual Navigation (Regular Session)	
Chair: Zhang, Hong	Univ. of Alberta
Co-Chair: Mourikis, Anastasios	Univ. of California, Riverside
16:15-16:30	MonDT2.1
Mobile Robot Monocular Vision Navigation Based on Road Region and Boundary Estimation, pp. 1043-1050. Attachment	
Chang, Chin-Kai	iLab Univ. of Southern California
Siagian, Christian	Univ. of Southern California
Itti, Laurent	Univ. of Southern California
16:30-16:45	MonDT2.2
Visual Loop Closure Detection with a Compact Image Descriptor, pp. 1051-1056.	
Liu, Yang	Univ. of Alberta
Zhang, Hong	Univ. of Alberta
16:45-17:00	MonDT2.3
Vision-Aided Inertial Navigation for Resource-Constrained Systems, pp. 1057-1063.	
Li, Mingyang	Univ. of California, Riverside
Mourikis, Anastasios	Univ. of California, Riverside
17:00-17:15	MonDT2.4
Estimator Initialization in Vision-Aided Inertial Navigation with Unknown Camera-IMU Calibration, pp. 1064-1071.	
Dong-Si, Tue-Cuong	Univ. of California, Riverside
Mourikis, Anastasios	Univ. of California, Riverside

MonDT3	Pegaso B
Education and Entertainment Robotics (Regular Session)	
Chair: Fiorini, Paolo	Univ. of Verona
Co-Chair: Beardsley, Paul	Disney Res. Zurich
16:15-16:30	MonDT3.1
The RobotChallenge – a Research Inspired Practical Lecture, pp. 1072-1077.	
Munske, Benjamin	Leibniz Univ. of Hannover
Kotlarski, Jens	Leibniz Univ. Hannover
Ortmaier, Tobias	Leibniz Univ. Hanover
16:30-16:45	MonDT3.2
Object and Animation Display with Multiple Aerial Vehicles, pp. 1078-1083. Attachment	
Alonso-Mora, Javier	ETH / Disney Res. Zurich
Schoch, Marcel	ETH Zurich
Breitenmoser, Andreas	ETH Zurich
Siegwart, Roland	ETH Zurich
Beardsley, Paul	Disney Res. Zurich
16:45-17:00	MonDT3.3
Kindergarten Assistive Robotics (KAR) As a Tool for Spatial Cognition Development in Pre-School Education, pp. 1084-1089.	
Keren, Guy	Ariel Univ. Center
Ben-David, Adi	Hebrew Univ. of Jerusalem
Marina, Fridin	Ariel Univ. Center
17:00-17:15	MonDT3.4
Development of an Arm Robot for Neurologic Examination Training, pp. 1090-1095. Attachment	
Wang, Chunbao	Waseda Univ.
Ebihara, Kazuki	Waseda Univ.
Noh, Yohan	Waseda Univ.
Tokumoto, Mitsuhiro	Waseda Univ.
Ishii, Hiroyuki	Waseda Univ.

Takanishi, Atsuo	Waseda Univ.
Hatake, Kazuyuki	KYOTOKAGAKU co., Ltd.
Shoji, Satoru	KYOTOKAGAKU co., Ltd.
Okuyama, Isamu	Waseda Univ.
Chihara, Terunaga	Waseda Univ.
17:15-17:30	MonDT3.5
Passive-Type Aerial Acrobat Robot Climbing up Row of Swings with Rising Slope, pp. 1096-1101. Attachment	
Nishibori, Kento	Gifu Univ.
Nishibori, Kenji	Daido Univ.

MonDT4	Fenix 3
Bio-Inspired Aerial Robots (Regular Session)	
Chair: Robuffo Giordano, Paolo	Max Planck Inst. for Biological Cybernetics
Co-Chair: Viollet, Stephane	Aix-Marseille Univ.
16:15-16:30	MonDT4.1
Aerodynamic Evaluation of Four Butterfly Species for the Design of Flapping-Gliding Robotic Insects, pp. 1102-1109.	
Kovac, Mirko	Harvard
Vogt, Daniel	Harvard Univ.
Ithier, Danielle	Harvard Univ.
Smith, Michael	Harvard Univ.
Wood, Robert	Harvard Univ.
16:30-16:45	MonDT4.2
Bio-Inspired Hovering Control for an Aerial Robot Equipped with a Decoupled Eye and a Rate Gyro, pp. 1110-1117.	
Manecy, Augustin	GIPSA-Lab. Mediterranée
Viollet, Stephane	Aix-Marseille Univ.
Marchand, Nicolas	GIPSA-Lab. CNRS/U of Grenoble/INRIA
16:45-17:00	MonDT4.3
A Miniature Bio-Inspired Position Sensing Device for the Control of Micro-Aerial Robots, pp. 1118-1124. Attachment	
Juston, Raphael	Aix-Marseille Univ.
Viollet, Stephane	Aix-Marseille Univ.
17:00-17:15	MonDT4.4
Controlling Docking, Altitude and Speed in a Circular High-Roofed Tunnel Thanks to the Optic Flow, pp. 1125-1132.	
Expert, Fabien	Aix Marseille Univ. / CNRS
Ruffier, Franck	CNRS / Aix-Marseille Univ.
17:15-17:30	MonDT4.5
Design, Fabrication, and Modeling of the Split Actuator Microrobotic Bee, pp. 1133-1140.	
Ma, Kevin	Harvard Univ.
Felton, Samuel	Harvard Univ.
Wood, Robert	Harvard Univ.

MonDT5	Gemini 2
Adaptive Control (Regular Session)	
Chair: Albu-Schäffer, Alin	DLR - German Aerospace Center
Co-Chair: Veloso, Manuela	Carnegie Mellon Univ.
16:15-16:30	MonDT5.1
Mobile Robot Control on Uneven and Slippery Ground: An Adaptive Approach Based on a Multi-Model Observer, pp. 1141-1148. Attachment	
Lenain, Roland	Irstea
Thuilot, Benoit	Clermont-Ferrand Univ.
16:30-16:45	MonDT5.2
Adaptive Friction Compensation in Trajectory Tracking Control of DLR Medical Robots with Elastic Joints, pp. 1149-1154.	
Le-Tien, Luc	German Aerospace Center (DLR)
Albu-Schäffer, Alin	DLR - German Aerospace Center
16:45-17:00	MonDT5.3
Adaptive Reactionless Motion with Joint Limit Avoidance for Robotic Capture of Unknown Target in Space, pp. 1155-1160. Attachment	
Nguyen Huynh, Thai Chau	McGill Univ.

Sharf, Inna	McGill Univ.

17:00-17:15 MonDT5.4

Adaptive Grip Control on an Uncertain Object, pp. 1161-1166. Attachment

Jiang, Allen	King's Coll. London
Bimbo, Joao	King's Coll. London
Goulder, Simon Francis	King's Coll. London
Liu, Hongbin	King's Coll. London
Song, Xiaojing	King's Coll. London
Dasgupta, Prokar	King's Coll. London
Althoefer, Kaspar	Kings Coll. London
Nanayakkara, Thrishantha	King's Coll. Univ. of London

17:15-17:30 MonDT5.5

Adaptive Control for Robot Manipulators under Ellipsoidal Task Space Constraints, pp. 1167-1172.

Tee, Keng Peng	Inst. for Infocomm Res.
Ge, Shuzhi Sam	National Univ. of Singapore
Yan, Rui	Inst. for Infocomm Res.
Li, Haizhou	Inst. for Infocomm Res.

MonDT6 — Gemini 3

Collision Avoidance I (Regular Session)

16:15-16:30 MonDT6.1

Control by Gradient Collocation: Applications to Optimal Obstacle Avoidance and Minimum Torque Control, pp. 1173-1179.

Ruvolo, Paul	UCSD
Wu, Tingfan	UCSD
Movellan, Javier	Univ. California San Diego

16:30-16:45 MonDT6.2

Stochastic Situation Assessment in Advanced Driver Assistance System for Complex Multi-Objects Traffic Situations, pp. 1180-1185.

Berthelot, Adam	Daimler AG
Tamke, Andreas	Daimler AG
Dang, Thao	Univ. Karlsruhe
Breuel, Gabi	Daimler AG

16:45-17:00 MonDT6.3

Maneuver-Based Risk Assessment for High-Speed Automotive Scenarios, pp. 1186-1191.

Lawitzky, Andreas	Tech. Univ. München
Wollherr, Dirk	Tech. Univ. München
Buss, Martin	Tech. Univ. München

17:00-17:15 MonDT6.4

Collision Avoidance under Bounded Localization Uncertainty, pp. 1192-1198.

Claes, Daniel	Maastricht Univ.
Hennes, Daniel	Maastricht Univ.
Tuyls, Karl	Maastricht Univ.
Meeussen, Wim	Willow Garage inc.

17:15-17:30 MonDT6.5

Rotorcraft Collision Avoidance Using Spherical Image-Based Visual Servoing and Single Point Features, pp. 1199-1205. Attachment

Mcfadyen, Aaron Douglas	Queensland Univ. of Tech. Australian Res. f
Corke, Peter	QUT
Mejias, Luis	Queensland Univ. of Tech.

MonDT7 — Vega

Path Planning and Navigation (Regular Session)

16:15-16:30 MonDT7.1

Parallel Sampling-Based Motion Planning with Superlinear Speedup, pp. 1206-1212.

Ichnowski, Jeffrey	Univ. of North Carolina at Chapel Hill
Alterovitz, Ron	Univ. of North Carolina at Chapel Hill

16:30-16:45	MonDT7.2
DART: A Particle-Based Method for Generating Easy-To-Follow Directions, pp. 1213-1219.	
Goeddel, Robert	Univ. of Michigan
Olson, Edwin	Univ. of Michigan
16:45-17:00	MonDT7.3
Ribbon Model Based Path Tracking Method for Autonomous Land Vehicle, pp. 1220-1226.	
Sun, Zhenping	National Univ. of Defense Tech.
Chen, Qingyang	National Univ. of Defense Tech.
Nie, Yiming	Coll. of Mechatronic Engineering and Automation, National Univ.
Liu, Daxue	Coll. of Mechatronic Engineering and Automation, National Univ.
He, Han-gen	National Univ. of Defense Tech. China
17:00-17:15	MonDT7.4
Target Localization and Circumnavigation by a Non-Holonomic Robot, pp. 1227-1232. Attachment	
Deghat, Mohammad	Australia National Univ.
Davis, Edwin	ANU
See, Tianlong	ANU
Shames, Iman	Royal Inst. of Tech.
Anderson, Brian D. O.	Australian National Univ. and National ICT Australia
Yu, Changbin (Brad)	The Australian National Univ.
17:15-17:30	MonDT7.5
Avoiding Forgetfulness: Structured English Specifications for High-Level Robot Control with Implicit Memory, pp. 1233-1238.	
Raman, Vasumathi	Cornell Univ.
Xu, Bingxin	Cornell Univ.
Kress-Gazit, Hadas	Cornell Univ.

MonDT8	Gemini 1
Actuation Mechanism Design (Regular Session)	
Chair: Lefeber, Dirk	Vrije Univ. Brussel
Co-Chair: Carpino, Giorgio	Univ. Campus Bio-Medico
16:15-16:30	MonDT8.1
Development of Pneumatic Lower Limb Power Assist Wear without Exoskeleton, pp. 1239-1244. Attachment	
Sasaki, Daisuke	Okayama Univ.
Noritsugu, Toshiro	Okayama Univ.
Takaiwa, Masahiro	Okayama Univ.
16:30-16:45	MonDT8.2
A Study on Twisted String Actuation Systems: Mathematical Model and Its Experimental Evaluation, pp. 1245-1250.	
Popov, Dmitry	KOREATECH, Korea Univ. of Tech. and Education
Gaponov, Igor	Korea Univ. of Tech. and Education
Ryu, Jee-Hwan	Korea Univ. of Tech. and Education
16:45-17:00	MonDT8.3
Adaptive Synergies: An Approach to the Design of Under-Actuated Robotic Hands, pp. 1251-1256.	
Grioli, Giorgio	Univ. di Pisa
Catalano, Manuel	Faculty of Engineering - Univ. of Pisa
Silvestro, Emanuele	Faculty of Engineering - Univ. of Pisa
Tono, Simone	Faculty of Engineering - Univ. of Pisa
Bicchi, Antonio	Univ. di Pisa
17:00-17:15	MonDT8.4
Velvet Fingers: A Smart Gripper with Controlled Contact Surfaces, pp. 1257-1263.	
Tincani, Vinicio	Faculty of Engineering - Univ. of Pisa
Catalano, Manuel Giuseppe	Istituto Italiano di Tecnologia
Farnioli, Edoardo	Univ. di Pisa
Garabini, Manolo	Univ. di Pisa
Grioli, Giorgio	Univ. di Pisa
Fantoni, Gualtiero	Department of production Engineering
Bicchi, Antonio	Univ. di Pisa
17:15-17:30	MonDT8.5

Roll Motion Control by Stretch Reflex in a Continuously Jumping Musculoskeletal Biped Robot, pp. 1264-1269. Attachment

Shimizu, Masahiro — Osaka Univ.
Suzuki, Keiko — Osaka Univ.
Narioka, Kenichi — Osaka Univ.
Hosoda, Koh — Osaka Univ.

MonDT9 — Fenix 1

Control in Medical Robotics (Regular Session)

Chair: Fujie, Masakatsu G. — Waseda Univ.

16:15-16:30 — MonDT9.1

Application of Control Modes of a Master Manipulator for a Robotic System to Assist with Single Port Endoscopic Surgery, pp. 1270-1276.

Noguchi, Takehiko — Waseda Univ.
Kobayashi, Yo — Waseda Univ.
Kawamura, Kazuya — Chiba Univ.
Watanabe, Hiroki — Waseda Univ.
Tomono, Yu — Waseda Univ.
Sekiguchi, Yuta — Waseda Univ.
Seno, Hiroto — Waseda Univ.
Fujie, Masakatsu G. — Waseda Univ.
Toyoda, Kazutaka — Waseda Univ.
Hashizume, Makoto — Kyushu Univ.

16:30-16:45 — MonDT9.2

Hybrid Natural Admittance Control for Laparoscopic Surgery, pp. 1277-1283. Attachment

Deal, Aaron — Case Western Res. Univ.
Chow, Der-Lin — Case Western Res. Univ.
Newman, Wyatt — Case Western Res. Univ.

16:45-17:00 — MonDT9.3

Ergonomic Control Strategies for a Handheld Force-Controlled Ultrasound Probe, pp. 1284-1291.

Gilbertson, Matthew — Massachusetts Inst. of Tech.
Anthony, Brian W — MIT

17:00-17:15 — MonDT9.4

Design of an Intermediate Layer to Enhance Operator Awareness and Safety in Telesurgical Systems, pp. 1292-1297.

Cho, Jang Ho — Lund Univ.
From, Pål Johan — Norwegian Univ. of Life Sciences
Annerstedt, Magnus — Lund Univ. Hospital
Robertsson, Anders — LTH, Lund Univ.
Johansson, Rolf — Lund Univ.

17:15-17:30 — MonDT9.5

A Force Feedback System for Endovascular Catheterisation, pp. 1298-1304.

Payne, Christopher — Imperial Coll. London
Rafii-Tari, Hedyeh — Imperial Coll. London
Yang, Guang-Zhong — Imperial Coll. London

MonDT10 — Lince

Manipulation Planning and Learning (Regular Session)

Chair: Bernardino, Alexandre — Inst. Superior Técnico - Inst.

16:15-16:30 — MonDT10.1

Kinesthetic Teaching Via Fast Marching Square, pp. 1305-1310. Attachment

Gomez, Javier V. — Univ. Carlos III of Madrid
Alvarez, David — Univ. Carlos III of Madrid
Garrido, Santiago — Carlos III Univ.
Moreno, Luis — Carlos III Univ.

16:30-16:45 — MonDT10.2

Semantic Grasping: Planning Robotic Grasps Functionally Suitable for an Object Manipulation Task, pp. 1311-1317.

Dang, Hao — Columbia Univ.

Allen, Peter	Columbia Univ.

16:45-17:00 MonDT10.3

Trajectory Classification in N Dimensions Using Subspace Projection, pp. 1318-1323.

Nierhoff, Thomas	TU München
Hirche, Sandra	Tech. Univ. München

17:00-17:15 MonDT10.4

POMDP Approach to Robotized Clothes Separation, pp. 1324-1329.

Monsó, Pol	Inst. de Robòtica i Informàtica Industrial, CSIC-UPC
Torras, Carme	CSIC - UPC
Alenyà, Guillem	CSIC-UPC

17:15-17:30 MonDT10.5

Modeling and Planning High-Level In-Hand Manipulation Actions from Human Knowledge and Active Learning from Demonstration, pp. 1330-1336.

Prieur, Urbain	ISIR, Univ. Pierre and Marie Curie
Perdereau, Véronique	Univ. Pierre et Marie Curie - Paris 6
Bernardino, Alexandre	Inst. Superior Técnico - Inst. forSystemsandRobotics

MonDT11 Hidra

Knowledge Representation and Ontologies for Robotics and Automation (Invited Session)

Chair: Schlenoff, Craig	NIST
Co-Chair: Prestes, Edson	UFRGS
Organizer: Schlenoff, Craig	NIST
Organizer: Prestes, Edson	UFRGS

16:15-16:30 MonDT11.1

An IEEE Standard Ontology for Robotics and Automation, pp. 1337-1342.

Schlenoff, Craig	NIST
Prestes, Edson	UFRGS
Madhavan, Raj	UMD-CP/NIST
Gonçalves, Paulo	Pol. Inst. of Castelo Branco
Li, Howard	Univ. of New Brunswick
Balakirsky, Stephen	NIST
Kramer, Thomas	NIST
Miguelañez, Emilio	Seebyte Ltd.

16:30-16:45 MonDT11.2

AfRob: The Affordance Network Ontology for Robots, pp. 1343-1350.

Varadarajan, Karthik Mahesh	ACIN, TU Wien (Tech. Univ. of Vienna)
Vincze, Markus	Vienna Univ. of Tech.

16:45-17:00 MonDT11.3

A Unified Representation for Reasoning about Robot Actions, Processes, and Their Effects on Objects, pp. 1351-1358.

Tenorth, Moritz	ATR
Beetz, Michael	Tech. Univ. München

17:00-17:15 MonDT11.4

Towards an Ontology for Autonomous Robots, pp. 1359-1364.

Paull, Liam	Univ. of New Brunswick
Severac, Gaetan	Univ. of Toulouse
Raffo, Guilherme V.	Univ. Federal de Santa Catarina
Angel, Julian Mauricio	Pontificia Univ. Javeriana
Boley, Harold	NRC
Habib, Maki Khalil	Saga Univ.
Nguyen, Bao	DRDC CORA
Sampath Kumar, Veera Ragavan	Monash Univ. Sunway Campus,
Saeedi Gharahbolagh, Sajad	Univ. of New Brunswick
Sanz, Ricardo	Univ. Pol. de Madrid
Seto, Mae	Defence R&D Canada
Stefanovski, Aleksandar	George Washington Univ.
Trentini, Michael	Defence Res. and Development Canada
Li, Howard	Univ. of New Brunswick
Durst, Phillip J	US Army ERDC

Gray, Wendell — US Army Engineer Res. and Development Center

17:15-17:30 — MonDT11.5

An Industrial Robotic Knowledge Representation for Kit Building Applications, pp. 1365-1370.

Balakirsky, Stephen — NIST
Kootbally, Zeid — National Inst. of Standards and Tech.
Schlenoff, Craig — NIST
Kramer, Thomas — NIST
Gupta, Satyandra K. — Univ. of Maryland, Coll. Park

MonET1 — Pegaso A
Recognition and Classification (Regular Session)

17:30-17:45 — MonET1.1

Room Classification Using a Hierarchical Representation of Space, pp. 1371-1378.

Ursic, Peter — Univ. of Ljubljana
Kristan, Matej — Univ. of Ljubljana
Skocaj, Danijel — Univ. of Ljubljana
Leonardis, Ales — Univ. of Ljubljana

17:45-18:00 — MonET1.2

Improving Generalization for 3D Object Categorization with Global Structure Histograms, pp. 1379-1386.

Madry, Marianna — Royal Inst. of Tech. (KTH)
Ek, Carl Henrik — Royal Inst. of Tech.
Detry, Renaud — Royal Inst. of Tech. (KTH)
Hang, Kaiyu — Royal Inst. of Tech. (KTH)
Kragic, Danica — KTH

18:00-18:15 — MonET1.3

Feature-Based Terrain Classification for LittleDog, pp. 1387-1392. Attachment

Filitchkin, Paul — Univ. of California Santa Barbara
Byl, Katie — UCSB

18:15-18:30 — MonET1.4

Classification of Materials in Natural Scenes Using Multi-Spectral Images, pp. 1393-1398.

Taghavi Namin, Sarah — National ICT Australia
Petersson, Lars — National ICT Australia

MonET2 — Fenix 2
Human-Robot Interaction III (Regular Session)

Chair: Christensen, Henrik Iskov — Georgia Inst. of Tech.
Co-Chair: Ogata, Tetsuya — Waseda Univ.

17:30-17:45 — MonET2.1

An Integrated Approach of Attention Control of Target Human by Nonverbal Behaviors of Robots in Different Viewing Situations, pp. 1399-1406.

Hoque, Mohammed Moshiul — Saitama Univ.
Das, Dipankar — Saitama Univ.
Onuki, Tomomi — Saitama Univ.
Kobayashi, Yoshinori — Saitama Univ.
Kuno, Yoshinori — Saitama Univ.

17:45-18:00 — MonET2.2

Can We Teach What Emotions a Robot Should Express?, pp. 1407-1412.

Ahn, Ho Seok — ATR (Advanced Telecommunications Res. Inst. Internationa
Choi, Jin Young — Seoul National Univ.

18:00-18:15 — MonET2.3

Who Is the Leader in a Multiperson Ensemble? ---Multiperson Human-Robot Ensemble Model with Leaderness, pp. 1413-1419.

Mizumoto, Takeshi — Kyoto Univ.
Ogata, Tetsuya — Waseda Univ.
Okuno, Hiroshi G. — Kyoto Univ.

18:15-18:30 — MonET2.4

Recognizing Affection for a Touch-Based Interaction with a Humanoid Robot, pp. 1420-1427. Attachment

Cooney, Martin D. — Osaka Univ. ATR
Nishio, Shuichi — Advanced Telecommunication Res. Inst. International
Ishiguro, Hiroshi — Osaka Univ.

MonET3 — Pegaso B
Cellular and Modular Robots (Regular Session)
Chair: Iida, Fumiya — ETH Zurich

17:30-17:45 — MonET3.1
Enhanced Robotic Body Extension with Modular Units, pp. 1428-1433. Attachment
Brodbeck, Luzius — ETH Zurich
Iida, Fumiya — ETH Zurich

17:45-18:00 — MonET3.2
SheetBot: A Magic Carpet That Enables Scaffold-Based Locomotion, pp. 1434-1439. Attachment
Kano, Takeshi — Tohoku Univ.
Watanabe, Yuki — Res. Inst. of Electrical Communication, Tohoku Univ.
Ishiguro, Akio — Tohoku Univ.

18:00-18:15 — MonET3.3
Motion Primitives for Path Following with a Self-Assembled Robotic Swimmer, pp. 1440-1446. Attachment
Orduno, Carlos Alberto — Univ. of Illinois at Urbana-Champaign
Becker, Aaron — Univ. of Illinois at Urbana-Champaign
Bretl, Timothy — Univ. of Illinois at Urbana-Champaign

18:15-18:30 — MonET3.4
The Milli-Motein: A Self-Folding Chain of Programmable Matter with a One Centimeter Module Pitch, pp. 1447-1453. Attachment
Knaian, Ara N — Massachusetts Inst. of Tech.
Cheung, Kenneth C. — Massachusetts Inst. of Tech.
Lobovsky, Maxim — Massachusetts Inst. of Tech.
Oines, Asa — Massachusetts Inst. of Tech.
Schmidt-Nielsen, Peter — Massachusetts Inst. of Tech.
Gershenfeld, Neil — Massachusetts Inst. of Tech.

MonET4 — Fenix 3
Biomimetics II (Regular Session)
Chair: Caldwell, Darwin G. — Itituto Italiano di Tecnologia
Co-Chair: Tangorra, James — Drexel Univ.

17:30-17:45 — MonET4.1
Biomimetic Sensing and Modeling of the Ocelli Visual System of Flying Insects, pp. 1454-1459.
Gremillion, Gregory — Univ. of Maryland, Coll. Park
Galfond, Marissa — Univ. of Maryland, Coll. Park
Krapp, Holger — Imperial Coll. London
Humbert, James Sean — Univ. of Maryland

17:45-18:00 — MonET4.2
Hover Kinematics and Distributed Pressure Sensing for Force Control of Biorobotic Fins, pp. 1460-1466.
Kahn, Jeff — Drexel Univ.
Flammang, Brooke — Harvard Univ.
Tangorra, James — Drexel Univ.

18:00-18:15 — MonET4.3
Sensing Capacitance of Underwater Objects in Bio-Inspired Electrosense, pp. 1467-1472.
Bai, Yang — Northwestern Univ.
Snyder, James — Northwestern Univ.
Silverman, Yonatan — Northwestern Univ.
Peshkin, Michael — Northwestern Univ.
MacIver, Malcolm A. — Northwestern Univ.

18:15-18:30 — MonET4.4
Tails in Biomimetic Design: Analysis, Simulation, and Experiment, pp. 1473-1480. Attachment
Briggs, Randall — MIT
Lee, Jongwoo — Massachusetts Inst. of Tech.

Haberland, Matt	Massachusetts Inst. of Tech.
Kim, Sangbae	Massachusetts Inst. of Tech.

MonET5	Gemini 2
Control and Learning (Regular Session)	
Chair: Sigaud, Olivier	Univ. Pierre et Marie Curie - Paris 6
17:30-17:45	MonET5.1
The Effects of Constraint Curvature on Projective and Set Stabilization Controllers, pp. 1481-1486.	
Walker, Kevin Casey	Univ. of Waterloo
Nielsen, Christopher	Univ. of Waterloo
Wang, David	Univ. of Waterloo
17:45-18:00	MonET5.2
Learning Whole Upper Body Control with Dynamic Redundancy Resolution in Coupled Associative Radial Basis Function Networks, pp. 1487-1492.	
Reinhart, Rene Felix	Bielefeld Univ.
Steil, Jochen J.	Bielefeld Univ.
18:00-18:15	MonET5.3
Learning and Generalizing Force Control Policies for Sculpting, pp. 1493-1498.	
Koropouli, Vasiliki	Tech. Univ. München
Hirche, Sandra	Tech. Univ. München
Lee, Dongheui	Tech. Univ. of Munich
18:15-18:30	MonET5.4
An Online Algorithm for Simultaneously Learning Forward and Inverse Kinematics, pp. 1499-1506.	
Damas, Bruno	Inst. Superior Técnico
Santos-Victor, José	Inst. Superior Técnico - Lisbon

MonET6	Gemini 3
Collision Avoidance II (Regular Session)	
17:30-17:45	MonET6.1
Transferring Spatial Perception between Robots Operating in a Shared Workspace, pp. 1507-1512.	
Leitner, Jurgen	Dalle Molle Inst. for Artificial Intelligence (IDSIA) / SUPS
Harding, Simon	IDSIA, SUPSI, USI
Frank, Mikhail	IDSIA, SUPSI, USI
Forster, Alexander	USI/SUPSI, IDSIA
Schmidhuber, Jurgen	Tech. Univ. München
17:45-18:00	MonET6.2
Accurate Evaluation of a Distance Function for Optimization-Based Motion Planning, pp. 1513-1518. Attachment	
Lee, Youngeun	Ewha Womans Univ.
Lengagne, Sebastien	Karlsruhe Inst. of Tech.
Kheddar, Abderrahmane	Intelligent Systems Res. Inst.
Kim, Young J.	Ewha Womans Univ.
18:00-18:15	MonET6.3
Humanoid Throwing: Design of Collision-Free Trajectories with Sparse Reachable Maps, pp. 1519-1524.	
Lofaro, Daniel	Drexel Univ.
Ellenberg, Robert	Drexel Univ.
Oh, Paul Y.	Drexel Univ.
Oh, Jun Ho	Korea Advanced Inst. of Sci. and Tech.
18:15-18:30	MonET6.4
Motion Planning with Worker's Trajectory Prediction for Assembly Task Partner Robot, pp. 1525-1532.	
Tanaka, Yasufumi	Tohoku Univ.
Kinugawa, Jun	Tohoku Univ.
Sugahara, Yusuke	Kokushikan Univ.
Kosuge, Kazuhiro	Tohoku Univ.

MonET7	Vega
Path Planning and Programming Environment (Regular Session)	

17:30-17:45	MonET7.1
Extracting Conditional Component Dependence for Distributed Robotic Systems, pp. 1533-1540.	
Purandare, Rahul	Univ. of Nebraska - Lincoln
Darsie, Javier Alejandro	Univ. of Nebraska-Lincoln
Elbaum, Sebastian	Univ. of Nebraska - Lincoln
Dwyer, Matthew	Univ. of Nebraska - Lincoln
17:45-18:00	MonET7.2
Evasion Planning for Autonomous Vehicles at Intersections, pp. 1541-1546. Attachment	
Au, Tsz-Chiu	The Univ. of Texas at Austin
Fok, Chien-Liang	The Univ. of Texas at Austin
Vishwanath, Sriram	The Univ. of Texas at Austin
Julien, Christine	The Univ. of Texas at Austin
Stone, Peter	Univ. of Texas at Austin
18:00-18:15	MonET7.3
Trajectory Clustering for Motion Prediction, pp. 1547-1552.	
Sung, Cynthia	MIT
Feldman, Dan	MIT CSAIL
Rus, Daniela	MIT
18:15-18:30	MonET7.4
Road Direction Detection Based on Vanishing-Point Tracking, pp. 1553-1560.	
Moghadam, Peyman	CSIRO ICT Centre
Dong, Jun Feng	Singapore Inst. of Manufacturing Tech.

MonET8	Gemini 1
Parallel Robots (Regular Session)	
Chair: Martinet, Philippe	Ec. Centrale de Nantes
Co-Chair: Tadakuma, Riichiro	Yamagata Univ.
17:30-17:45	MonET8.1
A New Class of Locally Decoupled Gough-Stewart Platform Manipulators, pp. 1561-1566.	
Allais, Anthony	Univ. of Wyoming
McInroy, John	Univ. of Wyoming
O'Brien, John	Univ. of Wyoming
17:45-18:00	MonET8.2
A Novel Delta-Type Parallel Mechanism with Wire-Pulleys, pp. 1567-1572.	
Tsumaki, Yuichi	Yamagata Univ.
Eguchi, Hiroaki	Yamagata Univ.
Tadakuma, Riichiro	Yamagata Univ.
18:00-18:15	MonET8.3
Novel Algorithms for Computation of Inverse Kinematics and Inverse Dynamics of Gough-Stewart Platform, pp. 1573-1580.	
Fijany, Amir	Italian Inst. of Tech.
Fried, Georges	Univ. of Paris 12
18:15-18:30	MonET8.4
Vision-Based Modeling and Control of Large-Dimension Cable-Driven Parallel Robots, pp. 1581-1586.	
Dallej, Tej	LASMEA
Gouttefarde, Marc	LIRMM
Andreff, Nicolas	Univ. de Franche Comté
Dahmouche, Redwan	Univ. Blaise Pascal
Martinet, Philippe	Ec. Centrale de Nantes

MonET9	Fenix 1
Rehabilitation Robotics II (Regular Session)	
Chair: Ronsse, Renaud	Univ. catholique de Louvain
Co-Chair: Tagliamonte, Nevio Luigi	Univ. Campus Bio-Medico di Roma
17:30-17:45	MonET9.1
Slacking Prevention During Assistive Contour Following Tasks with Guaranteed Coupled Stability, pp. 1587-1594.	

Erdogan, Ahmetcan	Sabanci Univ.
Patoglu, Volkan	Sabanci Univ.

17:45-18:00 MonET9.2

Active Modular Elastomer Sleeve for Soft Wearable Assistance Robots, pp. 1595-1602. Attachment

Park, Yong-Lae	Harvard Univ.
Chen, Bor-rong	Harvard Univ.
Majidi, Carmel	Carnegie Mellon Univ.
Wood, Robert	Harvard Univ.
Nagpal, Radhika	Harvard Univ.
Goldfield, Eugene	Children's Hospital Boston, Harvard Medical School

18:00-18:15 MonET9.3

An Ankle Foot Orthosis with Insertion Point Eccentricity Control, pp. 1603-1608.

Polinkovsky, Arkady	Case Western Res. Univ. / Gearing Solutions
Bachmann, Richard J.	BioRobots, LLC
Kern, Nicole	Case Western Res. Univ.
Quinn, Roger, D.	Case Western Res. Univ.

18:15-18:30 MonET9.4

Exoskeleton Robot Control Based on Cane and Body Joint Synergies, pp. 1609-1614.

Hassan, Modar	Univ. of Tsukuba
Kadone, Hideki	Univ. of Tsukuba
Suzuki, Kenji	Univ. of Tsukuba
Sankai, Yoshiyuki	Univ. of Tsukuba

MonET10 Lince

Concept Learning (Regular Session)

Chair: Wagner, Alan Richard — Georgia Inst. of Tech. Res. Inst.

17:30-17:45 MonET10.1

Using Cluster-Based Stereotyping to Foster Human-Robot Cooperation, pp. 1615-1622.

Wagner, Alan Richard	Georgia Inst. of Tech. Res. Inst.

17:45-18:00 MonET10.2

Online Learning of Concepts and Words Using Multimodal LDA and Hierarchical Pitman-Yor Language Model, pp. 1623-1630.

Araki, Takaya	Univ. of Electro-Communications
Nakamura, Tomoaki	Univ. of Electro-Communications
Nagai, Takayuki	Univ. of Electro-Communications
Nagasaka, Shogo	Ritsumeikan Univ.
Taniguchi, Tadahiro	Ritsumeikan Univ.
Iwahashi, Naoto	National Inst. ofInformationandCommunicationsTechnology

18:00-18:15 MonET10.3

Adaptive Exploration for Continual Reinforcement Learning, pp. 1631-1636.

Stulp, Freek	École Nationale Supérieure de Tech. Avancées

18:15-18:30 MonET10.4

Applying a Learning Framework for Improving Success Rates in Industrial Bin Picking, pp. 1637-1643.

Ellekilde, Lars-Peter	Univ. of Southen Denmark
Jørgensen, Jimmy Alison	Univ. of Southern Denmark
Kraft, Dirk	Univ. of Southern Denmark
Krüger, Norbert	Univ. of Southern Denmark
Piater, Justus	Univ. of Innsbruck
Petersen, Henrik Gordon	Univ. of Southern Denmark

MonET11 Hidra

Personal Robots I (Invited Session)

Chair: Kronreif, Gernot	Integrated Microsystems Austria GmbH
Co-Chair: Soroka, Anthony John	Cardiff Univ.
Organizer: Soroka, Anthony John	Cardiff Univ.
Organizer: Qiu, Renxi	Cardiff Univ.
Organizer: Noyvirt, Alexandre	Cardiff Univ.

Organizer: Graf, Birgit	Fraunhofer IPA
Organizer: Li, Dayou	Univ. of Bedfordshire
Organizer: Arbeiter, Georg	Fraunhofer IPA
Organizer: Mast, Marcus	Stuttgart Media Univ.
Organizer: Rooker, Martijn Niels	PROFACTOR Produktionsforschungs GmbH
Organizer: Kronreif, Gernot	Integrated Microsystems Austria GmbH
Organizer: Ji, Ze	Cardiff Univ.

17:30-17:45 MonET11.1

Evaluation of 3D Feature Descriptors for Classification of Surface Geometries in Point Clouds, pp. 1644-1650.

Arbeiter, Georg	Fraunhofer IPA
Fuchs, Steffen	Fraunhofer
Bormann, Richard	Fraunhofer IPA
Fischer, Jan	Fraunhofer IPA
Verl, Alexander	Fraunhofer-Gesellschaft

17:45-18:00 MonET11.2

Towards a Robust Personal Assistant Robot: Experiences Gained in SRS Project, pp. 1651-1657.

Qiu, Renxi	Cardiff Univ.
Ji, Ze	Cardiff Univ.
Noyvirt, Alexandre	Cardiff Univ.
Soroka, Anthony John	Cardiff Univ.
Arbeiter, Georg	Fraunhofer IPA
Weisshardt, Florian	Fraunhofer IPA
Graf, Birgit	Fraunhofer IPA
Mast, Marcus	Stuttgart Media Univ.
Rooker, Martijn Niels	PROFACTOR Produktionsforschungs GmbH
Li, Dayou	Univ. of Bedfordshire
Kronreif, Gernot	Integrated Microsystems Austria GmbH
Xu, Shuo	Shanghai Univ.
Chivarov, Nayden	Inst. of Systems Engineering and Robotics of theBulgarian Ac
Liu, Beisheng	Univ. of Bedfordshire
Smrz, Pavel	Faculty of Information Tech. Brno Univ. of Tech.
Pham, Duc Truong	Cardiff Univ.
Lucia, Pigini	Fondazione Don Carlo Gnocchi Onlus
López Tarazón, Rafa	Robotnik Automation, SLL
Blasi, Lorenzo	HEWLETT-PACKARD ITALIANA SRL
Facal, David	Ingema Foundation

18:00-18:15 MonET11.3

Fuzzy Optimisation Based Symbolic Grounding for Service Robots, pp. 1658-1664.

Liu, Beisheng	Univ. of Bedfordshire
Li, Dayou	Univ. of Bedfordshire
Qiu, Renxi	Cardiff Univ.
Yue, Yong	Univ. of Bedfordshire
Maple, Carsten	Univ. of Bedfordshire
Gu, Shuang	Univ. of Bedfordshire

18:15-18:30 MonET11.4

Fast and Accurate Plane Segmentation in Depth Maps for Indoor Scenes, pp. 1665-1670.

Hulik, Rostislav	Faculty of Information Tech. Brno Univ. ofTechnology
Beran, Vitezslav	Faculty of Information Tech. Brno Univ.
Spanel, Michal	Faculty of Information Tech. Brno Univ. ofTechnology
Kršek, Přemysl	Faculty of Information Tech. Brno Univ. of Tech.
Smrz, Pavel	Faculty of Information Tech. Brno Univ. of Tech.

TueAT1	Pegaso A
Visual Servoing (Regular Session)	
Chair: Doignon, Christophe	Univ. of Strasbourg
Co-Chair: Gross, Horst-Michael	Ilmenau Univ. of Tech.
11:00-11:15	TueAT1.1
Stereo Visual Servoing with Decoupling Control, pp. 1671-1676.	
Alkhalil, Fadi	Univ. of Strasbourg
Doignon, Christophe	Univ. of Strasbourg
11:15-11:30	TueAT1.2
Library Automation Using Different Structures of Vision-Force Robot Control and Automatic Decision System, pp. 1677-1682.	
Bdiwi, Mohamad	Chemnitz Univ. of Tech.
Suchý, Jozef	Chemnitz Univ. of Tech.
11:30-11:45	TueAT1.3
Non-Central Catadioptric Cameras Visual Servoing for Mobile Robots Using a Radial Camera Model, pp. 1683-1688. Attachment	
Tahri, Omar	Inst. de Sistemas e Robótica, Univ. de Coimbra
Araujo, Helder	Univ. of Coimbra
11:45-12:00	TueAT1.4
Visual Servoing Using the Sum of Conditional Variance, pp. 1689-1694. Attachment	
Delabarre, Bertrand	IRISA, INRIA Rennes-Bretagne Atlantique
Marchand, Eric	Univ. de Rennes 1, IRISA, INRIA Rennes
12:00-12:15	TueAT1.5
Switching Controller for Efficient IBVS, pp. 1695-1701.	
Allibert, Guillaume	I3S
Courtial, Estelle	Lab. PRISME
12:15-12:30	TueAT1.6
Feed Forward Visual Servoing for Object Exploration, pp. 1702-1707. Attachment	
Pieters, Roel S.	Eindhoven Univ. of Tech.
Alvarez-Aguirre, Alejandro	Eindhoven Univ. of Tech. (TU/e)
Jonker, Pieter	Delft Univ. of Tech.
Nijmeijer, Hendrik	Eindhoven Univ. of Tech.

TueAT2	Fenix 2
RGB-D Sensing (Regular Session)	
11:00-11:15	TueAT2.1
A Novel Torchlight Data Association Strategy for Surface Registration, pp. 1708-1713.	
Wang, Han	Nanyang Tech. Univ.
Ying, Ying	Nanyang Tech. Univ.
11:15-11:30	TueAT2.2
A Robust RGB-D SLAM Algorithm, pp. 1714-1719.	
Hu, Gibson	Univ.
Huang, Shoudong	Univ. of Tech. Sydney
Zhao, Liang	Peking Univ. Univ. of Tech. Sydney
Alempijevic, Alen	Univ. of Tech. Sydney
Dissanayake, Gamini	Univ. of Tech. Sydney
11:30-11:45	TueAT2.3
BRAND: A Robust Appearance and Depth Descriptor for RGB-D Images, pp. 1720-1726.	
Nascimento, Erickson	Univ. Federal de Minas Gerais (UFMG)
Leivas, Gabriel	Univ. Federal de Minas Gerais
Campos, Mario Montenegro	Univ. Federal de Minas Gerais
Wilson Vieira, Antonio	Univ. Federal de Minas Gerais
Schwartz, William Robson	Federal Univ. of Minas Gerais
11:45-12:00	TueAT2.4

Indoor Mapping Using Planes Extracted from Noisy RGB-D Sensors, pp. 1727-1733.

Lee, Tae-kyeong	Pohang Univ. of Science and Tech.
Lim, Seungwook	POSTECH
Lee, Seongsoo	LG Electronics Inc.
An, Shounan	LG Electronics Inc.
Oh, Se-Young	POSTECH

12:00-12:15 TueAT2.5

3D Scene Segmentation for Autonomous Robot Grasping, pp. 1734-1740.

Ückermann, Andre	Bielefeld Univ.
Elbrechter, Christof	Bielefeld Univ.
Haschke, Robert	Bielefeld Univ.
Ritter, Helge Joachim	Bielefeld Univ.

12:15-12:30 TueAT2.6

Direct 3D Servoing Using Dense Depth Maps, pp. 1741-1746. Attachment

Teuliere, Celine	INRIA
Marchand, Eric	Univ. de Rennes 1, IRISA, INRIA Rennes

TueAT3 Pegaso B

Marine Robotics II (Regular Session)

Chair: Antonelli, Gianluca — Univ. degli Studi di Cassino

11:00-11:15 TueAT3.1

Multi-Domain Monitoring of Marine Environments Using a Heterogeneous Robot Team, pp. 1747-1753. Attachment

Shkurti, Florian	McGill Univ.
Xu, Anqi	McGill Univ.
Meghjani, Malika	McGill Univ.
Gamboa Higuera, Juan Camilo	McGill Univ.
Girdhar, Yogesh	McGill Univ.
Giguere, Philippe	Univ. Laval
Dey, Bir Bikram	Centre for Intelligent Machines, McGill Univ.
Li, Jimmy	McGill Univ.
Kalmbach, Arnold	McGill Univ.
Prahacs, Chris	McGill Univ.
Turgeon, Katrine	Univ. of Guelph
Rekleitis, Ioannis	McGill Univ.
Dudek, Gregory	McGill Univ.

11:15-11:30 TueAT3.2

Steady Spiraling Motion of Gliding Robotic Fish, pp. 1754-1759. Attachment

Zhang, Feitian	Michigan State Univ.
Zhang, Fumin	Georgia Inst. of Tech.
Tan, Xiaobo	Michigan State Univ.

11:30-11:45 TueAT3.3

A New Approach to Multi-Robot Harbor Patrolling: Theory and Experiments, pp. 1760-1765.

Marino, Alessandro	Univ. degli Studi di Salerno
Antonelli, Gianluca	Univ. degli Studi di Cassino
Aguiar, A. Pedro	Insituto Superior Técnico
Pascoal, Antonio	Inst. Superior Tecnico

11:45-12:00 TueAT3.4

Controller Performance of Marine Robots in Reminiscent Oil Surveys, pp. 1766-1771. Attachment

Mukhopadhyay, Shayok	Georgia Inst. of Tech.
Wang, Chuanfeng	Georgia Tech.
Steven, Bradshaw	Georgia Inst. of Tech.
Bazie, Valerie	Georgia Inst. of Tech.
Maxon, Sean	Georgia Inst. of Tech.
Hicks, Lisa	Georgia Inst. of Tech.
Patterson, Mark	Virginia Inst. of Marine Science
Zhang, Fumin	Georgia Inst. of Tech.

12:00-12:15 TueAT3.5

Agility for Underwater Floating Manipulation: Task & Subsystem Priority Based Control Strategy, pp. 1772-1779.

Casalino, Giuseppe	Univ. of Genova
Zereik, Enrica	CNR - National Res. Council
Simetti, Enrico	Univ. of Genoa
Torelli, Sandro	DIST - Univ. of Genova
Sperindé, Alessandro	Univ. of Genoa
Turetta, Alessio	Graal Tech. s.r.l.

12:15-12:30 TueAT3.6

Classification with Probabilistic Targets, pp. 1780-1786.

Bender, Asher	The Univ. of Sydney
Williams, Stefan Bernard	Univ. of Sydney
Pizarro, Oscar	Australian Centre for Field Robotics

TueAT4 Fenix 3

Humanoid Robots I (Regular Session)

Chair: Bidaud, Philippe — Univ. Pierre et Marie Curie - Paris 6

11:00-11:15 TueAT4.1

Toward Fast Policy Search for Learning Legged Locomotion, pp. 1787-1792.

Deisenroth, Marc Peter	TU Darmstadt
Calandra, Roberto	TU Darmstadt
Seyfarth, Andre	TU Darmstadt
Peters, Jan	Tech. Univ. Darmstadt

11:15-11:30 TueAT4.2

Event-Based Walking Control – from Neurobiology to Biped Robots, pp. 1793-1800.

Buschmann, Thomas	Tech. Univ. Muenchen
Ewald, Alexander	Tech. Univ. Muenchen
Ulbrich, Heinz	Tech. Univ. Muenchen
Büschges, Ansgar	Inst. for Zoology, Univ. of Cologne

11:30-11:45 TueAT4.3

Unified Preview Control for Humanoid Postural Stability and Upper-Limb Interaction Adaptation, pp. 1801-1808. Attachment

Ibanez, Aurélien	Inst. des Systèmes Intelligents et deRobotique,Univ. Pie
Bidaud, Philippe	Univ. Pierre et Marie Curie - Paris 6
Padois, Vincent	Univ. Pierre et Marie Curie

11:45-12:00 TueAT4.4

Improved Proposals for Highly Accurate Localization Using Range and Vision Data, pp. 1809-1814. Attachment

Osswald, Stefan	Univ. of Freiburg
Hornung, Armin	Univ. of Freiburg
Bennewitz, Maren	Univ. of Freiburg

12:00-12:15 TueAT4.5

Achievement of Complex Contact Motion with Environments by Musculoskeletal Humanoid Using Humanlike Shock Absorption Strategy, pp. 1815-1820. Attachment

Nakanishi, Yuto	The Univ. of Tokyo
Izawa, Tamon	The Univ. of Tokyo
Kurotobi, Tomoko	Tokyo Univ.
Urata, Junichi	The Univ. of Tokyo
Okada, Kei	The Univ. of Tokyo
Inaba, Masayuki	The Univ. of Tokyo

12:15-12:30 TueAT4.6

Bipedal Robotic Running with Partial Hybrid Zero Dynamics and Human-Inspired Optimization, pp. 1821-1827. Attachment

Huihua, Zhao	Univ. of Texas A&M
Nadubettu Yadukumar, Shishir	Texas A&M Univ.
Ames, Aaron	Texas A&M Univ.

TueAT5 Gemini 2

Legged Robots: Modeling and Control II (Regular Session)

Chair: Matsuno, Fumitoshi	Kyoto Univ.
Co-Chair: Osumi, Hisashi	Chuo Univ.
11:00-11:15	TueAT5.1
A Multi-Legged Robot with Less Actuators by Applying Passive Body Segment Joint, pp. 1828-1833.	
Tang, Yongchen	Ritsumeikan Univ.
Ma, Shugen	Ritsumeikan Univ.
Sun, Yi	Ritsumeikan Univ.
Ge, Dingxin	Ritsumeikan Univ.
11:15-11:30	TueAT5.2
Dynamic Horizontal Movement of a Bipedal Robot Using Frictional Asymmetry, pp. 1834-1839. Attachment	
Senoo, Taku	Univ. of Tokyo
Takano, Mitsuhiro	Univ. of Tokyo
Ishikawa, Masatoshi	Univ. of Tokyo
11:30-11:45	TueAT5.3
Leg-Grope-Walk -- Walking Strategy on Weak and Irregular Slopes for a Quadruped Robot by Force Distribution, pp. 1840-1845.	
Ambe, Yuichi	Kyoto Univ.
Matsuno, Fumitoshi	Kyoto Univ.
11:45-12:00	TueAT5.4
Continuous and Dynamically Equilibrated One-Legged Running Experiments: Motion Generation and Indirect Force Feedback Control, pp. 1846-1852. Attachment	
Ugurlu, Barkan	Toyota Tech. Inst.
Kawasaki, Takao	Toyota Tech. Inst.
Kawanishi, Michihiro	Toyota Tech. Inst.
Narikiyo, Tatsuo	Toyota Tech. Inst.
12:00-12:15	TueAT5.5
Time Optimal Control for Quadruped Robots by Using Torque Redundancy, pp. 1853-1858.	
Osumi, Hisashi	Chuo Univ.
Yokohama, Kazuya	Chuo Univ.
Takeuchi, Kyohei	Chuo Univ.
Nakamura, Ryosuke	Chuo Univ.
12:15-12:30	TueAT5.6
Nonlinear Model Predictive Control for Rough-Terrain Robot Hopping, pp. 1859-1864. Attachment	
Rutschmann, Martin	ETH Zurich
Satzinger, Brian	Univ. of California at Santa Barbara
Byl, Marten	Physical Sciences, Inc
Byl, Katie	UCSB

TueAT6	Gemini 3
Slam I (Regular Session)	
Chair: Chatila, Raja	ISIR
11:00-11:15	TueAT6.1
6DOF Semi-Rigid SLAM for Mobile Scanning, pp. 1865-1870. Attachment	
Elseberg, Jan	Jacobs Univ. Bremen
Borrmann, Dorit	Jacobs Univ.
Nuechter, Andreas	Jacobs Univ. Bremen gGmbH
11:15-11:30	TueAT6.2
Dynamic Pose Graph SLAM: Long-Term Mapping in Low Dynamic Environments, pp. 1871-1878. Attachment	
Walcott-Bryant, Aisha	MIT
Kaess, Michael	MIT
Johannsson, Hordur	MIT
Leonard, John	MIT
11:30-11:45	TueAT6.3
Switchable Constraints for Robust Pose Graph SLAM, pp. 1879-1884.	
Sünderhauf, Niko	Chemnitz Univ. of Tech.
Protzel, Peter	Chemnitz Univ. of Tech.
11:45-12:00	TueAT6.4

Active Pose SLAM, pp. 1885-1891.

Valencia, Rafael	CSIC-UPC
Valls Miro, Jaime	Univ. of Tech. Sydney
Dissanayake, Gamini	Univ. of Tech. Sydney
Andrade-Cetto, Juan	CSIC-UPC

12:00-12:15 TueAT6.5

Biped Control to Follow Arbitrary Referential Longitudinal Velocity Based on Dynamics Morphing, pp. 1892-1897.

Sugihara, Tomomichi	Graduate School of Engineering, Osaka Univ.

12:15-12:30 TueAT6.6

A Convex Optimization Based Approach for Pose SLAM Problems, pp. 1898-1903.

Liu, Minjie	Univ. of Tech.
Huang, Shoudong	Univ. of Tech. Sydney
Dissanayake, Gamini	Univ. of Tech. Sydney
Wang, Heng	Beijing Univ. of Tech.

TueAT7 Vega

Path Planning for Manipulators (Regular Session)

Chair: Khatib, Oussama — Stanford Univ.

11:00-11:15 TueAT7.1

Motion Planning with Constraints Using Configuration Space Approximations, pp. 1904-1910.

Sucan, Ioan Alexandru	Willow Garage
Chitta, Sachin	Willow Garage Inc.

11:15-11:30 TueAT7.2

Efficient Reaching Motion Planning and Execution for Exploration by Humanoid Robots, pp. 1911-1916.

Kanehiro, Fumio	National Inst. of AIST
Yoshida, Eiichi	National Inst. of AIST
Yokoi, Kazuhito	National Inst. of AIST

11:30-11:45 TueAT7.3

Generation of Collision-Free Trajectories for a Quadrocopter Fleet: A Sequential Convex Programming Approach, pp. 1917-1922. Attachment

Augugliaro, Federico	ETH Zurich
Schoellig, Angela P.	ETH Zürich
D'Andrea, Raffaello	ETHZ

11:45-12:00 TueAT7.4

Null Space Optimization for Effective Coverage of 3D Surfaces Using Redundant Manipulators, pp. 1923-1928.

Hess, Juergen Michael	Univ. of Freiburg
Tipaldi, Gian Diego	Univ. of Freiburg
Burgard, Wolfram	Univ. of Freiburg

12:00-12:15 TueAT7.5

Graph-Based Trajectory Planning through Programming by Demonstration, pp. 1929-1936.

Melchior, Nik	Carnegie Mellon Univ.
Simmons, Reid	Carnegie Mellon Univ.

12:15-12:30 TueAT7.6

Manipulation Planning with Soft Task Constraints, pp. 1937-1942. Attachment

Kunz, Tobias	Georgia Tech.
Stilman, Mike	Georgia Tech.

TueAT8 Gemini 1

Legged Robots II (Regular Session)

Chair: Fearing, Ronald	Univ. of California at Berkeley
Co-Chair: Kim, Sangbae	Massachusetts Inst. of Tech.

11:00-11:15 TueAT8.1

The Optimization of Spring Stiffness for Passive Dynamic Walker, pp. 1943-1949.

Hu, Biao	Tsinghua Univ.
Zhao, Mingguo	Tsinghua Univ.

11:15-11:30 TueAT8.2

Listen to Body's Message: Quadruped Robot That Fully Exploits Physical Interaction between Legs, pp. 1950-1955. Attachment

Owaki, Dai	Tohoku Univ.
Morikawa, Leona	Tohoku Univ.
Ishiguro, Akio	Tohoku Univ.

11:30-11:45 TueAT8.3

Rapid-Manufacturable Hair Sensor Array for Legged Millirobots, pp. 1956-1962. Attachment

Karras, Jaakko	Univ. of California, Berkeley
Haldane, Duncan	Univ. of California, Berkeley
Fearing, Ronald	Univ. of California at Berkeley

11:45-12:00 TueAT8.4

Composite Force Sensing Foot Utilizing Volumetric Displacement of a Hyperelastic Polymer, pp. 1963-1969. Attachment

Chuah, Meng Yee (Michael)	Massachusetts Inst. of Tech.
Estrada, Matthew	Massachusetts Inst. of Tech.
Kim, Sangbae	Massachusetts Inst. of Tech.

12:00-12:15 TueAT8.5

Actuator Design for High Force Proprioceptive Control in Fast Legged Locomotion, pp. 1970-1975. Attachment

Seok, SangOk	MIT
Wang, Albert	Massachusetts Inst. of Tech.
Otten, David	MIT
Kim, Sangbae	Massachusetts Inst. of Tech.

12:15-12:30 TueAT8.6

A Study of the Effect of Structural Damping on Gait Stability in Quadrupedal Locomotion Using a Musculoskeletal Robot, pp. 1976-1981.

Miki, Kenji	Osaka Inst. of Tech.
Tsujita, Katsuyoshi	Osaka Inst. of Tech.

TueAT9 Fenix 1

Minimally Invasive Surgery (Regular Session)

11:00-11:15 TueAT9.1

A Hand-Held Instrument for in Vivo Probe-Based Confocal Laser Endomicroscopy During Minimally Invasive Surgery, pp. 1982-1987.

Tun Latt, Win	Singapore Pol.
Chang, Tou Pin	Imperial Coll. London
di Marco, Aimee Natasha	Imperial Coll. London
Pratt, Philip	Imperial Coll.
Kwok, Ka Wai	Hamlyn Centre for Robotic Surgery
Clark, James	Imperial Coll. London
Yang, Guang-Zhong	Imperial Coll. London

11:15-11:30 TueAT9.2

Design of a Multitasking Robotic Platform with Flexible Arms and Articulated Head for Minimally Invasive Surgery, pp. 1988-1993. Attachment

Shang, Jianzhong	Imperial Coll. London
Payne, Christopher	Imperial Coll. London
Clark, James	Imperial Coll. London
Noonan, David	Imperial Coll. London
Kwok, Ka Wai	Hamlyn Centre for Robotic Surgery
Darzi, Ara	Imperial Coll. London
Yang, Guang-Zhong	Imperial Coll. London

11:30-11:45 TueAT9.3

Proprioceptive Magnetic-Field Sensing for Closed-Loop Control of Magnetic Capsule Endoscopes, pp. 1994-1999.

Miller, Katie	Univ. of Utah
Mahoney, Arthur	Univ. of Utah
Schmid, Thomas	Univ. of Utah
Abbott, Jake	Univ. of Utah

11:45-12:00 TueAT9.4

Micro Camera Augmented Endoscopic Instruments: Towards Superhuman Performance in Remote Surgical Cutting, pp. 2000-2006.

Staub, Christoph	TU Munich
Lenz, Claus	Tech. Univ. München
Jensen, Brian	TU München, Robotics and Embedded Systems
Can, Salman	Tech. Univ. München
Knoll, Alois	TU Munich
Bauernschmitt, Robert	German Heart Center Munich

12:00-12:15 TueAT9.5

Hierarchical Multi-Affine (HMA) Algorithm for Fast and Accurate Feature Matching in Minimally-Invasive Surgical Images, pp. 2007-2012.

Puerto, Gustavo Armando	Univ. of Texas at Arlington
Mariottini, Gian Luca	Univ. of Texas at Arlington

12:15-12:30 TueAT9.6

A Compact Navigation System for Free Hand Needle Placement in Percutaneos Procedures, pp. 2013-2018. Attachment

Dall'Alba, Diego	Univ. of Verona
Maris, Bogdan Mihai	Univ. of Verona
Fiorini, Paolo	Univ. of Verona

TueAT10 Lince

Grasping (Regular Session)

Chair: Calinon, Sylvain	Istituto Italiano di Tecnologia
Co-Chair: Vincze, Markus	Vienna Univ. of Tech.

11:00-11:15 TueAT10.1

Probabilistic Sensor-Based Grasping, pp. 2019-2026. Attachment

Laaksonen, Jonna	Lappeenranta Univ. of Tech.
Nikandrova, Ekaterina	Lappeenranta Univ. of Tech.
Kyrki, Ville	Aalto Univ.

11:15-11:30 TueAT10.2

Bridging the Gap: One-Shot Grasp Synthesis Approach, pp. 2027-2034.

El Khoury, Sahar	Ec. Pol. Federale de Lausanne
Li, Miao	École Pol. Fédérale de Lausanne
Billard, Aude	EPFL

11:30-11:45 TueAT10.3

Attention Driven Grasping for Clearing a Heap of Objects, pp. 2035-2042.

Varadarajan, Karthik Mahesh	ACIN, TU Wien (Tech. Univ. of Vienna)
Potapova, Ekaterina	TU Vienna
Vincze, Markus	Vienna Univ. of Tech.

11:45-12:00 TueAT10.4

Generalization of Human Grasping for Multi-Fingered Robot Hands, pp. 2043-2050. Attachment

Ben Amor, Heni	Tech. Univ. Darmstadt
Kroemer, Oliver	TU Darmstadt
Hillenbrand, Ulrich	German Aerospace Center (DLR)
Neumann, Gerhard	TU Darmstadt
Peters, Jan	Tech. Univ. Darmstadt

12:00-12:15 TueAT10.5

Empty the Basket - a Shape Based Learning Approach for Grasping Piles of Unknown Objects, pp. 2051-2057.

Fischinger, David	Vienna Univ. of Tech.
Vincze, Markus	Vienna Univ. of Tech.

12:15-12:30 TueAT10.6

Object-Dependent Estimation of Grasping Posture and Contact Region of Hand Based on Cluster Analysis, pp. 2058-2063.

Ariki, Yuka	National Inst. of Informatics
Miyata, Natsuki	Inst. of Advanced Industrial Sci. & Tech.
Endo, Yui	National Inst. of Advanced Industrial Science and Tech.
Tada, Mitsunori	Adv. Industrial Science and Tech.

TueAT11 Hidra

Robotic Sense of Movement (Regular Session)

Chair: Dario, Paolo	Scuola Superiore Sant'Anna
Co-Chair: Santos-Victor, José	Inst. Superior Técnico - Lisbon

11:00-11:15	TueAT11.1

Realization of Biped Walking on Soft Ground with Stabilization Control Based on Gait Analysis, pp. 2064-2069. Attachment

Hashimoto, Kenji	Waseda Univ.
Kang, Hyun-jin	Waseda Univ.
Nakamura, Masashi	Waseda Univ.
Falotico, Egidio	Scuola Superiore Sant'Anna
Lim, Hun-ok	Kanagawa Univ.
Takanishi, Atsuo	Waseda Univ.
Laschi, Cecilia	Scuola Superiore Sant'Anna
Dario, Paolo	Scuola Superiore Sant'Anna
Berthoz, Alain	CNRS - Coll. de France

11:15-11:30	TueAT11.2

Online Calibration of a Humanoid Robot Head from Relative Encoders, IMU Readings and Visual Data, pp. 2070-2075. Attachment

Moutinho, Nuno	Inst. Superior Técnico
Brandão, Martim	Waseda Univ.
Ferreira, Ricardo	Inst. Superior Técnico
Gaspar, Jose	Inst. Superior Técnico - Inst. for Systems and Robotics
Bernardino, Alexandre	Inst. Superior Técnico - Inst. forSystemsandRobotics
Santos-Victor, José	Inst. Superior Técnico - Lisbon
Takanishi, Atsuo	Waseda Univ.

11:30-11:45	TueAT11.3

A Robotic Implementation of a Bio-Inspired Head Motion Stabilization Model on a Humanoid Platform, pp. 2076-2081. Attachment

Kryczka, Przemyslaw	Waseda Univ.
Falotico, Egidio	Scuola Superiore Sant'Anna
Hashimoto, Kenji	Waseda Univ.
Lim, Hun-ok	Kanagawa Univ.
Takanishi, Atsuo	Waseda Univ.
Laschi, Cecilia	Scuola Superiore Sant'Anna
Dario, Paolo	Scuola Superiore Sant'Anna
Berthoz, Alain	CNRS - Coll. de France

11:45-12:00	TueAT11.4

Adaptive Movement Sequences and Predictive Decisions Based on Hierarchical Dynamical Systems, pp. 2082-2088. Attachment

Luksch, Tobias	Univ. of Kaiserslautern
Gienger, Michael	Honda Res. Inst. Europe
Mühlig, Manuel	CoR-Lab. Bielefeld, Honda Res. Inst. Europe
Yoshiike, Takahide	Honda Res. Inst. Europe GmbH

12:00-12:15	TueAT11.5

Self-Righting, Steering and Takeoff Angle Adjusting for a Jumping Robot, pp. 2089-2094. Attachment

Zhang, Jun	Southeast Univ.
Song, Guangming	Southeast Univ.
Li, Zhen	Southeast Univ.
Qiao, Guifang	Southeast Univ.
Sun, Hongtao	Southeast Univ.
Song, Aiguo	Southeast Univ.

12:15-12:30	TueAT11.6

Analytical Real-Time Pattern Generation for Trajectory Modification and Footstep Replanning of Humanoid Robots, pp. 2095-2100. Attachment

Santacruz, Carlos Felipe	The Univ. of Tokyo
Nakamura, Yoshihiko	Univ. of Tokyo

TueBT1	Pegaso A
Vision and 3D Data Processing I (Regular Session)	

14:00-14:15	TueBT1.1
Tracking People within Groups with RGB-D Data, pp. 2101-2107.	
Munaro, Matteo	Univ. of Padua
Basso, Filippo	Univ. of Padua
Menegatti, Emanuele	The Univ. of Padua
14:15-14:30	TueBT1.2
Vision-Based Hyper-Real-Time Object Tracker for Robotic Applications, pp. 2108-2115. Attachment	
Kolarow, Alexander	Ilmenau Univ. of Tech.
Brauckmann, Michael	L-1 Identity Solutions AG
Eisenbach, Markus	Ilmenau Univ. of Tech.
Schenk, Konrad	Ilmenau Univ. of Tech.
Einhorn, Erik	Ilmenau Univ. of Tech.
Debes, Klaus	Ilmenau Univ. of Tech.
Gross, Horst-Michael	Ilmenau Univ. of Tech.
14:30-14:45	TueBT1.3
YES - YEt Another Object Segmentation: Exploiting Camera Movement, pp. 2116-2121. Attachment	
Nalpantidis, Lazaros	Royal Inst. of Tech. (KTH)
Björkman, Mårten	KTH
Kragic, Danica	KTH
14:45-15:00	TueBT1.4
Constructing Dynamic Category Hierarchies for Novel Visual Category Discovery, pp. 2122-2127.	
Zhang, Jianhua	Univ. of Hamburg
Zhang, Jianwei	Univ. of Hamburg
Chen, S.Y.	Univ. of Hamburg
Hu, Ying	Shenzhen Inst. of Advanced Tech. ShenZhen, China
Guan, Haojun	Univ. of Hamburg

TueBT2	Fenix 2
Posture\Motion Recognition and Social Robotics I (Regular Session)	
Chair: Kwon, Dong-Soo	KAIST
14:00-14:15	TueBT2.1
Social Behavior Recognition Using Body Posture and Head Pose for Human-Robot Interaction, pp. 2128-2133.	
Gaschler, Andre Karlheinz	Tech. Univ. Muenchen
Jentzsch, Sören	fortiss GmbH, Tech. Univ. München
Giuliani, Manuel	Tech. Univ. München
Huth, Kerstin	Univ. Bielefeld
De Ruiter, Jan	Bielefeld Univ.
Knoll, Alois	TU Munich
14:15-14:30	TueBT2.2
Modeling Indicators of Coherent Motion, pp. 2134-2140.	
Yucel, Zeynep	ATR
Zanlungo, Francesco	Advanced Telecommunications Res. Inst.
Ikeda, Tetsushi	ATR
Miyashita, Takahiro	ATR
Hagita, Norihiro	ATR
14:30-14:45	TueBT2.3
Robust Head and Hands Tracking with Occlusion Handling for Human Machine Interaction, pp. 2141-2146.	
Chen, Bor-Jeng	National Taiwan Univ.
Huang, Cheng-Ming	National Taipei Univ. of Tech.
Tseng, Ting-En	National Taiwan Univ.
Fu, Li-Chen	National Taiwan Univ.
14:45-15:00	TueBT2.4
Estimation of Human Upper Body Orientation for Mobile Robotics Using an SVM Decision Tree on Monocular Images, pp. 2147-2152.	
Weinrich, Christoph	Ilmenau Univ. of Tech.
Vollmer, Christian	Ilmenau Univ. of Tech.
Gross, Horst-Michael	Ilmenau Univ. of Tech.

TueBT3	Pegaso B
Aerial Robotics III (Regular Session)	
Chair: Kim, H. Jin	Seoul National Univ.
Co-Chair: Sahai, Ranjana	Harvard Univ.
14:00-14:15	TueBT3.1
Robust Optical-Flow Based Self-Motion Estimation for a Quadrotor UAV, pp. 2153-2159.	
Grabe, Volker	Max Planck Inst. for Biological Cybernetics
Buelthoff, Heinrich H.	Max Planck Inst. for Biol. Cybernetics
Robuffo Giordano, Paolo	Max Planck Inst. for Biological Cybernetics
14:15-14:30	TueBT3.2
Modeling and Identification of a Small-Scale Unmanned Autonomous Helicopter, pp. 2160-2165.	
Koslowski, Markus	Univ. of Heidelberg
Kandil, Amr	Univ. of Heidelberg
Badreddin, Essameddin	Heidelberg Univ.
14:30-14:45	TueBT3.3
Coordination and Navigation of Heterogeneous UAVs-UGVs Teams Localized by a Hawk-Eye Approach, pp. 2166-2171.	
Saska, Martin	Czech Tech. Univ. in Prague
Vonasek, Vojtech	Czech Tech. Univ. in Prague
Krajnik, Tomas	Faculty of Electrical Engineering, Czech Tech. Univ.
Preucil, Libor	Czech Tech. Univ. in Prague
14:45-15:00	TueBT3.4
Generating Informative Paths for Persistent Sensing in Unknown Environments, pp. 2172-2179. Attachment	
Soltero, Daniel E.	Massachusetts Inst. of Tech.
Schwager, Mac	Boston Univ.
Rus, Daniela	MIT

TueBT4	Fenix 3
Biologically Inspired Robotics III (Regular Session)	
Chair: Asfour, Tamim	Karlsruhe Inst. of Tech. (KIT)
14:00-14:15	TueBT4.1
Capsule Gel Robot Driven by Self-Propelled Oil Droplet, pp. 2180-2185. Attachment	
Suzuki, Aya	Waseda Univ.
Maeda, Shingo	Shibaura Inst. of Tech.
Hara, Yusuke	National Inst. Science and Tech. , AIST
Hashimoto, Shuji	Waseda Univ.
14:15-14:30	TueBT4.2
Autonomous Failure Detection and Multimodal Sensor Fusion in a Modular Arm Model, pp. 2186-2191.	
Ehrenfeld, Stephan	Univ. of Tübingen
Butz, Martin Volker	Univ. of Tuebingen
14:30-14:45	TueBT4.3
Computed Muscle Control for an Anthropomimetic Elbow Joint, pp. 2192-2197. Attachment	
Jäntsch, Michael	Tech. Univ. of Munich
Wittmeier, Steffen	Tech. Univ. of Munich
Dalamagkidis, Konstantinos	TU Munich
Knoll, Alois	TU Munich
14:45-15:00	TueBT4.4
FES-Induced Muscular Torque Prediction with Evoked EMG Synthesized by NARX-Type Recurrent Neural Network, pp. 2198-2203.	
Li, Zhan	LIRMM/INRIA, Montpellier, France
Hayashibe, Mitsuhiro	INRIA
Zhang, Qin	INRIA/UM2
Guiraud, David	INRIA

TueBT5	Gemini 2
Legged Robots: Modeling and Control III (Regular Session)	
Chair: Hasegawa, Yasuhisa	Univ. of Tsukuba

Co-Chair: Osuka, Koichi — Osaka Univ.

14:00-14:15 — TueBT5.1

Posture Optimization Strategy for a Statically Stable Robot Traversing Rough Terrain, pp. 2204-2209. Attachment

Belter, Dominik — Poznan Univ. of Tech.
Skrzypczynski, Piotr — Poznan Univ. of Tech.

14:15-14:30 — TueBT5.2

Parallel Stiffness in a Bounding Quadruped with Flexible Spine, pp. 2210-2215. Attachment

Folkertsma, Gerrit Adriaan — Univ. of Twente
Kim, Sangbae — Massachusetts Inst. of Tech.
Stramigioli, Stefano — Univ. of Twente

14:30-14:45 — TueBT5.3

Optimal Control of Energetically Efficient Ladder Decent Motion with Internal Stress Adjustment Using Key Joint Method, pp. 2216-2221.

Lu, Zhiguo — Northeastern Univ.
Sekiyama, Kosuke — Nagoya Univ.
Aoyama, Tadayoshi — Hiroshima Univ.
Hasegawa, Yasuhisa — Univ. of Tsukuba
Kobayashi, Taisuke — Nagoya Univ.
Fukuda, Toshio — Nagoya Univ.

14:45-15:00 — TueBT5.4

Controllers for Robust Hopping with Upright Trunk Based on the Virtual Pendulum Concept, pp. 2222-2227.

Ahmad Sharbafi, Maziar — Univ. of Tehran
Maufroy, Christophe — Tech. Univ. Darmstadt
Maus, Horst Moritz — Univ. of Jena
Seyfarth, Andre — TU Darmstadt
Yazdanpanah, M. J. — Univ. of Tehran
Nili Ahmadabadi, Majid — Univ. of Tehran

TueBT6 — Gemini 3
Navigation I (Regular Session)

14:00-14:15 — TueBT6.1

Embedding Obstacle Avoidance to Trajectory Tracking for Unicycle Mobile Robots, pp. 2228-2233.

Resende, Cassius — Federal Inst. for Education, Science and Tech. of Espír
Carelli, Ricardo — Univ. Nacional de San Juan
Bastos-Filho, Teodiano — Federal Univ. of Espirito Santo
Sarcinelli-Filho, Mario — Federal Univ. of Espirito Santo

14:15-14:30 — TueBT6.2

Robotic Wheelchair with Autonomous Traveling Capability for Transportation Assistance in an Urban Environment, pp. 2234-2241. Attachment

Yokozuka, Masashi — National Inst. of Advanced Industrial Science and Tech.
Suzuki, Yusuke — Shibaura Inst. of Tech. Coll. of Systems Engineering
Hashimoto Naohisa, Naohisa — National Inst. of Advanced IndustrialScienceandTechnology
Matsumoto, Osamu — National Inst. of AIST

14:30-14:45 — TueBT6.3

Bayesian Optimisation for Intelligent Environmental Monitoring, pp. 2242-2249.

Marchant, Roman — Univ. of Sydney
Ramos, Fabio — Univ. of Sydney

14:45-15:00 — TueBT6.4

Path Following with Passive UHF RFID Received Signal Strength in Unknown Environments, pp. 2250-2255. Attachment

Liu, Ran — Univ. of Tuebingen
Koch, Artur — Univ. Tübingen
Zell, Andreas — Univ. of Tübingen

TueBT7 — Vega
Motion and Path Planning III (Regular Session)

Chair: Amato, Nancy — Texas A&M Univ.
Co-Chair: Rocco, Paolo — Pol. di Milano

14:00-14:15 TueBT7.1

Feedback Control of Many Differential-Drive Robots with Uniform Control Inputs, pp. 2256-2262. Attachment

Becker, Aaron — Univ. of Illinois at Urbana-Champaign
Onyuksel, Cem — Univ. of Illinois at Urbana Champaign
Bretl, Timothy — Univ. of Illinois at Urbana-Champaign

14:15-14:30 TueBT7.2

A Hierarchical Method for Stochastic Motion Planning in Uncertain Environments, pp. 2263-2268.

Vitus, Michael — Stanford Univ.
Zhang, Wei — The Ohio State Univ.
Tomlin, Claire — UC Berkeley

14:30-14:45 TueBT7.3

Path Planning with Probabilistic Roadmaps and Co-Safe Linear Temporal Logic, pp. 2269-2275.

Plaku, Erion — Catholic Univ. of America

14:45-15:00 TueBT7.4

A Novel Passivity-Based Control Law for Safe Human-Robot Coexistence, pp. 2276-2281.

Zanchettin, Andrea Maria — Pol. di Milano
Lacevic, Bakir — Univ. of Sarajevo
Rocco, Paolo — Pol. di Milano

TueBT8 Gemini 1
Mechanism Design I (Regular Session)

14:00-14:15 TueBT8.1

An Optimization Design Method for the Mechanism Parameters of an Amphibious Transformable Robot, pp. 2282-2288. Attachment

Li, Nan — Shenyang Inst. of Automation, Chinese Acad.
Ma, Shugen — Ritsumeikan Univ.
Wang, Minghui — Shenyang Inst. of Automation, Chinese Acad.
Li, Bin — Shenyang Inst. of Automation
Wang, Yuechao — Shenyang Inst. of Automation

14:15-14:30 TueBT8.2

Improved Grasp Robustness through Variable Transmission Ratios in Underactuated Fingers, pp. 2289-2294.

Spanjer, Stefan A.J. — Univ. of Twente
Balasubramanian, Ravi — Oregon State Univ.
Herder, Just — Delft Univ. of Tech.
Dollar, Aaron — Yale Univ.

14:30-14:45 TueBT8.3

Equivalent Negative Stiffness Mechanism Using Three Bundled Needles Inspired by Mosquito for Achieving Easy Insertion, pp. 2295-2300.

Aoyagi, Seiji — Kansai Univ.
Takaoki, Yutaka — Kansai Univ.
Takayanagi, Hiroki — Kansai Univ.
Huang, Chih-hao — Kansai Univ.
Tanaka, Takahiro — Kansai Univ.
Suzuki, Masato — Kansai Univ.
Takahashi, Tomokazu — Kansai Univ.
Kanzaki, Tsutomu — Dainihon Jochugiku Co., Ltd.
Matsumoto, Takuya — Okayama Univ.

14:45-15:00 TueBT8.4

Capstan Brake: Passive Brake for Tendon-Driven Mechanism, pp. 2301-2306.

In, HyunKi — Seoul National Univ.
Kang, SungKu — Seooul national Univ.
Cho, Kyu-Jin — Seoul National Univ. Biorobotics Lab.

TueBT9 Fenix 1
Micro-Nano Robotics I (Regular Session)

Chair: Nelson, Bradley J. — ETH Zurich
Co-Chair: Ferreira, Antoine — Ec. Nationale Supérieure d'Ingénieurs de Bourges

14:00-14:15	TueBT9.1
Control of Adhesion Using Surface Functionalisations for Robotic Microhandling, pp. 2307-2312.	
Dejeu, Jérôme	FEMTO-ST Inst.
Rougeot, Patrick	Univ. of Franche-Comté, FEMTO-ST Inst.
Lakard, Sophie	Univ. of Franche-Comté
Gauthier, Michael	FEMTO-ST Inst.
14:15-14:30	TueBT9.2
Computational Study of Superparamagnetic Nanocapsules Crossing the Blood-Brain Barrier: A Robotics Approach, pp. 2313-2318.	
Hamdi, Mustapha	Ec. Nationale des Ponts et Chaussees
Ferreira, Antoine	Ec. Nationale Supérieure d'Ingénieurs de Bourges
14:30-14:45	TueBT9.3
Haptic Shape Recognition and Localization of Nano Objects, pp. 2319-2324.	
Niguès, Antoine	Inst. Néel CNRS
Venant, Nicolas	Lab. ICA-ACROE
Rodrigues, Mário	Escola Superior de Tecnologia e Gestão de Águeda
Comin, Fabio	ESRF
Florens, Jean-Loup	INPG
Marchi, Florence	Inst. Néel CNRS
14:45-15:00	TueBT9.4
Magnetic Hysteresis for Multi-State Addressable Magnetic Microrobotic Control, pp. 2325-2331. Attachment	
Diller, Eric D.	Carnegie Mellon Univ.
Miyashita, Shuhei	Carnegie Mellon Univ.
Sitti, Metin	Carnegie Mellon Univ.

TueBT10	Lince
Programming and Code Generation (Regular Session)	
14:00-14:15	TueBT10.1
Robot Learning through Social Media Crowdsourcing, pp. 2332-2337.	
Emeli, Victor	Georgia Inst. of Tech.
14:15-14:30	TueBT10.2
A GOTO-Based Concept for Intuitive Robot Programming, pp. 2338-2345.	
Barth, Katharina	Univ. of Bayreuth
Henrich, Dominik	Univ. of Bayreuth
14:30-14:45	TueBT10.3
Code Generation of Algebraic Quantities for Robot Controllers, pp. 2346-2351.	
Frigerio, Marco	Fondazione Istituto Italiano di Tecnologia
Buchli, Jonas	Italian Inst. of Tech.
Caldwell, Darwin G.	Fondazione Itituto Italiano di Tecnologia
14:45-15:00	TueBT10.4
RoboStudio: A Visual Programming Environment for Rapid Authoring and Customization of Complex Services on a Personal Service Robot, pp. 2352-2357.	
Datta, Chandan	Univ. of Auckland
Jayawardena, Chandimal	Unitec Inst. of Tech.
Kuo, I Han	The Univ. of Auckland
MacDonald, Bruce	Univ. of Auckland

TueBT11	Hidra
Robot Audition III (Invited Session)	
Chair: Danès, Patrick	Univ. Toulouse - LAAS-CNRS - UPS
Co-Chair: Okuno, Hiroshi G.	Kyoto Univ.
Organizer: Ince, Gokhan	Istanbul Tech. Univ.
Organizer: Nakadai, Kazuhiro	Honda Res. Inst. Japan Co., Ltd.
Organizer: Okuno, Hiroshi G.	Kyoto Univ.
Organizer: Danès, Patrick	Univ. Toulouse - LAAS-CNRS - UPS
Organizer: Martinson, Eric	US Naval Res. Lab.
Organizer: Iwahashi, Naoto	National Inst. ofInformationandCommunicationsTechnology

14:00-14:15 TueBT11.1

Integration of Sound Source Localization and Separation to Improve Dialogue Management on a Robot, pp. 2358-2363.

Frechette, Maxime — Univ. de Sherbrooke
Létourneau, Dominic — Univ. de Sherbrooke
Valin, Jean Marc — Octasic Inc.
Michaud, Francois — Univ. de Sherbrooke

14:15-14:30 TueBT11.2

Sound Source Selection System Using Onomatopoeic Queries from Multiple Sound Sources, pp. 2364-2369.

Yamamura, Yusuke — Kyoto Univ.
Takahashi, Toru — Kyoto Univ.
Ogata, Tetsuya — Waseda Univ.
Okuno, Hiroshi G. — Kyoto Univ.

14:30-14:45 TueBT11.3

Unified Auditory Functions Based on Bayesian Topic Model, pp. 2370-2376.

Otsuka, Takuma — Kyoto Univ.
Ishiguro, Katsuhiko — NTT
Sawada, Hiroshi — NTT Corp.
Okuno, Hiroshi G. — Kyoto Univ.

14:45-15:00 TueBT11.4

Evaluation of Formant-Based Lip Motion Generation in Tele-Operated Humanoid Robots, pp. 2377-2382. Attachment

Ishi, Carlos Toshinori — ATR
Liu, Chaoran — osaka Univ.
Ishiguro, Hiroshi — Osaka Univ.
Hagita, Norihiro — ATR

TueCT1 Pegaso A
Vision and 3D Data Processing II (Regular Session)

15:00-15:15 TueCT1.1

Learning Collision-Free Reaching Skill from Primitives, pp. 2383-2388.

Lin, Hsien-I — National Taipei Univ. of Tech.
Lai, Chun-Chia — National Taipei Univ. of Tech.

15:15-15:30 TueCT1.2

Real-Time Human Motion Tracking Using Multiple Depth Cameras, pp. 2389-2395.

Zhang, Licong — Tech. Univ. Munich
Sturm, Jürgen — Tech. Univ. of Munich
Cremers, Daniel — Tech. Univ. of Munich
Lee, Dongheui — Tech. Univ. of Munich

15:30-15:45 TueCT1.3

Long-Range Pedestrian Detection Using Stereo and a Cascade of Convolutional Network Classifiers, pp. 2396-2403.

Kira, Zsolt — SRI International Sarnoff
Hadsell, Raia — SRI International
Salgian, Garbis — SRI International
Samarasekera, Supun — SRI Sarnoff

15:45-16:00 TueCT1.4

Semantic Categorization of Outdoor Scenes with Uncertainty Estimates Using Multi-Class Gaussian Process Classifi Cation, pp. 2404-2410.

Paul, Rohan — Univ. of Oxford
Triebel, Rudolph — Univ. of Oxford
Rus, Daniela — MIT
Newman, Paul — Oxford Univ.

TueCT2 Fenix 2
Posture/Motion Recognition and Social Robotics II (Regular Session)

Chair: Yuta, Shinichi — Univ. of Tsukuba

15:00-15:15 TueCT2.1

Control Algorithms for a Mobile Robot Tracking a Human in Front, pp. 2411-2416. Attachment

Jung, Eui-jung	Hanyang Univ.
Yi, Byung-Ju	Hanyang Univ.
Yuta, Shinichi	Univ. of Tsukuba

15:15-15:30 TueCT2.2

Incremental Learning of Human Social Behaviors with Feature-Based Spatial Effects, pp. 2417-2422.

Chung, Shu Yun	National Taiwan Univ.
Huang, Han-Pang	National Taiwan Univ.

15:30-15:45 TueCT2.3

Synchrony As a Tool to Estabilsh Focus of Attention for Autonomous Robots, pp. 2423-2428.

Hasnain, Syed Khursheed	ETIS Lab. CNRS (UMR 8051), Univ. of Cergy Pontoise, E
Gaussier, Philippe	CNRS UMR 8051, ENSEA, Cergy-Pontoise Univ.
Mostafaoui, Ghiles	CNRS, Univ. of CergyPontoise, ENSEA

15:45-16:00 TueCT2.4

An Emotional Adaption Approach to Increase Helpfulness towards a Robot, pp. 2429-2436. Attachment

Gonsior, Barbara	Tech. Univ. München, Inst. Engi
Sosnowski, Stefan	Tech. Univ. München
Buss, Malte	TU Muenchen
Wollherr, Dirk	Tech. Univ. München
Kühnlenz, Kolja	Tech. Univ. München

TueCT4 Fenix 3

Biologically Inspired Robotics IV (Regular Session)

Chair: Laschi, Cecilia	Scuola Superiore Sant'Anna
Co-Chair: Knoll, Alois	TU Munich

15:00-15:15 TueCT4.1

Linear Multi-Modal Actuation through Discrete Coupling, pp. 2437-2442. Attachment

Leach, Derek	Swiss Federal Inst. of Tech. Zurich
Guenther, Fabian	Swiss Federal Inst. of Tech. Zurich
Maheshwari, Nandan	ETH Z, Bio-Inspired Robotics Lab. IRIS
Iida, Fumiya	ETH Zurich

15:15-15:30 TueCT4.2

Exploiting Passive Dynamics for Robot Throwing Task, pp. 2443-2448. Attachment

Thandiackal, Robin	ETH Zürich
Braendle, Christoph	ETH Zurich
Leach, Derek	Swiss Federal Inst. of Tech. Zurich
Jafari, Amir	Swiss Federal Inst. of Tech. (ETH) Zurich
Iida, Fumiya	ETH Zurich

15:30-15:45 TueCT4.3

Embodiment Enables the Spinal Engine on Quadruped Robot Locomotion, pp. 2449-2456.

Zhao, Qian	AI Lab. Univ. of zurich
Nakajima, Kohei	Univ. of Zurich
Sumioka, Hidenobu	ATR
Yu, Xiaoxiang	ETHZ
Pfeifer, Rolf	Univ. of Zurich

15:45-16:00 TueCT4.4

A Robotic Architecture for Action Selection and Behavioral Organization Inspired by Human Cognition, pp. 2457-2464.

Richter, Mathis	Ruhr-Univ. Bochum
Sandamirskaya, Yulia	Ruhr-Univ. Bochum
Schöner, Gregor	Ruhr Univ. Bochum

TueCT5 Gemini 2

Legged Robots: Modeling and Control IV (Regular Session)

Chair: Hasegawa, Yasuhisa	Univ. of Tsukuba
Co-Chair: Osuka, Koichi	Osaka Univ.

15:00-15:15 TueCT5.1

Adaptive Internal Impedance Control for Stable Walking on Uncertain Visco-Elastic Terrains, pp. 2465-2470. Attachment

Bianchi, Fabio	King's Coll. London
Bartoli, Giulia	King's Coll. London
Shoar, Kya	King's Coll. London
Armas Fernández, María. R.	King's Coll. London
Pereno, Valerio	King's Coll. London
Zirjakova, Jelizaveta	King's Coll. London
Jiang, Allen	King's Coll. London
Nanayakkara, Thrishantha	King's Coll. Univ. of London

15:15-15:30 TueCT5.2

Zero-Moment Point Based Balance Control of Leg-Wheel Hybrid Structures with Inequality Constraints of Kinodynamic Behavior, pp. 2471-2477.

An, Sang-ik	Korea Inst. of Science and Tech.
Oh, Yonghwan	KIST
Kwon, Dong-Soo	KAIST

15:30-15:45 TueCT5.3

Human-Inspired Underactuated Bipedal Robotic Walking with AMBER on Flat-Ground, Up-Slope and Uneven Terrain, pp. 2478-2483. Attachment

Nadubettu Yadukumar, Shishir	Texas A&M Univ.
Pasupuleti, Murali	Texas A&M Univ.
Ames, Aaron	Texas A&M Univ.

15:45-16:00 TueCT5.4

Passive Quadrupedal Bounding with a Segmented Flexible Torso, pp. 2484-2489. Attachment

Cao, Qu	Univ. of Delaware
Poulakakis, Ioannis	Univ. of Delaware

TueCT6 Gemini 3

Navigation II (Regular Session)

Chair: Dillmann, Rüdiger KIT Karlsruhe Inst. for Tech.

15:00-15:15 TueCT6.1

Laser-Only Road-Vehicle Localization with Dual 2D Push-Broom LIDARs and 3D Priors, pp. 2490-2497.

Baldwin, Ian Alan	Oxford
Newman, Paul	Oxford Univ.

15:15-15:30 TueCT6.2

Iterative Smoothing Approach Using Gaussian Mixture Models for Nonlinear Estimation, pp. 2498-2503.

Lee, Daniel	Cornell Univ.
Campbell, Mark	Cornell Univ.

15:30-15:45 TueCT6.3

Fast Minimum Uncertainty Search on a Graph Map Representation, pp. 2504-2511.

Carrillo, Henry	Univ. of Zaragoza
Latif, Yasir	Univ. de Zaragoza
Neira, José	Univ. de Zaragoza
Castellanos, Jose A.	Univ. of Zaragoza

15:45-16:00 TueCT6.4

Autonomous Homing Based on Laser-Camera Fusion System, pp. 2512-2518.

Choi, Dong - Geol	KAIST
Shim, Inwook	KAIST
Bok, Yunsu	KAIST
Oh, Tae Hyun	KAIST
Kweon, In So	KAIST

TueCT8 Gemini 1

Mechanism Design II (Regular Session)

15:00-15:15 TueCT8.1

Compliant-Parallel Mechanism for High Precision Machine with a Wide Range of Working Area, pp. 2519-2524. Attachment

Kozuka, Hiroaki	Nagoya Inst. of Tech.
Arata, Jumpei	Nagoya Insititute of Tech.

Okuda, Kenji	Brother Industries, Ltd.
Onaga, Akinori	Brother Industries, Ltd.
Ohno, Motoshi	Brother Industries, Ltd.
Sano, Akihito	Nagoya Inst. of Tech.
Fujimoto, Hideo	Nagoya Inst. of Tech.

15:15-15:30 TueCT8.2

A New Active-Caster Drive System with a Dual-Ball Transmission for Omnidirectional Mobile Robots, pp. 2525-2532.

Wada, Masayoshi	Tokyo Univ. of Agriculture and Tech.

15:30-15:45 TueCT8.3

Design and Implementation of a 2-DOF Decoupled Kinematic Actuator Module, pp. 2533-2538. Attachment

Ihn, Yong Seok	SungKyunKwan Univ.
Koo, Ja Choon	Sungkyunkwan Univ.
Moon, Hyungpil	Sungkyunkwan Univ.
Choi, Hyouk Ryeol	Sungkyunkwan Univ.

15:45-16:00 TueCT8.4

Shape Estimation of Flexible Cable, pp. 2539-2546. Attachment

Ishikura, Michihisa	Tohoku Univ.
Takeuchi, Eijiro	Tohoku Univ.
Konyo, Masashi	Tohoku Univ.
Tadokoro, Satoshi	Tohoku Univ.

TueCT9 Fenix 1

Micro-Nano Robotics II (Regular Session)

Chair: Nelson, Bradley J.	ETH Zurich
Co-Chair: Ferreira, Antoine	Ec. Nationale Supérieure d'Ingénieurs de Bourges

15:00-15:15 TueCT9.1

Evaluation of Bacteria Driven Micro Crank in Open Micro Channel, pp. 2547-2552.

Kojima, Masaru	Osaka Univ.
Miyamoto, Tatsuya	Nagoya Univ.
Nakajima, Masahiro	Nagoya Univ.
Homma, Michio	Nagoya Univ.
Fukuda, Toshio	Nagoya Univ.

15:15-15:30 TueCT9.2

Movement of Artificial Bacterial Flagella in Heterogeneous Viscous Environments at the Microscale, pp. 2553-2558.

Peyer, Kathrin Eva	ETH Zurich
Qiu, Famin	ETH Zurich
Zhang, Li	ETH Zurich
Nelson, Bradley J.	ETH Zurich

15:30-15:45 TueCT9.3

Control of a Magnetic Microrobot Navigating in Microfluidic Arterial Bifurcations through Pulsatile and Viscous Flow, pp. 2559-2564. Attachment

Belharet, Karim	Ec. National Supérieure d'Ingénieurs de Bourges(Univ. d'O
Folio, David	ENSI de Bourges
Ferreira, Antoine	Ec. Nationale Supérieure d'Ingénieurs de Bourges

15:45-16:00 TueCT9.4

Evaluation of a MRI Based Propulsion/Control System Aiming at Targeted Micro/Nano-Capsule Therapeutics, pp. 2565-2570. Attachment

Dahmen, Christian	Univ. of Oldenburg
Folio, David	ENSI de Bourges
Wortmann, Tim	Univ. of Oldenburg
Kluge, Alexander	Radiology, Pius-Hospital Oldenburg, Germany
Ferreira, Antoine	Ec. Nationale Supérieure d'Ingénieurs de Bourges
Fatikow, Sergej	Univ. of Oldenburg

TueCT10 Lince

Software Architecture, Middleware, and Programming (Regular Session)

Chair: Sanz, Pedro J	Jaume I

15:00-15:15 TueCT10.1

RobotUI - a Software Architecture for Modular Robotics User Interface Frameworks, pp. 2571-2576.

Poppa, Florian — The Australian National Univ.
Zimmer, Uwe — Australian National Univ.

15:15-15:30 TueCT10.2

An Open Source Tool for Simulation and Supervision of Underwater Intervention Missions, pp. 2577-2582. Attachment

Prats, Mario — Univ. of Jaume I
Pérez, Javier — Univ. of Jaume-I
Fernández, José Javier — Univ. of Jaume-I
Sanz, Pedro J — Jaume I

15:30-15:45 TueCT10.3

Designing Autonomous Robot Missions with Performance Guarantees, pp. 2583-2590.

Lyons, Damian — Fordham Univ.
Arkin, Ronald — Georgia Tech.
Nirmal, Paramesh — Fordham Univ.
Jiang, Shu — Georgia Inst. of Tech.

15:45-16:00 TueCT10.4

MIRA - Middleware for Robotic Applications, pp. 2591-2598.

Einhorn, Erik — Ilmenau Univ. of Tech.
Langner, Tim — MetraLabs GmbH
Martin, Christian — MetraLabs GmbH
Stricker, Ronny — Ilmenau Univ. of Tech.
Gross, Horst-Michael — Ilmenau Univ. of Tech.

TueCT11 — Hidra
Multi-Modal Learning I (Regular Session)

Chair: Sandini, Giulio — Italian Inst. of Tech.
Co-Chair: Shimoda, Shingo — RIKEN

15:00-15:15 TueCT11.1

Learning Disturbances in Autonomous Excavation, pp. 2599-2605.

Maeda, Guilherme Jorge — The Univ. of Sydney
Rye, David — The Univ. of Sydney

15:15-15:30 TueCT11.2

Interactive Online Learning of the Kinematic Workspace of a Humanoid Robot, pp. 2606-2612.

Jamone, Lorenzo — WASEDA Univ.
Natale, Lorenzo — Istituto Italiano di Tecnologia
Sandini, Giulio — Italian Inst. of Tech.
Takanishi, Atsuo — Waseda Univ.

15:30-15:45 TueCT11.3

Stability Analysis of Tacit Learning Based on Environmental Signal Accumulation, pp. 2613-2620.

Shimoda, Shingo — RIKEN
Yoshihara, Yuki — Tohoku Univ.
Fujimoto, Kenji — Nagoya Univ.
Yamamoto, Takashi — Toyota Motor Europe
Maeda, Iwao — Toyota Motor Corp.
Kimura, Hidenori — RIKEN

15:45-16:00 TueCT11.4

Active Robot Learning of Object Properties, pp. 2621-2628.

Sushkov, Oleg Olegovich — Univ. of New South Wales
Sammut, Claude — The Univ. of New South Wales

TueCVT3 — Pegaso B
Control for Aerial Robotics (Regular Session)

Chair: Siegwart, Roland — ETH Zurich
Co-Chair: Ryu, Jee-Hwan — Korea Univ. of Tech. and Education

15:00-15:15 TueCVT3.1

Switching-Based Mapping and Control for Haptic Teleoperation of Aerial Robots, pp. 2629-2634.

Mersha, Abeje Y.	Univ. of Twente
Stramigioli, Stefano	Univ. of Twente
Carloni, Raffaella	Univ. of Twente

15:15-15:30 TueCVT3.2

Passivity of Delayed Bilateral Teleoperation of Mobile Robots with Ambiguous Causalities: Time Domain Passivity Approach, pp. 2635-2640.

Van Quang, Ha	BioRobotics Lab. SchoolofMechanicalEngineering,KoreaUnive
Farkhatdinov, Ildar	Univ. Pierre and Marie Curie
Ryu, Jee-Hwan	Korea Univ. of Tech. and Education

15:30-15:45 TueCVT3.3

Interactive Planning of Persistent Trajectories for Human-Assisted Navigation of Mobile Robots, pp. 2641-2648. Attachment

Masone, Carlo	Max Planck Inst. for Biological Cybernetics
Franchi, Antonio	Max Planck Inst. for Biological Cybernetics
Buelthoff, Heinrich H.	Max Planck Inst. for Biol. Cybernetics
Robuffo Giordano, Paolo	Max Planck Inst. for Biological Cybernetics

15:45-15:50 TueCVT3.4

SFly: Swarm of Micro Flying Robots, pp. 2649-2650. Attachment

Achtelik, Markus W.	ETH Zurich, Autonomous Systems Lab.
Achtelik, Michael C.	Ascending Tech. GmbH
Chli, Margarita	ETH Zurich
Chatzichristofis, Savvas	Electrical and Computer Engineering
Fraundorfer, Friedrich	ETH Zurich
Doth, Klaus-Michael	Ascending Tech. GmbH
Kneip, Laurent	ETHZ
Gurdan, Daniel	Ascending Tech. GmbH
Heng, Lionel	ETH Zurich
Kosmatopoulos, Elias	Democritus Univ. Thrace & ITI/CERTH
Doitsidis, Lefteris	Tech. Educational Inst. of Crete & ITI/CERTH
Lee, Gim Hee	ETH Zurich
Lynen, Simon	ETH Zurich
Martinelli, Agostino	INRIA Grenoble-Rhone-Alpes
Meier, Lorenz	ETH Zurich
Pollefeys, Marc	ETH Zurich
Renzaglia, Alessandro	INRIA
Scaramuzza, Davide	Univ. of Zurich
Siegwart, Roland	ETH Zurich
Stumpf, Jan Carsten	Ascending Tech. GmbH
Tanskanen, Petri	ETH Zurich
Troiani, Chiara	INRIA Rhone Alpes
Weiss, Stephan	ETH Zurich

15:50-15:55 TueCVT3.5

Visual-Inertial SLAM for a Small Helicopter in Large Outdoor Environments, pp. 2651-2652. Attachment

Achtelik, Markus W.	ETH Zurich, Autonomous Systems Lab.
Lynen, Simon	ETH Zurich
Weiss, Stephan	ETH Zurich
Kneip, Laurent	ETHZ
Chli, Margarita	ETH Zurich
Siegwart, Roland	ETH Zurich

15:55-16:00 TueCVT3.6

A Prototype of Aerial Manipulator, pp. 2653-2654. Attachment

Torre, Alessio	Univ. of Bologna
Mengoli, Dario	Univ. of Bologna
Forte, Francesco	Univ. of Bologna
Naldi, Roberto	CASY - D.E.I.S. - Univ. di Bologna
Macchelli, Alessandro	Univ. of Bologna
Marconi, Lorenzo	Univ. of Bologna

TueCVT7	Vega
Motion and Path Planning IV (Regular Session)	
Chair: Amato, Nancy	Texas A&M Univ.
Co-Chair: Rocco, Paolo	Pol. di Milano
15:00-15:15	TueCVT7.1
UOBPRM: A Uniformly Distributed Obstacle-Based PRM, pp. 2655-2662.	
Yeh, Hsin-Yi (Cindy)	Texas A&M Univ.
Thomas, Shawna	Texas A&M Univ.
Eppstein, David	Univ. of California, Irvine
Amato, Nancy	Texas A&M Univ.
15:15-15:30	TueCVT7.2
Robust Sampling-Based Planning for Uncalibrated Visual Servoing, pp. 2663-2669. Attachment	
Shademan, Azad	Univ. of Alberta
Jagersand, Martin	Univ. of Alberta
15:30-15:45	TueCVT7.3
Anytime Policy Planning in Large Dynamic Environments with Interactive Uncertainty, pp. 2670-2677. Attachment	
Neuman, Bradford	Carnegie Mellon Univ.
Stentz, Anthony	Carnegie Mellon Univ.
15:45-15:50	TueCVT7.4
Spatially Targeted Communication and Self-Assembly, pp. 2678-2679. Attachment	
Mathews, Nithin	Univ. Libre de Bruxelles
Christensen, Anders Lyhne	Lisbon Univ. Inst.
O'Grady, Rehan	Univ. Libre de Bruxelles
Dorigo, Marco	Univ. Libre de Bruxelles
15:50-15:55	TueCVT7.5
Advection on Networks with an Application to Decentralized Load Balancing, pp. 2680-2681. Attachment	
Chapman, Airlie	Univ. of Washington
Schoof, Eric	Univ. of Washington
Mesbahi, Mehran	Univ. of Washington
15:55-16:00	TueCVT7.6
Fighting Fires with Human Robot Teams, pp. 2682-2683. Attachment	
Martinson, Eric	US Naval Res. Lab.
Lawson, Wallace	US Naval Res. Lab.
Blisard, Samuel	US Naval Res. Lab.
Harrison, Anthony	Naval Res. Lab.
Trafton, Greg	Naval Res. Lab.

TueDT1	Pegaso A
Point Cloud Processing (Regular Session)	
Chair: Birchfield, Stan	Clemson Univ.
Co-Chair: Rasmussen, Christopher	Univ. of Delaware
16:15-16:30	TueDT1.1
Adaptive Neighborhood Selection for Real-Time Surface Normal Estimation from Organized Point Cloud Data Using Integral Images, pp. 2684-2689.	
Holzer, Stefan	Tech. Univ. München
Rusu, Radu B.	Open Perception, Inc
Dixon, Michael	Willow Garage
Gedikli, Suat	Willow Garage Inc.
Navab, Nassir	TU Munich
16:30-16:45	TueDT1.2
Simplified Markov Random Fields for Efficient Semantic Labeling of 3D Point Clouds, pp. 2690-2697.	
Lu, Yan	Univ. of Delaware
Rasmussen, Christopher	Univ. of Delaware
16:45-17:00	TueDT1.3
Toward Mutual Information Based Automatic Registration of 3D Point Clouds, pp. 2698-2704.	
Pandey, Gaurav	Univ. of Michigan

McBride, James	Ford Motor Company
Savarese, Silvio	Univ. of Michigan
Eustice, Ryan	Univ. of Michigan
17:00-17:15	TueDT1.4
Scan Registration with Multi-Scale K-Means Normal Distributions Transform, pp. 2705-2710.	
Das, Arun	Univ. of Waterloo
Waslander, Steven Lake	Univ. of Waterloo
17:15-17:30	TueDT1.5
An Energy Minimization Approach to 3D Non-Rigid Deformable Surface Estimation Using RGBD Data, pp. 2711-2717. Attachment	
Willimon, Bryan	Clemson Univ.
Hickson, Steven	Clemson Univ.
Walker, Ian	Clemson Univ.
Birchfield, Stan	Clemson Univ.

TueDT3	Pegaso B
Industrial Robotics (Regular Session)	
Chair: Kawamura, Sadao	Ritsumeikan Univ.
16:15-16:30	TueDT3.1
Modeling and Identification of Serial Two-Link Manipulator Considering Joint Nonlinearities for Industrial Robots Control, pp. 2718-2723.	
Kim, Eui-Jin	Hyundai Heavy Industries Co.,Ltd.
Seki, Kenta	Nagoya Inst. of Tech.
Iwasaki, Makoto	Nagoya Inst. of Tech.
Lee, Sang-Hun	Hyundai Heavy Industries Co., Ltd.
16:30-16:45	TueDT3.2
Real-Time System Integration in a Multi-Robot Sewing Cell, pp. 2724-2729. Attachment	
Schrimpf, Johannes	NTNU
Wetterwald, Lars Erik	SINTEF Raufoss Manufacturing
Lind, Morten	SINTEF Manufacturing AS
16:45-17:00	TueDT3.3
Realization of High-Energy Efficient Pick-And-Place Tasks of SCARA Robots by Resonance, pp. 2730-2735.	
Goya, Hidemasa	Ritsumeikan Univ.
Matsusaka, Kento	Ritsumeikan Univ.
Uemura, Mitsunori	Osaka Univ.
Nishioka, Yasutaka	Ritsumeikan Univ.
Kawamura, Sadao	Ritsumeikan Univ.
17:00-17:15	TueDT3.4
A Sensor Fusion Approach to Improve Joint Angle and Angular Rate Signals in Articulated Robots, pp. 2736-2741.	
Kubus, Daniel	Tech. Univ. Braunschweig
Guarino Lo Bianco, Corrado	Univ. of Parma
Wahl, Friedrich M.	Tech. Univ. of Braunschweig
17:15-17:30	TueDT3.5
Nonlinear Robust Internal Loop Compensator for Robust Control of Robotic Manipulators, pp. 2742-2748. Attachment	
Kim, Min Jun	POSTECH
Park, Seongsik	POSTECH, Robotics Lab.
Chung, Wan Kyun	POSTECH

TueDT4	Fenix 3
Biologically Inspired Legged Robots (Regular Session)	
Chair: Orin, David	The Ohio State Univ.
16:15-16:30	TueDT4.1
Design and Development of a Cheetah Robot under the Neural Mechanism Controlling the Leg's Muscles, pp. 2749-2755. Attachment	
Wang, Xin	Harbin Inst. of Tech.
Li, Mantian	Harbin Inst. of Tech.
Guo, Wei	Harbin Inst. of Tech.

Wang, Pengfei	The State Key Lab. of Robotics and System, Harbin Inst.
Sun, Lining	harbin Inst. of Tech.

16:30-16:45 TueDT4.2

Multiple Chaotic Central Pattern Generators for Locomotion Generation and Leg Damage Compensation in a Hexapod Robot, pp. 2756-2761. Attachment

Ren, Guanjiao	Beihang Univ.
Chen, Weihai	Beijing Univ. of Aeronaurics and Astronautics
Kolodziejski, Christoph	Univ. of Goettingen
Wörgötter, Florentin	Univ. of Göttingen
Dasgupta, Sakyasingha	Univ. of Goettingen
Manoonpong, Poramate	Univ. of Goettingen

16:45-17:00 TueDT4.3

Grounding an Internal Body Model of a Hexapod Walker Control of Curve Walking in a Biologically Inspired Robot, pp. 2762-2768.

Schilling, Malte	Univ. of Bielefeld
Paskarbeit, Jan	Univ. of Bielefeld
Schneider, Axel	Univ. of Bielefeld
Schmitz, Josef	Univ. of Bielefeld
Cruse, Holk	Univ. of Bielefeld

17:00-17:15 TueDT4.4

Emergence and Motion Analysis of 3D Quasi-Passive Dynamic Walking by Excitation of Lateral Rocking, pp. 2769-2774. Attachment

Nakanishi, Daisuke	Osaka Univ.
Sueoka, Yuichiro	Osaka Univ.
Li, Yu	Dept. of Mechanical Engineering, Osaka Univ.
Sugimoto, Yasuhiro	Osaka Univ.
Ishikawa, Masato	Osaka Univ.
Osuka, Koichi	Osaka Univ.
Sankai, Yoshiyuki	Univ. of Tsukuba

17:15-17:30 TueDT4.5

Toward Innate Leg Stability on Unmodeled and Natural Terrain: Quadruped Walking, pp. 2775-2780. Attachment

Palmer III, Luther R.	Univ. of South Florida
Eaton, Caitrin	Univ. of South Florida

TueDT5 Gemini 2

Compliance and Impedance Control (Regular Session)

Chair: Siciliano, Bruno	Univ. Napoli Federico II
Co-Chair: Suzuki, Kenji	Univ. of Tsukuba

16:15-16:30 TueDT5.1

Stiffness Modeling of Non-Perfect Parallel Manipulators, pp. 2781-2788.

Klimchik, Alexandr	Ec. des Mines de Nantes
Pashkevich, Anatol	Ec. des Mines de Nantes
Chablat, Damien	Inst. de Recherche en Communications et CybernétiquedeNantes

16:30-16:45 TueDT5.2

An Elastic Link Mechanism Integrated with a Magnetorheological Fluid for Elbow Orthotics, pp. 2789-2794.

Oba, Takahiro	Univ. of Tsukuba
Kadone, Hideki	Univ. of Tsukuba
Suzuki, Kenji	Univ. of Tsukuba

16:45-17:00 TueDT5.3

Null-Space Impedance Control with Disturbance Observer, pp. 2795-2800. Attachment

Sadeghian, Hamid	Isfahan Univ. of Tech.
Keshmiri, Mehdi	Isfahan Univ. of Tech.
Villani, Luigi	Univ. di Napoli Federico II
Siciliano, Bruno	Univ. Napoli Federico II

17:00-17:15 TueDT5.4

Optimal Torque and Stiffness Control in Compliantly Actuated Robots, pp. 2801-2808. Attachment

Braun, David J.	Univ. of Edinburgh
Petit, Florian	German Aerospace Center (DLR)

Huber, Felix	German Aerospace Center
Haddadin, Sami	German Aerospace Center (DLR)
van der Smagt, Patrick	DLR / TUM
Albu-Schäffer, Alin	DLR - German Aerospace Center
Vijayakumar, Sethu	Univ. of Edinburgh

17:15-17:30 TueDT5.5

Autonomous Manipulation of Deformable Objects Based on Teleoperated Demonstrations, pp. 2809-2814. Attachment

Rambow, Matthias	Tech. Univ. Muenchen
Schauß, Thomas	Tech. Univ. München
Buss, Martin	Tech. Univ. München
Hirche, Sandra	Tech. Univ. München

TueDT6 Gemini 3

Visual Sensing and Navigation (Regular Session)

16:15-16:30 TueDT6.1

Camera-Based Navigation of a Low-Cost Quadrocopter, pp. 2815-2821.

Engel, Jakob	Tech. Univ. of Munich
Sturm, Jürgen	Tech. Univ. of Munich
Cremers, Daniel	Tech. Univ. of Munich

16:30-16:45 TueDT6.2

Probabilistic Outlier Removal for Robust Landmark Identification in Stereo Vision Based SLAM, pp. 2822-2827. Attachment

Brink, Wikus	Stellenbosch Univ.
van Daalen, Corné Edwin	Stellenbosch Univ.
Brink, Willie	Stellenbosch Univ.

16:45-17:00 TueDT6.3

Bias Compensation in Visual Odometry, pp. 2828-2835.

Dubbelman, Gijs	CMU Robotics Inst.
Browning, Brett	Carnegie Mellon Univ.
Hansen, Peter	Carnegie Mellon Univ. in Qatar

17:00-17:15 TueDT6.4

Object Disappearance for Object Discovery, pp. 2836-2843.

Mason, Julian	Duke Univ.
Marthi, Bhaskara	Willow Garage
Parr, Ronald	Duke Univ.

17:15-17:30 TueDT6.5

Planning High-Visibility Stable Paths for Reconfigurable Robots on Uneven Terrain, pp. 2844-2849.

Norouzi, Mohammad	Univ. of Tech. Sydney
Valls Miro, Jaime	Univ. of Tech. Sydney
Dissanayake, Gamini	Univ. of Tech. Sydney

TueDT7 Vega

Reactive and Sensor-Based Planning (Regular Session)

Chair: Karumanchi, Sisir	MIT
Co-Chair: Sekiyama, Kosuke	Nagoya Univ.

16:15-16:30 TueDT7.1

Next-Best-Scan Planning for Autonomous 3D Modeling, pp. 2850-2856.

Kriegel, Simon	German Aerospace Center (DLR)
Rink, Christian	German Aerospace Center
Bodenmueller, Tim	German Aerospace Center (DLR)
Narr, Alexander	German Aerospace Center (DLR)
Suppa, Michael	German Aerospace Center (DLR)
Hirzinger, Gerd	German Aerospace Center (DLR)

16:30-16:45 TueDT7.2

Probabilistically Safe Control of Noisy Dubins Vehicles, pp. 2857-2862.

Cizelj, Igor	Boston Univ.
Belta, Calin	Boston Univ.

16:45-17:00	TueDT7.3
Reactive Control in Environments with Hard and Soft Hazards, pp. 2863-2868.	
Karumanchi, Sisir	MIT
Iagnemma, Karl	MIT
17:00-17:15	TueDT7.4
Locomotion Selection of Multi-Locomotion Robot Based on Falling Risk and Moving Efficiency, pp. 2869-2874.	
Kobayashi, Taisuke	Nagoya Univ.
Aoyama, Tadayoshi	Hiroshima Univ.
Sekiyama, Kosuke	Nagoya Univ.
Lu, Zhiguo	Nagoya Univ.
Hasegawa, Yasuhisa	Univ. of Tsukuba
Fukuda, Toshio	Nagoya Univ.
17:15-17:30	TueDT7.5
Sensor Driven Online Coverage Planning for Autonomous Underwater Vehicles, pp. 2875-2880.	
Paull, Liam	Univ. of New Brunswick
Saeedi Gharahbolagh, Sajad	Univ. of New Brunswick
Seto, Mae	Defence R&D Canada
Li, Howard	Univ. of New Brunswick

TueDT8	Gemini 1
Joint/Mechanism (Regular Session)	
Chair: Tadakuma, Kenjiro	Osaka Univ.
16:15-16:30	TueDT8.1
Omnidirectional Driving Gears and Their Input Mechanism with Passive Rollers, pp. 2881-2888. Attachment	
Tadakuma, Kenjiro	Osaka Univ.
Tadakuma, Riichiro	Yamagata Univ.
Ioka, Kyohei	Yamagata Univ.
Kudo, Takeshi	Yamagata Univ.
Takagi, Minoru	Yamagata Univ.
Tsumaki, Yuichi	Yamagata Univ.
Higashimori, Mitsuru	Osaka Univ.
Kaneko, Makoto	Osaka Univ.
16:30-16:45	TueDT8.2
Development of Robot Hand with Multi-Directional Variable Stiffness for Human-Care Services, pp. 2889-2894.	
Kajikawa, Shinya	Tohoku Gakuin Univ.
16:45-17:00	TueDT8.3
Antagonistic Control of Multi-DOF Joint, pp. 2895-2900.	
Koganezawa, Koichi	Tokai Univ.
Takami, Gaku	Tokai Univ.
Watanabe, Masakaki	Tokai Univ.
17:00-17:15	TueDT8.4
A Novel Spring Mechanism to Reduce Energy Consumption of Robotic Arms, pp. 2901-2908.	
Plooij, Michiel	Delft Univ. of Tech.
Wisse, Martijn	Delft Univ. of Tech.
17:15-17:30	TueDT8.5
Simplifying Robot Hands Using Recursively Scaled Power Grasps, pp. 2909-2914. Attachment	
Odhner, Lael	Yale Univ.
Walker, Chad	Yale Univ.
Dollar, Aaron	Yale Univ.

TueDT9	Fenix 1
Design of Medical Robots (Regular Session)	
16:15-16:30	TueDT9.1
Energy Analysis of Worm Locomotion on Flexible Surface, pp. 2915-2921.	
Zarrouk, David	UC Berkeley
Sharf, Inna	McGill Univ.

Shoham, Moshe	Tech. Israel Inst. of Tech.

16:30-16:45 TueDT9.2

Design of a Variable Stiffness Flexible Manipulator with Composite Granular Jamming and Membrane Coupling, pp. 2922-2927. Attachment

Jiang, Allen	King's Coll. London
Xynogalas, Georgios	King's Coll. London
Dasgupta, Prokar	King's Coll. London
Althoefer, Kaspar	Kings Coll. London
Nanayakkara, Thrishantha	King's Coll. Univ. of London

16:45-17:00 TueDT9.3

Understanding Soft Tissue Behavior for Microlaparoscopic Surface Scan, pp. 2928-2934.

Erden, Mustafa Suphi	Univ. Pierre et Marie CURIE
Rosa, Benoît	Univ. Pierre et Marie Curie - Paris 6
Szewczyk, Jérôme	Univ. Pierre et Marie Curie-Paris 6
Morel, Guillaume	Univ. Pierre et Marie Curie - Paris 6

17:00-17:15 TueDT9.4

Development of a Peristaltic Crawling Robot Attached to a Large Intestine Endoscope Using Bellows-Type Artificial Rubber Muscles, pp. 2935-2940.

Yanagida, Takaichi	chuo Univ.
Nakamura, Taro	Chuo Univ.
Yokojima, Masato	Chuo Univ.
Adachi, Kazunori	Chuo Univ.

17:15-17:30 TueDT9.5

Robotic Neuro-Endoscope with Concentric Tube Augmentation, pp. 2941-2946.

Butler, Evan	Sterling Point Res. LLC
Hammond-Oakley, Robert	Sterling Point Res.
Chawarski, Szymon	Sterling Point Res.
Gosline, Andrew	Children's Hospital Boston, Harvard Medical School
Codd, Patrick	Children's Hospital, Boston
Anor, Tomer	Children's Hospital Boston, Harvard Medical School
Madsen, Joseph	Children's Hospital Boston, Harvard Medical School
Dupont, Pierre	Children's Hospital Boston, Harvard Medical School
Lock, Jesse	Lexington Pediatrics

TueDT10 Lince

Dexterous Manipulation (Regular Session)

16:15-16:30 TueDT10.1

Improving Robot Manipulation through Fingertip Perception, pp. 2947-2954.

Maldonado, Alexis	Tech. Univ. München
Alvarez Heredia, Humberto	Tech. Univ. Muenchen
Beetz, Michael	Tech. Univ. München

16:30-16:45 TueDT10.2

An Integrated System for Autonomous Robotics Manipulation, pp. 2955-2962.

Bagnell, James	Carnegie Mellon Univ.
Cavalcanti, Felipe	Univ. of Brasília
Cui, Lei	Carnegie Mellon Univ.
Galluzzo, Tom	Univ. of Florida
Hebert, Martial	CMU
Kazemi, Moslem	Carnegie Mellon Univ.
Libby, Jacqueline Kemeny	Carnegie Mellon Univ.
Liu, Tian Yu	Carnegie Mellon Univ.
Pollard, Nancy S	Carnegie Mellon Univ.
Pivtoraiko, Mihail	Univ. of Pennsylvania
Valois, Jean-Sebastien	Carnegie Mellon Univ.
Klingensmith, Matt	Carnegie Mellon Univ.
Zhu, Ranqi	carnegie mellon Univ.

16:45-17:00 TueDT10.3

Transferring Functional Grasps through Contact Warping and Local Replanning, pp. 2963-2970.

Hillenbrand, Ulrich	German Aerospace Center (DLR)
Roa, Maximo A.	German Aerospace Center, DLR

17:00-17:15	TueDT10.4

A Novel Low-Friction Manipulator for Bimanual Joint-Level Robot Control and Active Constraints, pp. 2971-2976.

Mylonas, George	Imperial Coll. London
Totz, Johannes	Imperial Coll. London
Vitiello, Valentina	Imperial Coll. London
Payne, Christopher	Imperial Coll. London
Yang, Guang-Zhong	Imperial Coll. London

17:15-17:30	TueDT10.5

Improving Physical Human-Robot Interaction through Viscoelastic Soft Fingertips, pp. 2977-2984.

Armendariz, Jorge	Ritsumeikan Univ.
Machorro Fernández, Felipe Alberto	CINVESTAV
Parra-Vega, Vicente	Res. Center for Advanced Studies (CINVESTAV)
Garcia-Rodriguez, Rodolfo	Coll. of Engineering and Applied Sciences, Univ. delos A
Hirai, Shinichi	Ritsumeikan Univ.

TueDT11	Hidra
Recognition and Navigation (Regular Session)	
Chair: Behnke, Sven	Univ. of Bonn

16:15-16:30	TueDT11.1

Bio-Inspired Visual Memory for Robot Cognitive Map Building and Scene Recognition, pp. 2985-2990.

Rebai Karima, Rebai	Centre de développement des Tech. avancées
Azouaoui, Ouahiba	Centre de Développement des Tech. Avancées (CDTA)
Achour, Nouara	USTHB

16:30-16:45	TueDT11.2

Application of Semi-Supervised Learning with Voronoi Graph for Place Classification, pp. 2991-2996.

Shi, Lei	Univ. of Tech. Sydney
Kodagoda, Sarath	Univ. of Tech. Sydney
Dissanayake, Gamini	Univ. of Tech. Sydney

16:45-17:00	TueDT11.3

State Estimation for Highly Dynamic Flying Systems Using Keyframe Odometry with Varying Time Delayes, pp. 2997-3004.

Schmid, Korbinian	German Aerospace Center (DLR)
Ruess, Felix	TU Munich
Suppa, Michael	German Aerospace Center (DLR)
Burschka, Darius	Tech. Univ. Muenchen

17:00-17:15	TueDT11.4

Semantic Mapping Using Object-Class Segmentation of RGB-D Images, pp. 3005-3010.

Stückler, Jörg	Univ. of Bonn
Biresev, Nenad	Fraunhofer Inst. for Intelligent Analysis and Information Sy
Behnke, Sven	Univ. of Bonn

17:15-17:30	TueDT11.5

Learning Hierarchical Representation with Sparsity for RGB-D Object Recognition, pp. 3011-3016.

Yu, Kuan-Ting	National Taiwan Univ.
Fu, Li-Chen	National Taiwan Univ.
Tseng, Shih-Huan	National Taiwan Univ.

TueDVT2	Fenix 2
Telerobotics – Control (Regular Session)	

16:15-16:30	TueDVT2.1

Control of Nonlinear Teleoperation Systems Subject to Disturbances and Variable Time Delays, pp. 3017-3022.

Mohammadi, Alireza	Univ. of Toronto
Tavakoli, Mahdi	Univ. of Alberta
Marquez, Horacio	Univ. of Alberta

16:30-16:45	TueDVT2.2

Adaptive Control of Nonlinear Teleoperation Systems with Varying Asymmetric Time Delays, pp. 3023-3028.

Hashemzadeh, Farzad	Univ. of Alberta
Hassanzadeh, Iraj	Univ. of Tabriz
Tavakoli, Mahdi	Univ. of Alberta
Alizadeh, Ghasem	Control Eng. Dept., Faculty of Electrical and Computer Eng., Uni

16:45-17:00 TueDVT2.3

Control of a Teleoperation System Actuated by Low-Cost Pneumatic On/off Valves, pp. 3029-3034. Attachment

Hodgson, Sean	Univ. of Alberta
Tavakoli, Mahdi	Univ. of Alberta
Lelevé, Arnaud	INSA de Lyon (Inst. National des Sciences Appliquees), Univ.
Pham, Minh Tu	INSA de Lyon (Inst. National des Sciences Appliquees)

17:00-17:15 TueDVT2.4

Control of Time-Delayed Telerobotic Systems with Flexible-Link Slave Manipulators, pp. 3035-3040.

Atashzar, Seyed Farokh	The Univ. of Western Ontario (UWO)
Shahbazi, Mahya	The Univ. of Wetsern Ontario
Talebi, Ali	AmirKabir Univ. of Tech.
Patel, Rajnikant V.	The Univ. of Western Ontario

17:15-17:20 TueDVT2.5

A Contribution to Haptic Teleoperation of Aerial Vehicles, pp. 3041-3042. Attachment

Mersha, Abeje Y.	Univ. of Twente
Rüesch, Andreas	ETHZ
Stramigioli, Stefano	Univ. of Twente
Carloni, Raffaella	Univ. of Twente

17:20-17:25 TueDVT2.6

Multiple Unmanned Systems Operations, pp. 3043-3044. Attachment

Calado, Pedro	Univ. Porto - Faculdade Engenharia
Sousa, João	Univ. Porto - Faculdade Engenharia

17:25-17:30 TueDVT2.7

Comparing Motion Generation and Motion Recall for Everyday Mobile Manipulation Tasks, pp. 3045-3046. Attachment

Lopera, Carmen	PAL Robotics S.L
Tomé Barghi, Hilario	PAL Robotics S.L
Rodríguez Tsouroukdissian, Adolfo	PAL Robotics S.L.
Stulp, Freek	École Nationale Supérieure de Tech. Avancées

TueET1 Pegaso A

Detection and Tracking in ITS (Regular Session)

Chair: Laugier, Christian	INRIA Rhône-Alpes
Co-Chair: Gehrig, Stefan	Daimler AG

17:30-17:45 TueET1.1

Sensor Modelling for Radar-Based Occupancy Mapping, pp. 3047-3054.

Clarke, Bryan	Univ. of Sydney
Worrall, Stewart	Univ. of Sydney
Brooker, Graham	Univ. of Sydney
Nebot, Eduardo	Unversity of Sydney

17:45-18:00 TueET1.2

A Multi-Cue Approach for Stereo-Based Object Confidence Estimation, pp. 3055-3060.

Gehrig, Stefan	Daimler AG
Barth, Alexander	Mercedes-Benz R&D North America
Schneider, Nicolai	IT Designers GmbH
Siegemund, Jan	Univ. of Bonn

18:00-18:15 TueET1.3

Real-Time Vehicle Detection with a Single Camera Using Shadow Segmentation and Temporal Verification, pp. 3061-3066.

Rosebrock, Dennis	Tech. Univ. Braunschweig
Rilk, Markus	Tech. Univ. Braunschweig

18:15-18:30 TueET1.4

Discrete Features for Rapid Pedestrian Detection in Infrared Images, pp. 3067-3072.

Olmeda, Daniel — Univ. Carlos III de Madrid
Armingol, Jose — Univ. Carlos III de Madrid
de la Escalera, Arturo — Univ. Carlos III of Madrid

TueET3 — Pegaso B
Compliant Assembly (Regular Session)
Chair: Dollar, Aaron — Yale Univ.

17:30-17:45 — TueET3.1
The X-Face: An Improved Planar Passive Mechanical Connector for Modular Self-Reconfigurable Robots, pp. 3073-3078.
Eckenstein, Nick — Univ. of Pennsylvania
Yim, Mark — Univ. of Pennsylvania

17:45-18:00 — TueET3.2
The Role of Physical Damping in Compliant Actuation Systems, pp. 3079-3085. Attachment
Laffranchi, Matteo — Fondazione Istituto Italiano di Tecnologia
Chen, Lisha — Italian Inst. of Tech.
Tsagarakis, Nikolaos — Istituto Italiano di Tecnologia
Caldwell, Darwin G. — Fondazione Itituto Italiano di Tecnologia

18:00-18:15 — TueET3.3
Static Analysis of Parallel Robots with Compliant Joints for In-Hand Manipulation, pp. 3086-3092.
Borras Sol, Julia — Yale Univ.
Dollar, Aaron — Yale Univ.

TueET4 — Fenix 3
Control of Bio-Inspired Robots I (Regular Session)

17:30-17:45 — TueET4.1
Compliance-Based Dynamic Steering for Hexapods, pp. 3093-3098.
Zarrouk, David — UC Berkeley
Fearing, Ronald — Univ. of California at Berkeley

17:45-18:00 — TueET4.2
Modular Snake Robot Gaits on Horizontal Pipes, pp. 3099-3104. Attachment
Melo, Kamilo — KM-ROBOTA
Paez, Laura — KM-ROBOTA

18:00-18:15 — TueET4.3
Teleoperation Control of a Redundant Continuum Manipulator Using a Non-Redundant Rigid-Link Master, pp. 3105-3110.
Kapadia, Apoorva — Clemson Univ.
Walker, Ian — Clemson Univ.
Tatlicioglu, Enver — Izmir Inst. of Tech.

18:15-18:30 — TueET4.4
A Control Framework for Snake Robot Locomotion Based on Shape Control Points Interconnected by Bézier Curves, pp. 3111-3118.
Liljebäck, Pål — SINTEF IKT
Pettersen, Kristin Y. — Norwegian Univ. of Science and Tech.
Stavdahl, Øyvind — Norwegian Univ. of Science and Tech. (NTNU)
Gravdahl, Jan Tommy — Norwegian Univ. of Science and Tech.

TueET5 — Gemini 2
Control of Wheeled Robots I (Regular Session)
Chair: Dietrich, Franz — Tech. Univ. Braunschweig

17:30-17:45 — TueET5.1
Minimum-Energy Trajectory Planning and Control on a Straight Line with Rotation for Three-Wheeled Omni-Directional Mobile Robots, pp. 3119-3124.
Kim, Hongjun — KAIST
Kim, Byung Kook — KAIST

17:45-18:00 — TueET5.2
Development of a Stair Traversing Two Wheeled Robot, pp. 3125-3131. Attachment
Yap, Huei Ee — Waseda Univ.

Hashimoto, Shuji	Waseda Univ.
18:00-18:15	TueET5.3
Backstepping Vehicle Steering Controller Using Integral and Robust Control Based on Dynamic State Estimation, pp. 3132-3137.	
Xin, Ming	Univ. of Utah
Minor, Mark	Univ. of Utah
18:15-18:30	TueET5.4
Vehicle-Terrain Interaction Models for Analysis and Performance Evaluation of Wheeled Rovers, pp. 3138-3143.	
Ghotbi, Bahareh	McGill Univ.
Gonzalez, Francisco	McGill Univ.
Kovecses, Jozsef	McGill Univ.
Angeles, Jorge	McGill Univ.

TueET6	Gemini 3
Localization II (Regular Session)	
Chair: Stachniss, Cyrill	Univ. of Freiburg
Co-Chair: Poppa, Florian	The Australian National Univ.
17:30-17:45	TueET6.1
Localization in a Vector Field Map, pp. 3144-3151.	
Gutmann, Jens-Steffen	Evolution Robotics Inc.
Fong, Philip	Evolution Robotics
Munich, Mario Enrique	Evolution Robotics
17:45-18:00	TueET6.2
Towards Robust Vision-Based Self-Localization of Vehicles in Dense Urban Environments, pp. 3152-3157.	
Himstedt, Marian	Univ. of Applied Sciences Dresden
Alempijevic, Alen	Univ. of Tech. Sydney
Zhao, Liang	Peking Univ. Univ. of Tech. Sydney
Huang, Shoudong	Univ. of Tech. Sydney
Boehme, Hans-Joachim	Univ. of Applied Sciences Dresden
18:00-18:15	TueET6.3
On the Position Accuracy of Mobile Robot Localization Based on Particle Filters Combined with Scan Matching, pp. 3158-3164. Attachment	
Röwekämper, Jörg	Univ. of Freiburg
Sprunk, Christoph	Univ. of Freiburg
Tipaldi, Gian Diego	Univ. of Freiburg
Stachniss, Cyrill	Univ. of Freiburg
Pfaff, Patrick	KUKA Lab. GmbH
Burgard, Wolfram	Univ. of Freiburg
18:15-18:30	TueET6.4
Robust and Accurate Pose Estimation for Vision-Based Localisation, pp. 3165-3170.	
Mei, Christopher	LAAS-CNRS

TueET7	Vega
Motion and Path Planning V (Regular Session)	
Co-Chair: Zhang, Tianwei	Peking Univ.
17:30-17:45	TueET7.1
Visual Anomaly Detection from Small Samples for Mobile Robots, pp. 3171-3178.	
Kato, Hiroharu	The Univ. of Tokyo
Harada, Tatsuya	The Univ. of Tokyo
Kuniyoshi, Yasuo	The Univ. of Tokyo
17:45-18:00	TueET7.2
A "Capacitor" Bridge Builder Based Safe Path Planner for Difficult Regions Identification in Changing Environments, pp. 3179-3186.	
Liu, Hong	Peking Univ.
Zhang, Tianwei	Peking Univ.
Wang, Chuangqi	Peking Univ.
18:00-18:15	TueET7.3

Hierarchical RRT for Humanoid Robot Footstep Planning with Multiple Constraints in Complex Environments, pp. 3187-3194. Attachment

Liu, Hong	Peking Univ.
Sun, Qing	Peking Univ. Beijing
Zhang, Tianwei	Peking Univ.

18:15-18:30 TueET7.4

Comparison of Extremum Seeking Control Algorithms for Robotic Applications, pp. 3195-3202. Attachment

Calli, Berk	Delft Univ. of Tech.
Caarls, Wouter	Delft Univ. of Tech.
Jonker, Pieter	Delft Univ. of Tech.
Wisse, Martijn	Delft Univ. of Tech.

TueET8 Gemini 1

Novel Robot Components and Systems (Regular Session)

Chair: Pradalier, Cedric	ETH Zurich
Co-Chair: Régnier, Stéphane	Univ. Pierre et Marie Curie

17:30-17:45 TueET8.1

Stable Haptic Feedback Based on a Dynamic Vision Sensor for Microrobotics, pp. 3203-3208.

Bolopion, Aude	UCF ENSMM UTBM / CNRS UMR 6174
Ni, Zhenjiang	Univ. Pierre et Marie Curie, Paris VI
Agnus, Joël	FEMTO-st Inst.
Benosman, Ryad Benjamin	Univ. Pierre and Mariue Curie
Régnier, Stéphane	Univ. Pierre et Marie Curie

17:45-18:00 TueET8.2

A Hovering Flapping-Wing Microrobot with Altitude Control and Passive Upright Stability, pp. 3209-3216. Attachment

Teoh, Zhi Ern	Harvard Univ.
Fuller, Sawyer	Harvard Univ.
Chirarattananon, Pakpong	Harvard Univ.
Perez-Arancibia, Nestor O	Harvard Univ.
Greenberg, Jack	Harvard Univ.
Wood, Robert	Harvard Univ.

18:00-18:15 TueET8.3

ModLock: A Manual Connector for Reconfigurable Modular Robots, pp. 3217-3222. Attachment

Davey, Jay	Univ. of New South Wales
Sastra, Jimmy	Univ. of Pennsylvania
Piccoli, Matthew	Univ. of Pennsylvania
Yim, Mark	Univ. of Pennsylvania

18:15-18:30 TueET8.4

A Sonar System Using a Sparse Broadband 3D Array for Robotic Applications, pp. 3223-3228.

Steckel, Jan	Univ. of Antwerp
Boen, Andre	Univ. of Antwerp
Peremans, Herbert	Univ. Antwerpen

TueET9 Fenix 1

Micro-Nano Scale Automation III (Regular Session)

17:30-17:45 TueET9.1

Magnetic Sugar Particles for Particulate Leaching in Fabrication of Sheet-Like Scaffold, pp. 3229-3234.

Hu, Chengzhi	Nagoya Univ.
Tercero Villagran, Carlos Rafael	Nagoya Univ.
Ikeda, Seiichi	Nagoya Univ.
Fukuda, Toshio	Nagoya Univ.
Arai, Fumihito	Nagoya Univ.
Negoro, Makoto	Fujita Health Univ.
Nakajima, Masahiro	Nagoya Univ.

17:45-18:00 TueET9.2

Ultra Long-Lifetime and High-Sensitive Fluorescent Measurement Using Difference Compensation Method for Single Cell Analysis, pp. 3235-3240.

Maruyama, Hisataka	Nagoya Univ.
Nakamura, Shohei	Nagoya Univ.
Kariya, Ryo	Nagoya Univ.
Masuda, Taisuke	Nagoya Univ.
Matsuda, Yu	Nagoya Univ.
Niimi, Tomohide	Nagoya Univ.
Honda, Ayae	Hosei Univ.
Arai, Fumihito	Nagoya Univ.

18:00-18:15 TueET9.3

Selective Nano-Injection Using Fluorescent Nano-Beads Based on Nanomanipulation, pp. 3241-3246.

Nakajima, Masahiro	Nagoya Univ.
Hirano, Takahiro	Nagoya Univ.
Kojima, Masaru	Osaka Univ.
Hisamoto, Naoki	Nagoya Univ.
Nakanishi, Naoya	Nagoya Univ.
Tajima, Hirotaka	Nagoya Univ.
Homma, Michio	Nagoya Univ.
Fukuda, Toshio	Nagoya Univ.

18:15-18:30 TueET9.4

Bacteria Manipulation Using Dielectrophoresis for Efficient Screening, pp. 3247-3252.

Kano, Tomonori	Keio Univ.
Inaba, Tomomi	Keio Univ.
Miki, Norihisa	Keio Univ.

TueET10 Lince

Exploration and Skill Learning (Regular Session)

Chair: Oudeyer, Pierre-Yves INRIA

17:30-17:45 TueET10.1

A Non-Linear Approach to Space Dimension Perception by a Naive Agent, pp. 3253-3259.

Laflaquière, Alban	Univ. Pierre et Marie Curie; Inst. des SystèmesIntellige
Argentieri, Sylvain	Univ. PierreetMarieCurie;Inst. (I
Breysse, Olivia	Pierre and Marie Curie Univ.
Genet, Stéphane	Pierre and Marie Curie Univ.
Gas, Bruno	Univ. Pierre et Marie Curie

17:45-18:00 TueET10.2

Self-Discovery of Motor Primitives and Learning Grasp Affordances, pp. 3260-3267. Attachment

Ugur, Emre	ATR
Sahin, Erol	Middle East Tech. Univ.
Oztop, Erhan	Ozyegin Univ.

18:00-18:15 TueET10.3

Learning to Recognize Parallel Combinations of Human Motion Primitives with Linguistic Descriptions Using Non-Negative Matrix Factorization, pp. 3268-3275.

Mangin, Olivier	INRIA
Oudeyer, Pierre-Yves	INRIA

18:15-18:30 TueET10.4

Iterative Learning of Feed-Forward Corrections for High-Performance Tracking, pp. 3276-3281.

Mueller, Fabian Lukas	ETH Zurich
Schoellig, Angela P.	ETH Zürich
D'Andrea, Raffaello	ETHZ

TueET11 Hidra

Robot Audition IV (Invited Session)

Chair: Nakadai, Kazuhiro	Honda Res. Inst. Japan Co., Ltd.
Co-Chair: Danès, Patrick	Univ. Toulouse - LAAS-CNRS - UPS
Organizer: Ince, Gokhan	Istanbul Tech. Univ.
Organizer: Nakadai, Kazuhiro	Honda Res. Inst. Japan Co., Ltd.
Organizer: Okuno, Hiroshi G.	Kyoto Univ.

Organizer: Danès, Patrick	Univ. Toulouse - LAAS-CNRS - UPS
Organizer: Martinson, Eric	US Naval Res. Lab.
Organizer: Iwahashi, Naoto	National Inst. ofInformationandCommunicationsTechnology

17:30-17:45 TueET11.1

Online Learning for Template-Based Multi-Channel Ego Noise Estimation, pp. 3282-3287.

Ince, Gokhan	Honda Res. Inst. Japan Co., Ltd.
Nakadai, Kazuhiro	Honda Res. Inst. Japan Co., Ltd.
Nakamura, Keisuke	Honda Res. Inst. Japan Co., Ltd.

17:45-18:00 TueET11.2

Outdoor Auditory Scene Analysis Using a Moving Microphone Array Embedded in a Quadrocopter, pp. 3288-3293.

Okutani, Keita	Tokyo Inst. of Tech.
Yoshida, Takami	Tokyo Inst. of Tech.
Nakamura, Keisuke	Honda Res. Inst. Japan Co., Ltd.
Nakadai, Kazuhiro	Honda Res. Inst. Japan Co., Ltd.

18:00-18:15 TueET11.3

Active Binaural Localization of Intermittent Moving Sources in the Presence of False Meaurements, pp. 3294-3299. Attachment

Portello, Alban	LAAS-CNRS
Danes, Patrick	Univ. Toulouse - LAAS-CNRS - UPS
Argentieri, Sylvain	Univ. PierreetMarieCurie;Inst. (I

TueEVT2 Fenix 2

Haptics and Haptic Interfaces II (Regular Session)

Chair: Konyo, Masashi — Tohoku Univ.

17:30-17:45 TueEVT2.1

Presenting Sharp Surface Shapes Using Overlapped Vibrotactile Stimuli, pp. 3300-3307.

Sakurai, Tatsuma	The Univ. of Tokyo
Konyo, Masashi	Tohoku Univ.
Tadokoro, Satoshi	Tohoku Univ.

17:45-18:00 TueEVT2.2

Forbidden-Region Virtual Fixtures from Streaming Point Clouds: Remotely Touching and Protecting a Beating Heart, pp. 3308-3313. Attachment

Rydén, Fredrik	Univ. of Washington
Chizeck, Howard	Univ. of Washington

18:00-18:15 TueEVT2.3

Six Degree-Of-Freedom Haptic Simulation of Sharp Geometric Features Using a Hybrid Sphere-Tree Model, pp. 3314-3319.

Yu, Ge	Beihang Univ.
Wang, Dangxiao	Beihang Univ.
Zhang, Yuru	Beihang Univ.
Zhang, Xin	Beihang Univ.

18:15-18:20 TueEVT2.4

Proactive Human Approach in Dynamic Environments, pp. 3320-3321. Attachment

Carton, Daniel	Tech. Univ. München
Turnwald, Annemarie	TUM Inst. for Automatic Control Engineering
Wollherr, Dirk	Tech. Univ. München
Kuehnlenz, Kolja	TUM
Buss, Martin	Tech. Univ. München

18:20-18:25 TueEVT2.5

A Vision of the Patient Room As an Architectural-Robotic Ecosystem, pp. 3322-3323. Attachment

Threatt, Anthony	Clemson Univ.
Merino, Jessica	Clemson Univ.
Green, Keith Evan	Clemson Univ.
Walker, Ian	Clemson Univ.
Brooks, Johnell	Clemson Univ.
Ficht, Sean	Clemson Univ.
Kriener, Robert	Clemson Univ. TMEIC
Mossey, Mary	Clemson Univ.

Mutlu, Alper	Clemson Univ.
Salvi, Darshana	Clemson Univ.
Schafer, George	Clemson Univ.
Srikanth, Pallavi	Clemson Univ.
Xu, Peng	Clemson Univ.
Manganelli, Joseph Charles	Clemson Univ.
Yanik, Paul	Clemson Univ.

18:25-18:30 TueEVT2.6

A Novel Interaction Method Based on a Mobile Device in Intelligent Space, pp. 3324-3325. Attachment

Matsuo, Ryotaro	Ritsumeikan Univ.
Lee, Joo-Ho	Ritsumeikan Univ.

WedAT1	Pegaso A
Pose Estimation (Regular Session)	

08:30-08:45 WedAT1.1

A Flexible 3D Object Localization System for Industrial Part Handling, pp. 3326-3333.

Skotheim, Øystein	SINTEF ICT
Lind, Morten	SINTEF Manufacturing AS
Ystgaard, Pål	SINTEF Raufoss Manufacturing AS
Fjerdingen, Sigurd Aksnes	SINTEF ICT

08:45-09:00 WedAT1.2

6D Pose Estimation of Textureless Shiny Objects Using Random Ferns for Bin-Picking, pp. 3334-3341.

Moreira Rodrigues, Jose Jeronimo	Inst. for Systems and Robotics, Inst. Te
Kim, Jun-Sik	Carnegie Mellon Univ.
Furukawa, Makoto	Honda Engeneering Co., Lda., Japan
Xavier, João	Inst. Superior Técnico—Inst. de Sistemas e Robótica
Aguiar, Pedro	Inst. for Systems and Robotics, Inst. Superior Técnico,
Kanade, Takeo	Carnegie Mellon Univ.

09:00-09:15 WedAT1.3

3D Pose Estimation of Daily Objects Using an RGB-D Camera, pp. 3342-3349.

Choi, Changhyun	Georgia Inst. of Tech.
Christensen, Henrik Iskov	Georgia Inst. of Tech.

09:15-09:30 WedAT1.4

Multi-Camera Based Real-Time Configuration Estimation of Continuum Robots, pp. 3350-3355.

Weber, Bernhard	Tech. Univ. München
Zeller, Paul	Tech. Univ. München
Kühnlenz, Kolja	Tech. Univ. München

WedAT2	Fenix 2
Physical Human-Robot Interaction I (Regular Session)	
Chair: Hirata, Yasuhisa	Tohoku Univ.
Co-Chair: Lee, Dongheui	Tech. Univ. of Munich

08:30-08:45 WedAT2.1

Wire-Type Human Support System Controlled by Servo Brakes, pp. 3356-3361.

Hirata, Yasuhisa	Tohoku Univ.
Tozaki, Yuki	Tohoku Univ.
Kosuge, Kazuhiro	Tohoku Univ.

08:45-09:00 WedAT2.2

Real-Time Estimate of Period Derivatives Using Adaptive Oscillators: Application to Impedance-Based Walking Assistance, pp. 3362-3368.

Ronsse, Renaud	Univ. catholique de Louvain
De Rossi, Stefano Marco Maria	Scuola Superiore Sant'Anna
Vitiello, Nicola	Scuola Superiore Sant Anna
Lenzi, Tommaso	Scuola Superiore Sant'Anna
Koopman, Bram	Univ. of Twente
Van der Kooij, Herman	Univ. of Twente
Carrozza, Maria Chiara	Scuola Superiore Sant'Anna
Ijspeert, Auke	EPFL

09:00-09:15 WedAT2.3

Elastic Strips: Implementation on a Physical Humanoid Robot, pp. 3369-3376.

Kwon, Jinsung	Stanford Univ.
Yoshikawa, Taizo	Honda R&D Japan
Khatib, Oussama	Stanford Univ.

09:15-09:30 WedAT2.4

6D Workspace Constraints for Physical Human-Robot Interaction Using Invariance Control with Chattering Reduction, pp. 3377-3383. Attachment

Kimmel, Melanie	Tech. Univ. München

Lawitzky, Martin — Tech. Univ. Muenchen
Hirche, Sandra — Tech. Univ. München

WedAT3 — Pegaso B
Field Robotics I (Regular Session)

Chair: Nunes, Urbano — Univ. de Coimbra
Co-Chair: Bergerman, Marcel — Carnegie Mellon Univ.

08:30-08:45 — WedAT3.1

Natural Feature Based Localization in Forested Environments, pp. 3384-3390.
Song, Meng — Nankai Univ.
Sun, Fengchi — Nankai Univ.
Iagnemma, Karl — MIT

08:45-09:00 — WedAT3.2

A Practical Obstacle Detection System for Autonomous Orchard Vehicles, pp. 3391-3398.
Freitas, Gustavo — Federal Univ. of Rio de Janeiro
Hamner, Brad — Carnegie Mellon Univ.
Bergerman, Marcel — Carnegie Mellon Univ.
Singh, Sanjiv — Carnegie Mellon Univ.

09:00-09:15 — WedAT3.3

Electro-Hydraulically Actuated Forestry Manipulator: Modeling and Identification, pp. 3399-3404.
La Hera, Pedro — Swedish Univ. of Agricultural Sciences
Ur Rehman, Bilal — Umeå Univ.
Ortiz Morales, Daniel — Umeå Univ.

09:15-09:30 — WedAT3.4

Rocker-Pillar : Design of the Rough Terrain Mobile Robot Platform with Caterpillar Tracks and Rocker Bogie Mechanism, pp. 3405-3410. Attachment
Choi, Dongkyu — seoul national Univ. RoDEL
Cho, Sunme — Seoul National Univ.
Kim, Jeongryul — Seoul National Univ.
Jung, Seungmin — seoul national Univ.
Kim, Jongwon — Seoul National Univ.

WedAT4 — Fenix 3
Humanoid Robots II (Regular Session)

Chair: Oh, Paul Y. — Drexel Univ.

08:30-08:45 — WedAT4.1

Online Walking Pattern Generation for Push Recovery and Minimum Delay to Commanded Change of Direction and Speed, pp. 3411-3416. Attachment
Urata, Junichi — The Univ. of Tokyo
Nishiwaki, Koichi — National Inst. of AIST
Nakanishi, Yuto — The Univ. of Tokyo
Okada, Kei — The Univ. of Tokyo
Kagami, Satoshi — National Inst. of AIST
Inaba, Masayuki — The Univ. of Tokyo

08:45-09:00 — WedAT4.2

Humanoid Full-Body Controller Adapting Constraints in Structured Objects through Updating Task-Level Reference Force, pp. 3417-3424.
Nozawa, Shunichi — The Univ. of Tokyo
Kumagai, Iori — Univ. of Tokyo
Kakiuchi, Yohei — The Univ. of Tokyo
Okada, Kei — The Univ. of Tokyo
Inaba, Masayuki — The Univ. of Tokyo

09:00-09:15 — WedAT4.3

Applying Human Motion Capture to Design Energy-Efficient Trajectories for Miniature Humanoids, pp. 3425-3431.
Sohn, Kiwon — Drexel Univ.
Oh, Paul Y. — Drexel Univ.

09:15-09:30 — WedAT4.4

Trajectory Design and Control of Edge-Landing Walking of a Humanoid for Higher Adaptability to Rough Terrains, pp. 3432-3439.

Nishiwaki, Koichi — National Inst. of AIST
Kagami, Satoshi — National Inst. of AIST

WedAT5 — Gemini 2
Kinematic Modeling (Regular Session)

Chair: Morel, Guillaume — Univ. Pierre et Marie Curie - Paris 6

08:30-08:45 — WedAT5.1

Constant Curvature Continuum Kinematics As Fast Approximate Model for the Bionic Handling Assistant, pp. 3440-3446.

Rolf, Matthias — Bielefeld Univ.
Steil, Jochen J. — Bielefeld Univ.

08:45-09:00 — WedAT5.2

Fast Inverse Kinematics Algorithm for Large DOF System with Decomposed Gradient Computation Based on Recursive Formulation of Equilibrium, pp. 3447-3452.

Ayusawa, Ko — Univ. of Tokyo
Nakamura, Yoshihiko — Univ. of Tokyo

09:00-09:15 — WedAT5.3

Forward Kinematic Model for Continuum Robotic Surfaces, pp. 3453-3460.

Merino, Jessica — Clemson Univ.
Threatt, Anthony — Clemson Univ.
Walker, Ian — Clemson Univ.
Green, Keith Evan — Clemson Univ.

09:15-09:30 — WedAT5.4

A Method for Measuring the Upper Limb Motion and Computing a Compatible Exoskeleton Trajectory, pp. 3461-3466.

Jarrasse, Nathanael — Imperial Coll. London
Crocher, Vincent — Univ. Pierre et Marie Curie - Paris 6, ISIR,CNRS-UMR7222
Morel, Guillaume — Univ. Pierre et Marie Curie - Paris 6

WedAT6 — Gemini 3
Mapping I (Regular Session)

08:30-08:45 — WedAT6.1

IPJC: The Incremental Posterior Joint Compatibility Test for Fast Feature Cloud Matching, pp. 3467-3474.

Li, Yangming — Inst. of Intelligence Machines, ChineseAcademyofSciences
Olson, Edwin — Univ. of Michigan

08:45-09:00 — WedAT6.2

Fast Incremental Clustering and Representation of a 3D Point Cloud Sequence with Planar Regions, pp. 3475-3480.
Attachment

Donnarumma, Francesco — Inst. of Cognitive Science and Tech.
Lippiello, Vincenzo — Univ. di Napoli Federico II
Saveriano, Matteo — Tech. Univ. München

09:00-09:15 — WedAT6.3

Patch Map: A Benchmark for Occupancy Grid Algorithm Evaluation, pp. 3481-3488.

Merali, Rehman — Univ. of Toronto
Barfoot, Timothy — Univ. of Toronto

09:15-09:30 — WedAT6.4

Independent Markov Chain Occupancy Grid Maps for Representation of Dynamic Environments, pp. 3489-3495.

Saarinen, Jari Pekka — Aalto Univ.
Andreasson, Henrik — Örebro Univ.
Lilienthal, Achim, J. — Örebro Univ.

WedAT7 — Vega
Multiple Mobile Robot Planning I (Regular Session)

Chair: Arkin, Ronald — Georgia Tech.

08:30-08:45 — WedAT7.1

Combining Classification and Regression for WiFi Localization of Heterogeneous Robot Teams in Unknown

Environments, pp. 3496-3503. Attachment

Balaguer, Benjamin	Univ. of California, Merced
Erinc, Gorkem	Univ. of California Merced
Carpin, Stefano	Univ. of California, Merced

08:45-09:00 WedAT7.2

Distributed Coordination of a Formation of Heterogeneous Agents with Individual Regrets and Asynchronous Communications, pp. 3504-3511.

Carlési, Nicolas	LIRMM, Univ. Montpellier 2
Bianchi, Pascal	Inst. Télécom / Télécom Paris-Tech. CNRS-LTCI

09:00-09:15 WedAT7.3

A Bio-Inspired Developmental Approach to Swarm Robots Self-Organization, pp. 3512-3517.

Meng, Yan	Stevens Inst. of Tech.
Guo, Hongliang	Stevens Inst. of Tech.

09:15-09:30 WedAT7.4

Real-Time Optimization of Trajectories That Guarantee the Rendezvous of Mobile Robots, pp. 3518-3525. Attachment

Gowal, Sven	EPFL
Martinoli, Alcherio	EPFL

WedAT8 Gemini 1

Dynamics and Control I (Regular Session)

08:30-08:45 WedAT8.1

Contribution to the Modeling of Cable-Suspended Parallel Robot Hanged on the Four Points, pp. 3526-3531.

Filipovic, Mirjana	Mihajlo Pupin Inst.
Djuric, Ana	Wayne State Univ.
Kevac, Ljubinko	School of Electrical Engineering, The Univ. of Belgrade

08:45-09:00 WedAT8.2

Modeling and Control of a Flying Robot for Contact Inspection, pp. 3532-3537. Attachment

Fumagalli, Matteo	Univ. of Twente
Naldi, Roberto	CASY - D.E.I.S. - Univ. di Bologna
Macchelli, Alessandro	Univ. of Bologna
Carloni, Raffaella	Univ. of Twente
Stramigioli, Stefano	Univ. of Twente
Marconi, Lorenzo	Univ. of Bologna

09:00-09:15 WedAT8.3

Planning Trajectories on Uneven Terrain Using Optimization and Non-Linear Time Scaling Techniques, pp. 3538-3545. Attachment

Singh, Arun	International Inst. of Information Tech.
Krishna, Madhava	IIIT Hyderabad
Saripalli, Srikanth	Arizona State Univ.

09:15-09:30 WedAT8.4

Distributed Voronoi Partitioning for Multi-Robot Systems with Limited Range Sensors, pp. 3546-3552.

Guruprasad, Kr	National Inst. of Tech. Karnataka
Dasgupta, Prithviraj (Raj)	Univ. of Nebraska, Omaha

WedAT9 Fenix 1

Medical Robotics I (Regular Session)

Chair: Arai, Fumihito	Nagoya Univ.
Co-Chair: Abbott, Jake	Univ. of Utah

08:30-08:45 WedAT9.1

Control Strategies of an Assistive Robot Using a Brain-Machine Interface, pp. 3553-3558.

Úbeda, Andrés	Univ. Miguel Hernández de Elche
Iañez, Eduardo	Univ. Miguel Hernandez de Elche
Badesa, Francisco Javier	Miguel Hernandez Univ.
Morales Vidal, Ricardo	Miguel Hernandez Univ.
Azorin, Jose M.	Univ. Miguel Hernandez de Elche
Garcia, Nicolas	Univ. Miguel Hernandez de Elche

08:45-09:00	WedAT9.2
Non-Ideal Behaviors of Magnetically Driven Screws in Soft Tissue, pp. 3559-3564.	
Mahoney, Arthur	Univ. of Utah
Nelson, Nathan David	Univ. of Utah
Parsons, Erin	Univ. of Utah
Abbott, Jake	Univ. of Utah
09:00-09:15	WedAT9.3
2-D Optical Encoding of Catheter Motion and Cyber-Physical System for Technical Skills Measurement and Quantitative Evaluation in Endovascular Surgery, pp. 3565-3570.	
Kodama, Hirokatsu	Nagoya Univ.
Tercero Villagran, Carlos Rafael	Nagoya Univ.
Ooe, Katsutoshi	Nagoya Univ.
Shi, Chaoyang	Nagoya Univ.
Ikeda, Seiichi	Nagoya Univ.
Fukuda, Toshio	Nagoya Univ.
Arai, Fumihito	Nagoya Univ.
Negoro, Makoto	Fujita Health Univ.
Takahashi, Ikuo	Anjo Kosei Hospital
Kwon, Guiryong	Terumo Clinical Supply Ltd.
09:15-09:30	WedAT9.4
A Voice-Coil Actuated Ultrasound Micro-Scanner for Intraoral High Resolution Impression Taking, pp. 3571-3576.	
Vollborn, Thorsten	RWTH Aachen Univ.
Habor, Daniel	RWTH Aachen Univ. Chair of Medical Engineering
Junk, Simon	RWTH Aachen Univ.
Radermacher, Klaus	RWTH Aachen Univ.
Heger, Stefan	RWTH Aachen Univ. Chair of Medical Engineering

WedAT10	Lince
Skill Learning – Dynamics (Regular Session)	
Chair: Dillmann, Rüdiger	KIT Karlsruhe Inst. for Tech.
08:30-08:45	WedAT10.1
Autonomous Online Learning of Velocity Kinematics on the Icub: A Comparative Study, pp. 3577-3582. Attachment	
Droniou, Alain	ISIR - Univ. Pierre et Marie Curie
Ivaldi, Serena	Univ. Pierre et Marie Curie
Padois, Vincent	Univ. Pierre et Marie Curie
Sigaud, Olivier	Univ. Pierre et Marie Curie - Paris 6
08:45-09:00	WedAT10.2
Online Learning of Inverse Dynamics Via Gaussian Process Regression, pp. 3583-3590.	
Sun de la Cruz, Joseph	Univ. of Waterloo
Owen, William	Univ. of Waterloo
Kulic, Dana	Univ. of Waterloo
09:00-09:15	WedAT10.3
Learning Concurrent Motor Skills in Versatile Solution Spaces, pp. 3591-3597.	
Daniel, Christian	TU Darmstadt
Neumann, Gerhard	TU Darmstadt
Peters, Jan	Tech. Univ. Darmstadt
09:15-09:30	WedAT10.4
Learning Robot Dynamics with Kinematic Bezier Maps, pp. 3598-3604.	
Ulbrich, Stefan	Karlsruhe Inst. of Tech. (KIT)
Bechtel, Michael	Karlsruhe Inst. of Tech.
Asfour, Tamim	Karlsruhe Inst. of Tech. (KIT)
Dillmann, Rüdiger	KIT Karlsruhe Inst. for Tech.

WedBT1	Pegaso A
Sensor Fusion (Regular Session)	
Chair: Simmons, Reid	Carnegie Mellon Univ.
Co-Chair: Jansson, Magnus	KTH Royal Inst. of Tech.

09:30-09:45 WedBT1.1

Ground Plane Feature Detection in Mobile Vision-Aided Inertial Navigation, pp. 3605-3611. Attachment

Panahandeh, Ghazaleh	KTH-Royal Inst. of Tech.
Mohammadiha, Nasser	KTH Royal Inst. of Tech.
Jansson, Magnus	KTH Royal Inst. of Tech.

09:45-10:00 WedBT1.2

Sensor Fusion for Human Safety in Industrial Workcells, pp. 3612-3619.

Rybski, Paul E.	Carnegie Mellon Univ.
Anderson-Sprecher, Peter	Carnegie Mellon Univ.
Huber, Daniel	CMU
Niessl, Chris	Carnegie Mellon Univ.
Simmons, Reid	Carnegie Mellon Univ.

10:00-10:15 WedBT1.3

Gaussian Processes for Lens Distortion Modeling, pp. 3620-3625.

Ranganathan, Pradeep	Univ. of Michigan
Olson, Edwin	Univ. of Michigan

10:15-10:30 WedBT1.4

Distributed Altitude and Attitude Estimation from Multiple Distance Measurements, pp. 3626-3632.

Kriegleder, Maximilian	ETH Zurich
Oung, Raymond	ETH Zurich
D'Andrea, Raffaello	ETHZ

WedBT2 Fenix 2

Physical Human-Robot Interaction II (Regular Session)

Chair: Hirata, Yasuhisa	Tohoku Univ.
Co-Chair: Lee, Dongheui	Tech. Univ. of Munich

09:30-09:45 WedBT2.1

Human-Humanoid Haptic Joint Object Transportation Case Study, pp. 3633-3638. Attachment

Bussy, Antoine	CNRS-UM2 LIRMM
Kheddar, Abderrahmane	Intelligent Systems Res. Inst.
Crosnier, André	LIRMM
Keith, François	Lirmm

09:45-10:00 WedBT2.2

Disagreement-Aware Physical Assistance through Risk-Sensitive Optimal Feedback Control, pp. 3639-3645. Attachment

Medina Hernandez, Jose Ramon	Tech. Univ. München
Lorenz, Tamara	Ludwig-Maximilians-Univ. Munich
Lee, Dongheui	Tech. Univ. of Munich
Hirche, Sandra	Tech. Univ. München

10:00-10:15 WedBT2.3

Feedback Motion Planning and Learning from Demonstration in Physical Robotic Assistance: Differences and Synergies, pp. 3646-3652. Attachment

Lawitzky, Martin	Tech. Univ. Muenchen
Medina Hernandez, Jose Ramon	Tech. Univ. München
Lee, Dongheui	Tech. Univ. of Munich
Hirche, Sandra	Tech. Univ. München

10:15-10:30 WedBT2.4

Design of a New Hybrid Control and Knee Orthosis for Human Walking and Rehabilitation, pp. 3653-3658.

Huang, Tzu-Hao	National Taiwan Univ.
Huang, Han-Pang	National Taiwan Univ.
Cheng, Ching-An	National Taiwan Univ.
Kuan, Jiun-Yih	Massachusetts Inst. of Tech.
Lee, Po-Ting	National Taiwan Univ.
Huang, Shih-Yi	National Taiwan Univ.

WedBT3 Pegaso B

Field Robotics II (Regular Session)

Chair: Nunes, Urbano	Univ. de Coimbra

Co-Chair: Bergerman, Marcel — Carnegie Mellon Univ.

09:30-09:45 — WedBT3.1

Monocular Visual Navigation of an Autonomous Vehicle in Natural Scene Corridor-Like Environments, pp. 3659-3666.

Zhang, Ji — Carnegie Mellon Univ.
Kantor, George — Carnegie Mellon Univ.
Bergerman, Marcel — Carnegie Mellon Univ.
Singh, Sanjiv — Carnegie Mellon Univ.

09:45-10:00 — WedBT3.2

The AmphiHex: A Novel Amphibious Robot with Transformable Leg-Flipper Composite Propulsion Mechanism, pp. 3667-3672. Attachment

Liang, Xu — Univ. of Science and Tech. of China
Xu, Min — Univ. of Science & Tech. of China
Xu, Lichao — Univ. of Science and Tech. of China
Liu, Peng — Univ. of Science and Tech. of China
Ren, Xiaoshuang — Univ. of Science and Tech. of China
Yang, Jie — Univ. of Science and Tech. of China
Zhang, Shiwu — Univ. of Science and Tech. of China
Kong, Ziwen — Univ. of Science and Tech. of China

10:00-10:15 — WedBT3.3

Piecewise Affine Control for Fast Unmanned Ground Vehicles, pp. 3673-3678.

Benine-Neto, André — ISIR - Inst. des Systèmes Intelligents et Robotique
Grand, Christophe — Univ. Pierre et Marie Curie

10:15-10:30 — WedBT3.4

Tube-Type Active Scope Camera with High Mobility and Practical Functionality, pp. 3679-3686.

Namari, Hiroaki — Tohoku Univ.
Wakana, Kazuhito — Tohoku Univ.
Ishikura, Michihisa — Tohoku Univ.
Konyo, Masashi — Tohoku Univ.
Tadokoro, Satoshi — Tohoku Univ.

WedBT4 — Fenix 3

Humanoid Robots III (Regular Session)

Chair: Oh, Paul Y. — Drexel Univ.

09:30-09:45 — WedBT4.1

Design Methodology for the Thorax and Shoulder of Human Mimetic Musculoskeletal Humanoid Kenshiro, pp. 3687-3692. Attachment

Kozuki, Toyotaka — Univ. of Tokyo
Asano, Yuki — Univ. of Tokyo
Osada, Masahiko — Tokyo Univ. Inaba Lab. Japan
Shirai, Takuma — Tokyo Univ.
Urata, Junichi — The Univ. of Tokyo
Nakanishi, Yuto — The Univ. of Tokyo
Okada, Kei — The Univ. of Tokyo
Inaba, Masayuki — The Univ. of Tokyo
Mizoguchi, Hironori — The Univ. of Tokyo

09:45-10:00 — WedBT4.2

State Estimation of a Walking Humanoid Robot, pp. 3693-3699.

Xinjilefu, X — Carnegie Mellon Univ.
Atkeson, Christopher — CMU

10:00-10:15 — WedBT4.3

Dynamic Motion Imitation of Two Articulated Systems Using Nonlinear Time Scaling of Joint Trajectories, pp. 3700-3705.

Munirathinam, Karthick — Ec. centrale de nantes
Sakka, Sophie — Univ. of Poitiers/IRCCyN
Chevallereau, Christine — CNRS

10:15-10:30 — WedBT4.4

The Anatomy of a Fall: Automated Real-Time Analysis of Raw Force Sensor Data from Bipedal Walking Robots and Humans, pp. 3706-3713.

Kormushev, Petar	Italian Inst. of Tech.
Ugurlu, Barkan	Toyota Tech. Inst.
Colasanto, Luca	Fondazione Istituto Italiano di Tecnologia
Tsagarakis, Nikolaos	Istituto Italiano di Tecnologia
Caldwell, Darwin G.	Italian Inst. of Tech.

WedBT5	Gemini 2
Identification, Modeling and Motion Control (Regular Session)	
Chair: Kogiso, Kiminao	Nara Inst. of Science and Tech.
09:30-09:45	WedBT5.1
Identification Procedure for McKibben Pneumatic Artificial Muscle Systems, pp. 3714-3721.	
Kogiso, Kiminao	Nara Inst. of Science and Tech.
Sawano, Kenta	Nara Inst. of Science and Tech.
Itto, Takashi	Mitsui Chemicals, Incorporated
Sugimoto, Kenji	Nara Inst. of Science and Tech.
09:45-10:00	WedBT5.2
The Cubli: A Cube That Can Jump up and Balance, pp. 3722-3727. Attachment	
Gajamohan, Mohanarajah	ETH Zurich
Merz, Michael	ETHZ
Thommen, Igor	ETHZ
D'Andrea, Raffaello	ETHZ
10:00-10:15	WedBT5.3
Dynamic Model of Three Wheeled Narrow Tilting Vehicle and Corresponding Experiment Verification, pp. 3728-3733.	
Furuichi, Hiroki	Nagoya Univ.
Huang, Jian	Huazhong Univ. of Science and Tech.
Matsuno, Takayuki	Okayama Univ.
Fukuda, Toshio	Nagoya Univ.
10:15-10:30	WedBT5.4
An Energy-Based State Observer for Dynamical Subsystems with Inaccessible State Variables, pp. 3734-3740.	
Khalil, Islam S.M.	Univ. of Twente
Sabanovic, Asif	Sabanci Univ.
Misra, Sarthak	Univ. of Twente

WedBT7	Vega
Multiple Mobile Robot Planning II (Regular Session)	
Chair: Arkin, Ronald	Georgia Tech.
09:30-09:45	WedBT7.1
Goal Assignment Using Distance Cost in Multi-Robot Exploration, pp. 3741-3746.	
Faigl, Jan	Czech Tech. Univ. in Prague
Kulich, Miroslav	Czech Tech. Univ. in Prague
Preucil, Libor	Czech Tech. Univ. in Prague
09:45-10:00	WedBT7.2
Multi-Agent Generalized Probabilistic RoadMaps (MAGPRM), pp. 3747-3753.	
Kumar, Sandip	Texas A&M Univ.
Chakravorty, Suman	Texas A&M Univ.
10:00-10:15	WedBT7.3
Finding Graph Topologies for Feasible Multirobot Motion Planning, pp. 3754-3759.	
Kolhe, Pushkar	Georgia Inst. of Tech.
Christensen, Henrik Iskov	Georgia Inst. of Tech.
10:15-10:30	WedBT7.4
Dynamic Positioning of Beacon Vehicles for Cooperative Underwater Navigation, pp. 3760-3767.	
Bahr, Alexander	Ec. Pol. Federale de Lausanne
Leonard, John	MIT
Martinoli, Alcherio	EPFL

WedBT8	Gemini 1

Dynamics and Control II (Regular Session)

09:30-09:45 WedBT8.1

Exploiting Redundancy in Cartesian Impedance Control of UAVs Equipped with a Robotic Arm, pp. 3768-3773.

Lippiello, Vincenzo — Univ. di Napoli Federico II
Ruggiero, Fabio — Univ. di Napoli Federico II

09:45-10:00 WedBT8.2

Modeling and Motion Analysis of Fixed-Pitch Co-Axial Rotor Unmanned Helicopter, pp. 3774-3779.

Suzuki, Satoshi — Shinshu Univ.
Ishii, Takahiro — Shinshu Univ.
Yanagisawa, Gennai — GEN Corp.
Tomita, Kazuki — Engineering System
Yokoyama, Yasutoshi — GEN Corp.

10:00-10:15 WedBT8.3

A Hybrid Particle/grid Wind Model for Realtime Small UAV Flight Simulation, pp. 3780-3785.

Harmat, Adam — McGill Univ.
Sharf, Inna — McGill Univ.
Trentini, Michael — Defence Res. and Development Canada

10:15-10:30 WedBT8.4

Parallel Force-Position Control Mediated by Tactile Maps for Robot Contact Tasks, pp. 3786-3791.

Denei, Simone — Univ. of Genova
Mastrogiovanni, Fulvio — Univ. of Genova, Italy
Cannata, Giorgio — Univ. of Genova

WedBT9 Fenix 1

Medical Robotics II (Regular Session)

Chair: Arai, Fumihito — Nagoya Univ.
Co-Chair: Abbott, Jake — Univ. of Utah

09:30-09:45 WedBT9.1

Space-Time Localization and Registration on the Beating Heart, pp. 3792-3797.

Wood, Nathan — Carnegie Mellon Univ.
Waugh, Kevin — Carnegie Mellon Univ.
Liu, Tian Yu — Carnegie Mellon Univ.
Zenati, Marco — Harvard Medical School
Riviere, Cameron — Carnegie Mellon Univ.

09:45-10:00 WedBT9.2

Reliable Planning and Execution of a Human-Robot Cooperative System Based on Noninvasive Brain-Computer Interface with Uncertainty, pp. 3798-3805. Attachment

Jia, Wenchuan — Shanghai Univ.
Huang, Dandan — Virginia Commonwealth Univ.
Bai, Ou — Virginia Commonwealth Univ.
Pu, Huayan — Shanghai Univ.
Luo, Xin — Huazhong Univ. of Science & Tech.
Chen, Xuedong — Huazhong Univ. of Science and Tech.

10:00-10:15 WedBT9.3

Catheter Navigation Based on Probabilistic Fusion of Electromagnetic Tracking and Physically-Based Simulation, pp. 3806-3811.

Dore, Alessio — Imperial Coll. London
Smoljkic, Gabrijel — Inetec, Inst. for nuclear Tech.
Vander Poorten, Emmanuel B — Katholieke Univ. Leuven
Sette, Mauro — Katholieke Univ. Leuven
Vander Sloten, Jos — Katholieke Univ. Leuven
Yang, Guang-Zhong — Imperial Coll. London

10:15-10:30 WedBT9.4

Organ-Explanted Bionic Simulator (OBiS) : Concurrent Microcardiovascular Anastomosis of Chick Embryo, pp. 3812-3817.

Owaki, Hirofumi — Nagoya Univ.
Masuda, Taisuke — Nagoya Univ.
Kawahara, Tomohiro — Kyushu Inst. of Tech.

Takei, Natsuki	Nagoya Univ.
Kodama, Keiko	Nagoya Univ.
Miyasaka, Kota	Tohoku Univ.
Ogura, Toshihiko	Tohoku Univ.
Arai, Fumihito	Nagoya Univ.

WedBT10	Lince
Visual Learning I (Regular Session)	

09:30-09:45 WedBT10.1

Bag of Multimodal Hierarchical Dirichlet Processes: Model of Complex Conceptual Structure for Intelligent Robots, pp. 3818-3823.

Nakamura, Tomoaki	Univ. of Electro-Communications
Nagai, Takayuki	Univ. of Electro-Communications
Iwahashi, Naoto	National Inst. ofInformationandCommunicationsTechnology

09:45-10:00 WedBT10.2

Robust and Fast Visual Tracking Using Constrained Sparse Coding and Dictionary Learning, pp. 3824-3829. Attachment

Bai, Tianxiang	City Univ. of Hong Kong
Li, Y.F.	City Univ. of Hong Kong
Zhou, Xiaolong	City Univ. of Hong Kong

10:00-10:15 WedBT10.3

Learning a Projective Mapping to Locate Animals in Video Using RFID, pp. 3830-3836.

Huang, Pipei	Georgia Inst. of Tech.
Sawhney, Rahul	Georgia Inst. of Tech.
Walker, Daniel	Georgia Inst. of Tech.
Wallen, Kim	Emory Univ.
Bobick, Aaron	Georgia Tech.
Qin, Shiyin	Beihang Univ.
Balch, Tucker	Georgia Inst. of Tech.

10:15-10:30 WedBT10.4

A Discriminative Approach for Appearance Based Loop Closing, pp. 3837-3843.

Ciarfuglia, Thomas	Univ. degli Studi di Perugia
Costante, Gabriele	Univ. of Perugia
Valigi, Paolo	Univ. di Perugia
Ricci, Elisa	Univ. of Perugia

WedBVT6	Gemini 3
Mapping II (Regular Session)	
Chair: Olson, Edwin	Univ. of Michigan

09:30-09:45 WedBVT6.1

Variable Reordering Strategies for SLAM, pp. 3844-3850.

Agarwal, Pratik	Univ. of Michigan
Olson, Edwin	Univ. of Michigan

09:45-10:00 WedBVT6.2

An Object-Based Semantic World Model for Long-Term Change Detection and Semantic Querying, pp. 3851-3858. Attachment

Mason, Julian	Duke Univ.
Marthi, Bhaskara	Willow Garage

10:00-10:15 WedBVT6.3

Planar Polygon Extraction and Merging from Depth Images, pp. 3859-3864. Attachment

Biswas, Joydeep	Carnegie Mellon Univ.
Veloso, Manuela	Carnegie Mellon Univ.

10:15-10:20 WedBVT6.4

Reconfigurable Intelligent Space, R+iSpace, and Mobile Module, MoMo, pp. 3865-3866. Attachment

Park, JongSeung	Ritsumeikan Univ.
Lee, Joo-Ho	Ritsumeikan Univ.

10:20-10:25 WedBVT6.5

2D PCA-Based Localization for Mobile Robots in Unstructured Environments, pp. 3867-3868. Attachment

Carreira, Fernando	Inst. Superior de Engenharia de Lisboa,Pol.
Christo, Camilo	IDMEC / Inst. Superior Técnico, TU Lisbon
Valério, Duarte	IDMEC/IST, TULisbon
Ramalho, Mário António	IDMEC / Inst. Superior Técnico, TU Lisbon.
Cardeira, Carlos	IDMEC / Inst. Superior Técnico, TU Lisbon
Calado, João Manuel Ferreira	IDMEC / ISEL - Inst. Superior de EngenhariadeLisboa,Pol.
Oliveira, Paulo	Inst. Superior Técnico 501507930

10:25-10:30 WedBVT6.6

Deformable Soft Wheel Robot Using Hybrid Actuation, pp. 3869-3870. Attachment

Cho, Kyu-Jin	Seoul National Univ. Biorobotics Lab.
Koh, Je-Sung	Seoul National Univ.
Lee, Dae-young	Seoul National Univ.
Kim, Seung-Won	Seoul National Univ.

WedCT1 Pegaso A

Object Detection and Tracking (Regular Session)

11:00-11:15 WedCT1.1

Reliable Object Detection and Segmentation Using Inpainting, pp. 3871-3876.

Joung, Ji Hoon	Hyundai Heavy Industries Co., Ltd.
Ryoo, Michael S.	Jet Propulsion Lab. California Inst. ofTechnology
Choi, Sunglok	ETRI
Kim, Sung Rak	Hyundai Heavy Industries Co. Ltd.,

11:15-11:30 WedCT1.2

3D Textureless Object Detection and Tracking: An Edge-Based Approach, pp. 3877-3884. Attachment

Choi, Changhyun	Georgia Inst. of Tech.
Christensen, Henrik Iskov	Georgia Inst. of Tech.

11:30-11:45 WedCT1.3

Exploiting and Modeling Local 3D Structure for Predicting Object Locations, pp. 3885-3892.

Aydemir, Alper	Royal Inst. of Tech. (KTH)
Jensfelt, Patric	KTH - Royal Inst. of Tech.

11:45-12:00 WedCT1.4

Birth Intensity Online Estimation in GM-PHD Filter for Multi-Target Visual Tracking, pp. 3893-3898. Attachment

Zhou, Xiaolong	City Univ. of Hong Kong
Li, Y.F.	City Univ. of Hong Kong
He, Bingwei	Fuzhou Univ.
Bai, Tianxiang	City Univ. of Hong Kong
Tang, Yazhe	City Univ. of Hong Kong

12:00-12:15 WedCT1.5

Fast High Resolution 3D Laser Scanning by Real-Time Object Tracking and Segmentation, pp. 3899-3906.

Thielemann, Jens	SINTEF
Berge, Asbjørn	SINTEF
Skotheim, Øystein	SINTEF ICT
Kirkhus, Trine	SINTEF

12:15-12:30 WedCT1.6

A Heteroscedastic Approach to Independent Motion Detection for Actuated Visual Sensors, pp. 3907-3913. Attachment

Ciliberto, Carlo	ISTITUTO ITALIANO DI TECNOLOGIA
Fanello, Sean Ryan	Istituto Italiano di Tecnologia
Natale, Lorenzo	Istituto Italiano di Tecnologia
Metta, Giorgio	Istituto Italiano di Tecnologia (IIT)

WedCT2 Fenix 2

Human Performance Augumentation (Regular Session)

Chair: Hasegawa, Yasuhisa Univ. of Tsukuba

11:00-11:15 WedCT2.1

Full-Body Exoskeleton Robot Control for Walking Assistance by Style-Phase Adaptive Pattern Generation, pp. 3914-3920. Attachment

Matsubara, Takamitsu NAIST/ATR

Uchikata, Akimasa	NAIST/ATR
Morimoto, Jun	ATR Computational Neuroscience Lab.

11:15-11:30 WedCT2.2

Development and Evaluation of Add-On End-Effector for Linear Power Assist Unit with Variable Assist Gain, pp. 3921-3928. Attachment

Kaneko, Marina	Tokyo Denki Univ.
Kitano, Taishi	Tokyo Denki Univ.
Wakatabe, Takahiro	Tokyo Denki Univ.
Kamamichi, Norihiro	Tokyo Denki Univ.
Ishikawa, Jun	Tokyo Denki Univ.

11:30-11:45 WedCT2.3

Synergy–based Optimal Design of Hand Pose Sensing, pp. 3929-3935.

Bianchi, Matteo	Univ. of Pisa
Salaris, Paolo	Univ. of Pisa
Bicchi, Antonio	Istituto Italiano di Tecnologia

11:45-12:00 WedCT2.4

Demonstration-Based Control of Supernumerary Robotic Limbs, pp. 3936-3942.

Llorens, Baldin	MIT
Parietti, Federico	MIT
Asada, Harry	MIT

12:00-12:15 WedCT2.5

Pinching Force Accuracy Affected by Thumb Sensation in Human Force Augmentation, pp. 3943-3948.

Hasegawa, Yasuhisa	Univ. of Tsukuba
Ariyama, Tetsuri	Univ. of Tsukuba
Kamibayashi, Kiyotaka	Graduate School of Systems andInformationEngineering,Univ.

12:15-12:30 WedCT2.6

Implementation of a Haptic Musical Instrument Using Multi-Signal Fusion for Force Sensing without Additional Force Sensors, pp. 3949-3954.

Havryliv, Mark	Univ. of Wollongong
Naghdy, Fazel	Univ. of Wollongong
Schiemer, Greg	Univ. of Tech. Sydney

WedCT3 Pegaso B

Sensors, Sensor Networks and Networked Robots (Regular Session)

11:00-11:15 WedCT3.1

Semi-Autonomous Visual Inspection of Vessels Assisted by an Unmanned Micro Aerial Vehicle, pp. 3955-3961.

Bonnin-Pascual, Francisco	Univ. of Balearic Islands
Garcia-Fidalgo, Emilio	Univ. of Balearic Islands
Ortiz, Alberto	Univ. of the Balearic Islands

11:15-11:30 WedCT3.2

Web Mining Driven Object Locality Knowledge Acquisition for Efficient Robot Behavior, pp. 3962-3969.

Zhou, Kai	Automation and Control Inst. Vienna Univ.
Zillich, Michael	Vienna Univ. of Tech.
Zender, Hendrik	German Res. Center for Artificial Intelligence (DFKI)
Vincze, Markus	Vienna Univ. of Tech.

11:30-11:45 WedCT3.3

Prioritized Multi-Task Motion Control of Redundant Robots under Hard Joint Constraints, pp. 3970-3977. Attachment

Flacco, Fabrizio	Univ. di Roma "La Sapienza"
De Luca, Alessandro	Univ. di Roma "La Sapienza"
Khatib, Oussama	Stanford Univ.

11:45-12:00 WedCT3.4

Optical-Inertial Tracking with Active Markers and Changing Visibility, pp. 3978-3984.

Steidle, Florian	German Aerospace Center
Tobergte, Andreas	German Aerospace Center (DLR)
Hirzinger, Gerd	German Aerospace Center (DLR)

12:00-12:15 WedCT3.5

Entropy-Aware Cluster-Based Object Tracking for Wireless Camera Sensor Networks, pp. 3985-3992.

De San Bernabé, Alberto	Univ. de Sevilla
Martínez-de Dios, J.R.	Univ. of Seville
Ollero, Anibal	Univ. of Seville

12:15-12:30 WedCT3.6

Intelligent Sensor-Scheduling for Multi-Kinect-Tracking, pp. 3993-3999.

Faion, Florian	Karlsruhe Inst. of Tech.
Friedberger, Simon	Karlsruhe Inst. of Tech.
Zea, Antonio	Karlsruhe Inst. of Tech.
Hanebeck, Uwe D.	Karlsruhe Inst. of Tech. (KIT)

WedCT4 Fenix 3

Humanoid Robots IV (Regular Session)

Chair: Roh, Kyungshik	Samsung Electronics Co., Ltd
Co-Chair: Ott, Christian	German Aerospace Center (DLR)

11:00-11:15 WedCT4.1

Development of the Lower Limbs of a Humanoid Robot, pp. 4000-4005. Attachment

Kim, Joohyung	Samsung Advanced Inst. of Tech.
Lee, Younbaek	samsung electronics
Kwon, Sunggu	Samsung Electronics Co., Ltd.
Seo, Keehong	Samsung Advanced Inst. of Tech.
Kwak, HoSeong	Samsung Advanced Inst. of Tech.
Lee, Heekuk	SAIT, Samsung Electronics Co., Ltd
Roh, Kyungshik	Samsung Electronics Co., Ltd

11:15-11:30 WedCT4.2

On-Board Odometry Estimation for 3D Vision-Based SLAM of Humanoid Robot, pp. 4006-4012. Attachment

Ahn, SungHwan	Samsung Electronics
Yoon, Sukjune	Samsung Elec.
Hyung, SeungYong	SAMSUNG ELECTRONICS
Kwak, Nosan	National Inst. of Advanced Industrial Science and Tech.
Roh, Kyungshik	Samsung Electronics Co., Ltd

11:30-11:45 WedCT4.3

Optimal Gait Primitives for Dynamic Bipedal Locomotion, pp. 4013-4018. Attachment

Lim, Bokman	Samsung Advanced Inst. of Tech.
Lee, Jusuk	Samsung Advanced Inst. of Tech.
Kim, Joohyung	Samsung Advanced Inst. of Tech.
Lee, Minhyung	Samsung Advanced Inst. of Tech.
Kwak, HoSeong	Samsung Advanced Inst. of Tech.
Kwon, Sunggu	Samsung Electronics Co., Ltd.
Lee, Heekuk	SAIT, Samsung Electronics Co., Ltd
Kwon, Woong	Samsung Electronics Co., Ltd
Roh, Kyungshik	Samsung Electronics Co., Ltd

11:45-12:00 WedCT4.4

Towards Natural Bipedal Walking: Virtual Gravity Compensation and Capture Point Control, pp. 4019-4026. Attachment

Seo, Keehong	Samsung Advanced Inst. of Tech.
Kim, Joohyung	Samsung Advanced Inst. of Tech.
Roh, Kyungshik	Samsung Electronics Co., Ltd

12:00-12:15 WedCT4.5

Robust Descriptors for 3D Point Clouds Using Geometric and Photometric Local Feature, pp. 4027-4033. Attachment

Hwang, Hyoseok	Samsung Advanced Inst. of Tech.
Hyung, SeungYong	SAMSUNG ELECTRONICS
Yoon, Sukjune	Samsung Elec.
Roh, Kyungshik	Samsung Electronics Co., Ltd

12:15-12:30 WedCT4.6

Active Stabilization of a Humanoid Robot for Impact Motions with Unknown Reaction Forces, pp. 4034-4039. Attachment

Yi, Seung-Joon	Univ. of Pennsylvania
Zhang, Byoung-Tak	Seoul National Univ.
Hong, Dennis	Virginia Tech.

Lee, Daniel D. Univ. of Pennsylvania

WedCT5 Gemini 2
Force Control (Regular Session)

11:00-11:15 WedCT5.1

``*Open Sesame!'' Adaptive Force/Velocity Control for Opening Unknown Doors*, pp. 4040-4047. Attachment
Karayiannidis, Yiannis KTH Royal Insitute of Tech.
Smith, Claes Christian KTH
Vina, Francisco KTH
Ogren, Petter Swedish Defence Res. Agency
Kragic, Danica KTH

11:15-11:30 WedCT5.2

Control of Contact Forces: The Role of Tactile Feedback for Contact Localization, pp. 4048-4053. Attachment
Del Prete, Andrea Istituto Italiano di Tecnologia
Nori, Francesco ISTITUTO ITALIANO DI TECNOLOGIA
Metta, Giorgio Istituto Italiano di Tecnologia (IIT)
Natale, Lorenzo Istituto Italiano di Tecnologia

11:30-11:45 WedCT5.3

A New Hybrid Actuator Approach for Force-Feedback Devices, pp. 4054-4059.
Rossa, Carlos CEA
Lozada, José CEA LIST
Micaelli, Alain Commissariat à l'Energie Atomique

11:45-12:00 WedCT5.4

A Locally Adaptive Online Grasp Control Strategy Using Array Sensor Force Feedback, pp. 4060-4065.
Stachowsky, Michael Univ. of Guelph
Moussa, Medhat Guelph
Abdullah, Hussein Univ. of Guelph

12:00-12:15 WedCT5.5

On the Role of Load Motion Compensation in High-Performance Force Control, pp. 4066-4071.
Boaventura, Thiago Fondazione Istituto Italiano di Tecnologia
Focchi, Michele Italian Inst. of Tech.
Frigerio, Marco Fondazione Istituto Italiano di Tecnologia
Buchli, Jonas Italian Inst. of Tech.
Semini, Claudio Italian Inst. of Tech.
Medrano-Cerda, Gustavo Italian Inst. of Tech.
Caldwell, Darwin G. Fondazione Itituto Italiano di Tecnologia

12:15-12:30 WedCT5.6

A Set-Point-Generator for Indirect-Force-Controlled Manipulators Operating Unknown Constrained Mechanisms, pp. 4072-4077. Attachment
Lutscher, Ewald Tech. Univ. München
Cheng, Gordon Tech. Univ. Munich

WedCT7 Vega
Robot Interaction with the Environment and Humans (Regular Session)

Chair: Fu, Li-Chen National Taiwan Univ.
Co-Chair: Peters, Jan Tech. Univ. Darmstadt

11:00-11:15 WedCT7.1

A Brain-Robot Interface for Studying Motor Learning after Stroke, pp. 4078-4083.
Meyer, Timm Max Planck Inst. for Intelligent Systems
Peters, Jan Tech. Univ. Darmstadt
Brötz, Doris Inst. of Medical Psychology and Behavioral Neurobiology, MEG
Zander, Thorsten Max Planck Inst. for Intelligent Systems
Schölkopf, Bernhard Max Planck Inst. for Intelligent Systems
Soekadar, Surjo Inst. of Medical Psychology and Behavioral Neurobiology, MEG
Grosse-Wentrup, Moritz Max-Planck Inst. for Biological Cybernetics

11:15-11:30 WedCT7.2

A Brain-Machine Interface to Navigate Mobile Robots Along Human-Like Paths Amidst Obstacles, pp. 4084-4089.

Attachment

Akce, Abdullah	Univ. of Illinois at Urbana-Champaign
Norton, James John Stanley	Univ. of Illinois
Bretl, Timothy	Univ. of Illinois at Urbana-Champaign

11:30-11:45 WedCT7.3

Haptic Classification and Recognition of Objects Using a Tactile Sensing Forearm, pp. 4090-4097.

Bhattacharjee, Tapomayukh	Georgia-Tech.
Rehg, James	Georgia Inst. of Tech.
Kemp, Charlie	Georgia Inst. of Tech.

11:45-12:00 WedCT7.4

Proactive Premature Intention Estimation for Intuitive Human-Robot Collaboration, pp. 4098-4103.

Awais, Muhammad	Bayreuth
Henrich, Dominik	Univ. of Bayreuth

12:00-12:15 WedCT7.5

Using a Minimal Action Grammar for Activity Understanding in the Real World, pp. 4104-4111.

Summers-stay, Douglas	Univ. of Maryland
Teo, Ching Lik	Univ. of Maryland
Yang, Yezhou	Univ. of Maryland
Fermuller, Cornelia	Univ. of Maryland
Aloimonos, Yiannis	Univ. of Maryland

12:15-12:30 WedCT7.6

On-Line Human Action Recognition by Combining Joint Tracking and Key Pose Recognition, pp. 4112-4117.

Weng, E-Jui	National Taiwan Univ.
Fu, Li-Chen	National Taiwan Univ.

WedCT9 Fenix 1

Sensing in Medical Robotics (Regular Session)

Chair: Cavusoglu, M. Cenk — Case Western Res. Univ.

11:00-11:15 WedCT9.1

Scanning the Surface of Soft Tissues with a Micrometer Precision Thanks to Endomicroscopy Based Visual Servoing, pp. 4118-4124.

Rosa, Benoît	Univ. Pierre et Marie Curie - Paris 6
Erden, Mustafa Suphi	Univ. Pierre et Marie CURIE
Vercauteren, Tom	Mauna Kea Tech.
Szewczyk, Jérôme	Univ. Pierre et Marie Curie-Paris 6
Morel, Guillaume	Univ. Pierre et Marie Curie - Paris 6

11:15-11:30 WedCT9.2

Preliminary Evaluation of a Micro-Force Sensing Handheld Robot for Vitreoretinal Surgery, pp. 4125-4130.

Gonenc, Berk	Johns Hopkins Univ.
Balicki, Marcin	Johns Hopkins Univ.
Handa, James	Johns Hopkins Medical Inst.
Gehlbach, Peter	Johns Hopkins Medical Inst.
Riviere, Cameron	Carnegie Mellon Univ.
Taylor, Russell H.	The Johns Hopkins Univ.
Iordachita, Iulian	Johns Hopkins Univ.

11:30-11:45 WedCT9.3

Internal Bleeding Detection Algorithm Based on Determination of Organ Boundary by Low-Brightness Set Analysis, pp. 4131-4136.

Ito, Keiichiro	Waseda Univ.
Sugano, Shigeki	Waseda Univ.
Iwata, Hiroyasu	Waseda Univ.

11:45-12:00 WedCT9.4

A Cyber-Physical System for Strain Measurements in the Cerebral Aneurysm Models, pp. 4137-4142.

Shi, Chaoyang	Nagoya Univ.
Kojima, Masahiro	Nagoya Univ.
Tercero Villagran, Carlos Rafael	Nagoya Univ.
Ooe, Katsutoshi	Nagoya Univ.

Ikeda, Seiichi	Nagoya Univ.
Fukuda, Toshio	Nagoya Univ.
Arai, Fumihito	Nagoya Univ.
Negoro, Makoto	Fujita Health Univ.
Irie, Keiko	Fujita Health Univ.
Kwon, Guiryong	Terumo Clinical Supply Ltd.

12:00-12:15 WedCT9.5

Heart Motion Measurement with Three Dimensional Sonomicrometry and Acceleration Sensing, pp. 4143-4149.

Horiuchi, Tetsuya	The Univ. of Tokyo
Tuna, Eser Erdem	Case Western Res. Univ.
Masamune, Ken	Univ. of Tokyo
Cavusoglu, M. Cenk	Case Western Res. Univ.

12:15-12:30 WedCT9.6

Surface Texture and Pseudo Tactile Sensation Displayed by a MEMS-Based Tactile Display, pp. 4150-4155.

Watanabe, Junpei	Keio Univ.
Ishikawa, Hiroaki	Keio Univ.
Arouette, Xavier	Keio Univ.
Miki, Norihisa	Keio Univ.

WedCT10 Lince

Visual Learning II (Regular Session)

Chair: Olson, Edwin — Univ. of Michigan

11:00-11:15 WedCT10.1

Clustering-Based Discriminative Locality Alignment for Face Gender Recognition, pp. 4156-4161.

Chen, Duo	Chongqing Univ.
Cheng, Jun	Shenzhen Inst. of Advanced Tech. Scie
Tao, Dacheng	Univ. of Tech. Sydney

11:15-11:30 WedCT10.2

Incorporating Geometric Information into Gaussian Process Terrain Models from Monocular Images, pp. 4162-4168.

Abuhashim, Tariq	Univ. of Sydney
Sukkarieh, Salah	Univ. of Sydney

11:30-11:45 WedCT10.3

A System of Automated Training Sample Generation for Visual-Based Car Detection, pp. 4169-4176. Attachment

Wang, Chao	Peking Univ.
Zhao, Huijing	Peking Univ.
Davoine, Franck	CNRS
Zha, Hongbin	Peking Univ.

11:45-12:00 WedCT10.4

Learning and Recognition of Objects Inspired by Early Cognition, pp. 4177-4184.

Rudinac, Maja	Delft Univ. of Tech.
Kootstra, Gert	Royal Inst. of Tech. (KTH), Stockholm
Kragic, Danica	KTH
Jonker, Pieter	Delft Univ. of Tech.

12:00-12:15 WedCT10.5

On-Line Semantic Perception Using Uncertainty, pp. 4185-4191.

de Nijs, Roderick	Tech. Univ. of Munich
Ramos, Sebastian	TUM
Roig, Gemma	ETH
Boix, Xavier	ETH
Van Gool, Luc	ETH Zurich
Kühnlenz, Kolja	Tech. Univ. München

12:15-12:30 WedCT10.6

A High-Accuracy Visual Marker Based on a Microlens Array, pp. 4192-4197. Attachment

Tanaka, Hideyuki	National Inst. of AIST
Sumi, Yasushi	National Inst. of Advanced Industrial Science andTechnology(
Matsumoto, Yoshio	National Inst. ofAdvancedIndustrialScienceandTechnology (AIS

WedCVT6	Gemini 3
Slam Ii (Regular Session)	
Chair: Hutchinson, Seth	Univ. of Illinois
11:00-11:15	WedCVT6.1
CurveSLAM: An Approach for Vision-Based Navigation without Point Features, pp. 4198-4204.	
Rao, Dushyant	Univ. of Illinois at Urbana-Champaign
Chung, Soon-Jo	Univ. of Illinois at Urbana-Champaign
Hutchinson, Seth	Univ. of Illinois
11:15-11:30	WedCVT6.2
Seamless Aiding of Inertial-SLAM Using Visual Directional Constraints from a Monocular Vision, pp. 4205-4210.	
Qayyum, Usman	ANU
11:30-11:45	WedCVT6.3
Realizing, Reversing, Recovering : Incremental Robust Loop Closing Over Time Using the Irrr Algorithm, pp. 4211-4217.	
Latif, Yasir	Univ. de Zaragoza
Cadena Lerma, Cesar Dario	Univ. of Zaragoza
Neira, José	Univ. de Zaragoza
11:45-12:00	WedCVT6.4
Location and Orientation Estimation with an Electrosense Robot, pp. 4218-4223.	
Silverman, Yonatan	Northwestern Univ.
Snyder, James	Northwestern Univ.
Bai, Yang	Northwestern Univ.
MacIver, Malcolm A.	Northwestern Univ.
12:00-12:15	WedCVT6.5
Towards Persistent Indoor Appearance-Based Localization, Mapping and Navigation Using CAT-Graph, pp. 4224-4230.	
Maddern, William	Queensland Univ. of Tech.
Milford, Michael J	Queensland Univ. of Tech.
Wyeth, Gordon	Queensland Univ. of Tech.
12:15-12:20	WedCVT6.6
Pedestrian Detection in Industrial Environments: Seeing Around Corners, pp. 4231-4232. Attachment	
Borges, Paulo Vinicius Koerich	CSIRO
Tews, Ashley Desmond	CSIRO
Haddon, David	CSIRO
12:20-12:25	WedCVT6.7
ISRobotCar: The Autonomous Electric Vehicle Project, pp. 4233-4234. Attachment	
Silva, Marco	Inst. of Systems and Robotics, Univ. of Coimbra
Moita, Fernando	Inst. de Sistemas e Robotica
Nunes, Urbano	Univ. de Coimbra
Garrote, Luís Carlos	Inst. of Systems and Robotics, Univ. of Coimbra
Faria, Hugo	ISR - Univ. OF COIMBRA
Ruivo Paulo, João	ISR - Univ. OF COIMBRA
12:25-12:30	WedCVT6.8
Autonomy for Mobility on Demand, pp. 4235-4236. Attachment	
Chong, Zhuang Jie	NUS
Qin, Baoxing	NUS
Bandyopadhyay, Tirthankar	Singapore MIT Alliance for R & T
Wongpiromsarn, Tichakorn	Singapore-MIT Alliance for Res. & Tech.
Rebsamen, Brice	Singapore MIT Alliance for Res. and Tech. (SMART)
Dai, Peilong	SMART
Kim, Seongwoo	SMART
Ang Jr, Marcelo H	National Univ. of Singapore
Hsu, David	National Univ. of Singapore
Rus, Daniela	MIT
Frazzoli, Emilio	Massachusetts Inst. of Tech.

WedCVT8	Gemini 1
Soft Robots (Regular Session)	
Chair: Kang, Sungchul	Korea Inst. of Science & Tech.

11:00-11:15 WedCVT8.1

Innovative Soft Robots Based on Electro-Rheological Fluids, pp. 4237-4242.

Sadeghi, Ali	Istituto Italiano di Tecnologia
Beccai, Lucia	Istituto Italiano di Tecnologia
Mazzolai, Barbara	Istituto Italiano di Tecnologia

11:15-11:30 WedCVT8.2

Detailed Dynamics Modeling of BioBiped's Monoarticular and Biarticular Tendon-Driven Actuation System, pp. 4243-4250. Attachment

Radkhah, Katayon	Tech. Univ. Darmstadt
Lens, Thomas	Tech. Univ. Darmstadt
von Stryk, Oskar	Tech. Univ. Darmstadt

11:30-11:45 WedCVT8.3

Design of a Tubular Snake-Like Manipulator with Stiffening Capability by Layer Jamming, pp. 4251-4256. Attachment

Kim, Yong Jae	Samsung Electronics
Cheng, Shanbao	Rochester Inst. of Tech.
Kim, Sangbae	Massachusetts Inst. of Tech.
Iagnemma, Karl	MIT

11:45-12:00 WedCVT8.4

Adaptive Bipedal Walking through Sensory-Motor Coordination Yielded from Soft Deformable Feet, pp. 4257-4263. Attachment

Owaki, Dai	Tohoku Univ.
Fukuda, Hiroki	Tohoku Univ.
Ishiguro, Akio	Tohoku Univ.

12:00-12:15 WedCVT8.5

Design of Soft Robotic Actuators Using Fluid-Filled Fiber-Reinforced Elastomeric Enclosures in Parallel Combinations, pp. 4264-4269.

Bishop-Moser, Joshua	Univ. of Michigan, Ann Arbor
Krishnan, Girish	Univ. of Michigan
Kim, Charles	Bucknell Univ.
Kota, Sridhar	Univ. of Michigan

12:15-12:20 WedCVT8.6

Intrinsically Elastic Robots: The Key to Human Like Performance, pp. 4270-4271. Attachment

Haddadin, Sami	German Aerospace Center (DLR)
Huber, Felix	German Aerospace Center
Krieger, Kai	German Aerospace Center
Weitschat, Roman	Robotics and Mechatronics Center (DLR)
Albu-Schäffer, Alin	DLR - German Aerospace Center
Wolf, Sebastian	DLR - German Aerospace Center
Friedl, Werner	German AerospaceCenter (DLR)
Grebenstein, Markus	German Aerospace Center (DLR) Inst. of Robotics and Mechatro
Petit, Florian	German Aerospace Center (DLR)
Reinecke, Jens	DLR
Lampariello, Roberto	German Aerospace Center (DLR)

12:20-12:25 WedCVT8.7

Can Ants Inspire Robots? Self-Organized Decision Making in Robotic Swarms, pp. 4272-4273. Attachment

Brutschy, Arne	Univ. Libre de Bruxelles
Scheidler, Alexander	Fraunhofer Inst. for Wind Energy and Energy System Tech.
Ferrante, Eliseo	Univ. Libre de Bruxelles
Dorigo, Marco	Univ. Libre de Bruxelles
Birattari, Mauro	Univ. Libre de Bruxelles

12:25-12:30 WedCVT8.8

A Single Motor Actuated Miniature Steerable Jumping Robot, pp. 4274-4275. Attachment

Zhao, Jianguo	Michigan State Univ.
Xi, Ning	Michigan State Univ.
Cintron, Fernando J.	Michigan State Univ.
Mutka, Matt	Michigan State Uinversity
Xiao, Li	Michigan State Univ.

WedDT1	Pegaso A
Omnidirectional Vision and Aerial Robotics I (Regular Session)	
Chair: Fraundorfer, Friedrich	ETH Zurich
Co-Chair: Lippiello, Vincenzo	Univ. di Napoli Federico II
14:00-14:15	WedDT1.1
Full Scaled 3D Visual Odometry from a Single Wearable Omnidirectional Camera, pp. 4276-4281.	
Gutiérrez-Gómez, Daniel	Univ. de Zaragoza
Puig, Luis	Univ. de Zaragoza
Guerrero, Josechu	Univ. de Zaragoza
14:15-14:30	WedDT1.2
3-Line RANSAC for Orthogonal Vanishing Point Detection, pp. 4282-4287.	
Bazin, Jean-Charles	CVG/CGL, ETHZ
Pollefeys, Marc	ETH Zurich
14:30-14:45	WedDT1.3
Topological Segmentation of Indoors/outdoors Sequences of Spherical Views, pp. 4288-4295. Attachment	
Chapoulie, Alexandre	INRIA
Rives, Patrick	INRIA
Filliat, David	ENSTA ParisTech
14:45-15:00	WedDT1.4
Wall Inspection Control of a VTOL Unmanned Aerial Vehicle Based on a Stereo Optical Flow, pp. 4296-4302. Attachment	
Lippiello, Vincenzo	Univ. di Napoli Federico II
Siciliano, Bruno	Univ. Napoli Federico II

WedDT2	Fenix 2
Physical Human-Robot Interaction III (Regular Session)	
Chair: Melhuish, Chris	BRL
Co-Chair: De Luca, Alessandro	Univ. di Roma
14:00-14:15	WedDT2.1
Kinematic Synthesis, Optimization and Analysis of a Non-Anthropomorphic 2-DOFs Wearable Orthosis for Gait Assistance, pp. 4303-4308.	
Sergi, Fabrizio	Rice Univ.
Accoto, Dino	Univ. Campus Bio-Medico
Tagliamonte, Nevio Luigi	Univ. Campus Bio-Medico di Roma
Carpino, Giorgio	Univ. Campus Bio-Medico
Galzerano, Simone	Campus Bio-Medico Univ.
Guglielmelli, Eugenio	Univ. Campus Bio-Medico
14:15-14:30	WedDT2.2
Investigation of Safety in Human-Robot-Interaction for a Series Elastic, Tendon-Driven Robot Arm, pp. 4309-4314. Attachment	
Lens, Thomas	Tech. Univ. Darmstadt
von Stryk, Oskar	Tech. Univ. Darmstadt
14:30-14:45	WedDT2.3
Counteracting Modeling Errors for Sensitive Observer-Based Manipulator Collision Detection, pp. 4315-4320.	
Sotoudehnejad, Vahid	The Univ. of Western Ontario
Takhmar, Amir	Univ. of Western Ontario
Kermani, Mehrdad R.	Univ. of Western Ontario
Polushin, Ilia G.	Western Univ.
14:45-15:00	WedDT2.4
When Shared Plans Go Wrong: From Atomic to Composite Actions and Back, pp. 4321-4326. Attachment	
Lenz, Alexander	Bristol Robotic Lab.
Lallée, Stéphane	Stem Cell and Brain Res. Inst. INSERM U846
Skachek, Sergey	Bristol Robotic Lab.
Pipe, Tony	Bristol Robotics Lab. Univ. of the WestofEngland
Melhuish, Chris	BRL
Dominey, Peter Ford	INSERM Stem Cell & Brain Res. Inst.

WedDT3	Pegaso B

Outdoor, Search and Rescue Robotics I (Regular Session)

Chair: Murphy, Robin	Texas A&M
Co-Chair: Hirose, Shigeo	Tokyo Inst. of Tech.

14:00-14:15 WedDT3.1

LineScout Power Line Robot: Characterization of a UTM-30LX LIDAR System for Obstacle Detection, pp. 4327-4334.

Pouliot, Nicolas	IREQ- Hydro-Québec Res. Inst.
Richard, Pierre-Luc	Inst. de recherche d'Hydro-Québec
Montambault, Serge	Hydro-Québec Res. Inst.

14:15-14:30 WedDT3.2

Mobile Robotic Fabrication on Construction Sites: Dimrob, pp. 4335-4341.

Helm, Volker	ETH Zurich, Architecture and Digital Fabrication
Ercan, Selen	ETH Zurich, Architecture and Digital Fabrication
Gramazio, Fabio	ETH Zurich
Kohler, Matthias Daniel	ETH Zurich

14:30-14:45 WedDT3.3

Vehicle Localization in Mountainous Gravelled Paths, pp. 4342-4347.

Morales Saiki, Luis Yoichi	Advanced Telecommunications Res. Inst.
Tsubouchi, Takashi	Sys. and Info. Eng., U of Tsukuba
Sarata, Shigeru	National Inst. of AIST

14:45-15:00 WedDT3.4

Casting Device for Search and Rescue Aiming Higher and Faster Access in Disaster Site, pp. 4348-4353. Attachment

Tsukagoshi, Hideyuki	Tokyo Inst. of Tech.

WedDT4 Fenix 3

Humanoid Robots V (Regular Session)

14:00-14:15 WedDT4.1

Humanoid Push Recovery with Robust Convex Synthesis, pp. 4354-4359.

Wang, Jiuguang	Carnegie Mellon Univ.

14:15-14:30 WedDT4.2

Appearance-Based Traversability Classification in Monocular Images Using Iterative Ground Plane Estimation, pp. 4360-4366.

Maier, Daniel	Univ. of Freiburg
Bennewitz, Maren	Univ. of Freiburg

14:30-14:45 WedDT4.3

Lower Thigh Design of Detailed Musculoskeletal Humanoid "Kenshiro", pp. 4367-4372.

Asano, Yuki	Univ. of Tokyo
Mizoguchi, Hironori	The Univ. of Tokyo
Kozuki, Toyotaka	Univ. of Tokyo
Motegi, Yotaro	The Univ. of Tokyo
Osada, Masahiko	Tokyo Univ. Inaba Lab. Japan
Urata, Junichi	The Univ. of Tokyo
Nakanishi, Yuto	The Univ. of Tokyo
Okada, Kei	The Univ. of Tokyo
Inaba, Masayuki	The Univ. of Tokyo

14:45-15:00 WedDT4.4

Optimization-Based Generation and Experimental Validation of Optimal Walking Trajectories for Biped Robots, pp. 4373-4379.

Werner, Alexander	Deutsches Inst. fuer Luft- und Raumfahrt (DLR)
Lampariello, Roberto	German Aerospace Center (DLR)
Ott, Christian	German Aerospace Center (DLR)

WedDT5 Gemini 2

Human-Machine Interfaces (Regular Session)

Chair: Bonsignorio, Fabio Paolo	Heron Robots srl Univ. Carlos III de Madrid

14:00-14:15 WedDT5.1

Novel Equilibrium-Point Control of Agonist-Antagonist System with Pneumatic Artificial Muscles: II. Application to EMG-Based Human-Machine Interface for an Elbow-Joint System, pp. 4380-4385.

Ariga, Yohei	Osaka Univ.
Maeda, Daisuke	Osaka Univ.
Pham, Hang	Graduate School of Engineering Science, Osaka Univ.
Uemura, Mitsunori	Osaka Univ.
Hirai, Hiroaki	Graduate School of Engineering Science, Osaka Univ.
Miyazaki, Fumio	Graduate School of Engineering Science, Osaka Univ.

14:15-14:30 WedDT5.2

Benchmarking Shared Control for Assistive Manipulators: From Controllability to the Speed-Accuracy Trade-Off, pp. 4386-4391.

Stoelen, Martin Fodstad	Univ. Carlos III de Madrid
Fernández de Tejada, Virginia	Univ. Carlos III de Madrid
Jardon Huete, Alberto	Univ. CARLOS III DE MADRID
Bonsignorio, Fabio Paolo	Heron Robots srl Univ. Carlos III de Madrid
Balaguer, Carlos	Univ. Carlos III de Madrid

14:30-14:45 WedDT5.3

I'll Keep You in Sight: Finding a Good Position to Observe a Person, pp. 4392-4398.

Kessler, Jens	Ilmenau Univ. of Tech. Uni
Iser, Daniel	Ilmenau Univ. of Tech. 98684 Ilmenau,GermanyIlmenau U
Gross, Horst-Michael	Ilmenau Univ. of Tech.

14:45-15:00 WedDT5.4

Embedding Imperceptible Codes into Video Projection and Applications in Robotics, pp. 4399-4404.

Dai, Jingwen	The Chinese Univ. of Hong Kong
Chung, Ronald	The Chinese Univ. of Hong Kong

WedDT6 Gemini 3

Mapping III (Regular Session)

14:00-14:15 WedDT6.1

Sensor Fusion for Flexible Human-Portable Building-Scale Mapping, pp. 4405-4412. Attachment

Fallon, Maurice	MIT
Johannsson, Hordur	MIT
Brookshire, Jonathan	MIT
Teller, Seth	MIT
Leonard, John	MIT

14:15-14:30 WedDT6.2

Fast Voxel Maps with Counting Bloom Filters, pp. 4413-4418.

Ryde, Julian	Univ. at Buffalo
Corso, Jason	SUNY Buffalo

14:30-14:45 WedDT6.3

Efficient Map Merging Using a Probabilistic Generalized Voronoi Diagram, pp. 4419-4424.

Saeedi Gharahbolagh, Sajad	Univ. of New Brunswick
Paull, Liam	Univ. of New Brunswick
Trentini, Michael	Defence Res. and Development Canada
Seto, Mae	Defence R&D Canada
Li, Howard	Univ. of New Brunswick

14:45-15:00 WedDT6.4

A Pipeline for Structured Light Bathymetric Mapping, pp. 4425-4432.

Inglis, Gabrielle	Univ. of Rhode Island
Smart, Clara	Univ. of Rhode Island
Vaughn, Ian	Univ. of Rhode Island
Roman, Chris	Univ. of Rhode Island

WedDT7 Vega

Motion and Path Planning VI (Regular Session)

Chair: Oh, Songhwai	Seoul National Univ.
Co-Chair: Torres, Luis G.	Univ. of North Carolina at Chapel Hill

14:00-14:15 WedDT7.1

Sampling-Based Nonholonomic Motion Planning in Belief Space Via Dynamic Feedback Linearization-Based FIRM, pp.

4433-4440.

Agha-mohammadi, Ali-akbar	Texas A&M Univ.
Chakravorty, Suman	Texas A&M Univ.
Amato, Nancy	Texas A&M Univ.

14:15-14:30 WedDT7.2

Local Randomization in Neighbor Selection Improves PRM Roadmap Quality, pp. 4441-4448.

McMahon, Troy	Texas A&M
Jacobs, Sam Ade	Texas A&M Univ.
Boyd, Bryan	Texas A&M Univ.
Tapia, Lydia	Univ. of New Mexico
Amato, Nancy	Texas A&M Univ.

14:30-14:45 WedDT7.3

Task-Oriented Design of Concentric Tube Robots Using Mechanics-Based Models, pp. 4449-4455.

Torres, Luis G.	Univ. of North Carolina at Chapel Hill
Webster III, Robert James	Vanderbilt Univ.
Alterovitz, Ron	Univ. of North Carolina at Chapel Hill

14:45-15:00 WedDT7.4

Sampling-Based Sweep Planning to Exploit Local Planarity in the Inspection of Complex 3D Structures, pp. 4456-4463.

Englot, Brendan	MIT
Hover, Franz	MIT

WedDT8 Gemini 1

Space Robotics (Regular Session)

Chair: Fiorini, Paolo	Univ. of Verona
Co-Chair: Yoshida, Kazuya	Tohoku Univ.

14:00-14:15 WedDT8.1

Emulating Self-Reconfigurable Robots - Design of the SMORES System, pp. 4464-4469. Attachment

Davey, Jay	Univ. of New South Wales
Yim, Mark	Univ. of Pennsylvania
Kwok, Ngai Ming	Univ. of New South Wales

14:15-14:30 WedDT8.2

Slope Traversability Analysis of Reconfigurable Planetary Rovers, pp. 4470-4476.

Inotsume, Hiroaki	Tohoku Univ.
Sutoh, Masataku	Tohoku Univ.
Nagaoka, Kenji	Tohoku Univ.
Nagatani, Keiji	Tohoku Univ.
Yoshida, Kazuya	Tohoku Univ.

14:30-14:45 WedDT8.3

Impedance-Based Contact Control of a Free-Flying Space Robot with a Compliant Wrist for Non-Cooperative Satellite Capture, pp. 4477-4482.

Uyama, Naohiro	Tohoku Univ.
Nakanishi, Hiroki	Japan Aerospace Exploration Agency
Nagaoka, Kenji	Tohoku Univ.
Yoshida, Kazuya	Tohoku Univ.

14:45-15:00 WedDT8.4

Tracking Complex Targets for Space Rendezvous and Debris Removal Applications, pp. 4483-4488. Attachment

Petit, Antoine	IRISA/INRIA Rennes-Bretagne Atlantique
Marchand, Eric	Univ. de Rennes 1, IRISA, INRIA Rennes
Kanani, Keyvan	EADS Astrium

WedDT10 Lince

Tactile Exploration (Regular Session)

Chair: Hirai, Shinichi	Ritsumeikan Univ.

14:00-14:15 WedDT10.1

Online Spatio-Temporal Gaussian Process Experts with Application to Tactile Classification, pp. 4489-4496.

Soh, Harold	Imperial Coll. London
Su, Yanyu	Harbin Inst. of Tech.

Demiris, Yiannis	Imperial Coll. London

14:15-14:30	WedDT10.2

Experimental Investigation of Surface Identification Ability of a Low-Profile Fabric Tactile Sensor, pp. 4497-4504.

Ho, Van	Ritsumeikan Univ.
Hirai, Shinichi	Ritsumeikan Univ.
Makikawa, Masaaki	Coll. of Science and Engineering, Ritsumeikan Univ.
Araki, Takahiro	Res. and Development Div. Okamoto Corp.

14:30-14:45	WedDT10.3

3D Surface Reconstruction for Robotic Body Parts with Artificial Skins, pp. 4505-4510. Attachment

Mittendorfer, Philipp	Tech. Univ. München
Cheng, Gordon	Tech. Univ. Munich

14:45-15:00	WedDT10.4

A Novel Dynamic Slip Prediction and Compensation Approach Based on Haptic Surface Exploration, pp. 4511-4516.

Song, Xiaojing	King's Coll. London
Liu, Hongbin	King's Coll. London
Bimbo, Joao	King's Coll. London
Althoefer, Kaspar	Kings Coll. London
Seneviratne, Lakmal	Kings Coll. London

WedDVT9	Fenix 1
Range Sensing (Regular Session)	
Chair: Umeda, Kazunori	Chuo Univ.

14:00-14:15	WedDVT9.1

Construction of a Compact Range Image Sensor Using a Multi-Slit Laser Projector Suitable for a Robot Hand, pp. 4517-4523.

Iwasaki, Kazuya	Chuo Univ.
Terabayashi, Kenji	Chuo Univ.
Umeda, Kazunori	Chuo Univ.

14:15-14:30	WedDVT9.2

Fast Nearest Neighbor Search Using Approximate Cached K-D Tree, pp. 4524-4529.

Choi, Won-Seok	POhang Univ. of Science and Tech. (POSTECH)
Oh, Se-Young	POSTECH

14:30-14:45	WedDVT9.3

Fast Incremental 3D Plane Extraction from a Collection of 2D Line Segments for 3D Mapping, pp. 4530-4537.

An, Su-Yong	Pohang Univ. of science and Tech. (POSTECH)
Lee, Lae-Kyoung	Pohang Univ. of Science and Tech. (POSTECH)
Oh, Se-Young	POSTECH

14:45-14:50	WedDVT9.4

Thermal 3D Modeling of Indoor Environments for Saving Energy, pp. 4538-4539. Attachment

Borrmann, Dorit	Jacobs Univ. Bremen
Afzal, Hassan	Jacobs Univ. Bremen gGmbH
Elseberg, Jan	Jacobs Univ. Bremen
Nuechter, Andreas	Jacobs Univ. Bremen gGmbH

14:50-14:55	WedDVT9.5

An Autonomous 9-DOF Mobile-Manipulator System for in Situ 3D Object Modeling, pp. 4540-4541. Attachment

Torabi, Liila	Simon Fraser Univ.
Gupta, Kamal	Simon Fraser Univ.

14:55-15:00	WedDVT9.6

Collision Avoidance of Industrial Robot Arms Using an Invisible Sensitive Skin, pp. 4542-4543. Attachment

Lam, Tin Lun	The Chinese Univ. of Hong Kong
Yip, Hoi Wut	The Chinese Univ. of Hong Kong
Qian, Huihuan	CUHK
Xu, Yangsheng	Chinese Univ. of Hong Kong/ShenzhenInstituteofAdvancedTechn

WedET1	Pegaso A
Omnidirectional Vision and Aerial Robotics II (Regular Session)	

Chair: Fraundorfer, Friedrich	ETH Zurich
Co-Chair: Lippiello, Vincenzo	Univ. di Napoli Federico II

15:00-15:15	WedET1.1
Vision-Only Estimation of Wind Field Strength and Direction from an Aerial Platform, pp. 4544-4549. Attachment	
Moore, Richard James Donald	Univ. of Queensland
Thurrowgood, Saul	Univ. of Queensland
Srinivasan, Mandyam	The Univ. of Queensland

15:15-15:30	WedET1.2
Predicting Micro Air Vehicle Landing Behaviour from Visual Texture, pp. 4550-4556. Attachment	
Bartholomew, John	Univ. of Bristol
Calway, Andrew	Univ. of Bristol
Mayol, Walterio	Univ. of Bristol

15:30-15:45	WedET1.3
Vision-Based Autonomous Mapping and Exploration Using a Quadrotor MAV, pp. 4557-4564. Attachment	
Fraundorfer, Friedrich	ETH Zurich
Heng, Lionel	ETH Zurich
Honegger, Dominik	ETH Zürich
Lee, Gim Hee	ETH Zurich
Meier, Lorenz	ETH Zurich
Tanskanen, Petri	ETH Zurich
Pollefeys, Marc	ETH Zurich

15:45-16:00	WedET1.4
A Geometrical Approach for Vision Based Attitude and Altitude Estimation for UAVs in Dark Environments, pp. 4565-4570.	
Natraj, Ashutosh	Univ. de Picardie, Jules Verne, Amiens, France
Sturm, Peter	INRIA Rhone Alpes
Demonceaux, Cédric	Univ. de Bourgogne
Vasseur, Pascal	Univ. de Rouen

WedET2	Fenix 2
Emotion Detection and Expression (Regular Session)	
Chair: Lee, C. S. George	Purdue Univ.
Co-Chair: Luo, Ren	National Taiwan Univ.

15:00-15:15	WedET2.1
An NARX-Based Approach for Human Emotion Identification, pp. 4571-4576.	
Alazrai, Rami	Purdue Univ.
Lee, C. S. George	Purdue Univ.

15:15-15:30	WedET2.2
A Design Methodology for Expressing Emotion on Robot Faces, pp. 4577-4583.	
Shayganfar, Mohammad	Worcester Pol. Inst.
Rich, Charles	Worcester Pol. Inst.
Sidner, Candace	Worcester Pol. Inst.

15:30-15:45	WedET2.3
Development of Expressive Robotic Head for Bipedal Humanoid Robot, pp. 4584-4589. Attachment	
Kishi, Tatsuhiro	Waseda Univ.
Otani, Takuya	Waseda Univ.
Endo, Nobutsuna	Waseda Univ.
Kryczka, Przemyslaw	Waseda Univ.
Hashimoto, Kenji	Waseda Univ.
Nakata, Kei	Waseda Univ.
Takanishi, Atsuo	Waseda Univ.

15:45-16:00	WedET2.4
Confidence Fusion Based Emotion Recognition of Multiple Persons for Human-Robot Interaction, pp. 4590-4595.	
Luo, Ren	National Taiwan Univ.
Lin, Pei-Hsien	National Taiwan Univ.
Chang, Li Wen	National Taiwan Univ.

WedET3	Pegaso B
Outdoor, Search and Rescue Robotics II (Regular Session)	
Chair: Murphy, Robin	Texas A&M
Co-Chair: Hirose, Shigeo	Tokyo Inst. of Tech.
15:00-15:15	WedET3.1
Design and Calibration of Large Microphone Arrays for Robotic Applications, pp. 4596-4601. Attachment	
Perrodin, Florian	ETH Zurich
Nikolic, Janosch	ETH Zürich
Busset, Joël	ETH
Siegwart, Roland	ETH Zurich
15:15-15:30	WedET3.2
Development of Multi-Wheeled Snake-Like Rescue Robots with Active Elastic Trunk, pp. 4602-4607. Attachment	
Suzuki, Kousuke	Tokyo Inst. of Tech.
Nakano, Atsushi	Schlumberger Limited
Endo, Gen	Tokyo Inst. of Tech.
Hirose, Shigeo	Tokyo Inst. of Tech.
15:30-15:45	WedET3.3
Crank-Wheel: A Brand New Mobile Base for Field Robots, pp. 4608-4613. Attachment	
Nakano, Hisami	Tokyo Inst. of Tech.
Hirose, Shigeo	Tokyo Inst. of Tech.
15:45-16:00	WedET3.4
Initial Deployment of a Robotic Team - a Hierarchical Approach under Communication Constraints Verified on Low-Cost Platforms, pp. 4614-4619. Attachment	
Couceiro, Micael	Insitute of Systems and Robotics
Figueiredo, Carlos	Coimbra Inst. of Engineering
Portugal, David	Inst. of Systems and Robotics, Coimbra
Rocha, Rui Paulo	Inst. of Systems and Robotics - Univ. of Coimbra
Fonseca Ferreira, Nuno Miguel	Inst. of Engineering of Coimbra

WedET4	Fenix 3
Control of Bio-Inspired Robots II (Regular Session)	
Chair: Metta, Giorgio	Istituto Italiano di Tecnologia (IIT)
15:00-15:15	WedET4.1
Iterative Learning Control for a Musculoskeletal Arm: Utilizing Multiple Space Variables to Improve the Robustness, pp. 4620-4625.	
Tahara, Kenji	Kyushu Univ.
Kuboyama, Yuta	Kyushu Univ.
Kurazume, Ryo	Kyushu Univ.
15:15-15:30	WedET4.2
A Generic Software Architecture for Control of Parallel Kinematics Designed for Reduced Computing Hardware, pp. 4626-4631.	
Dietrich, Franz	Tech. Univ. Braunschweig
Grüner, Sven	TU Braunschweig
Raatz, Annika	Tech. Univ. Braunschweig
15:30-15:45	WedET4.3
Biologically Inspired Reactive Climbing Behavior of Hexapod Robots, pp. 4632-4637. Attachment	
Goldschmidt, Dennis	Univ. of Göttingen
Hesse, Frank	BCCN & BFNT Göttingen, Göttingen Univ. and
Wörgötter, Florentin	Univ. of Göttingen
Manoonpong, Poramate	Univ. of Goettingen
15:45-16:00	WedET4.4
Embodied Hyperacuity from Bayesian Perception: Shape and Position Discrimination with an Icub Fingertip Sensor, pp. 4638-4643.	
Lepora, Nathan	Univ. of Sheffield
Martinez-Hernandez, Uriel	Univ. of Sheffield
Barron-Gonzalez, Hector	Sheffield Univ. UK
Evans, Mathew	Univ. of Sheffield
Metta, Giorgio	Istituto Italiano di Tecnologia (IIT)

Prescott, Tony J — Univ. of Sheffield

WedET5 — Gemini 2
Personal Robots II (Regular Session)

Chair: Tapus, Adriana — ENSTA-ParisTech

15:00-15:15 — WedET5.1

Semantic Object Maps for Robotic Housework - Representation, Acquisition and Use, pp. 4644-4651. Attachment

Pangercic, Dejan — Robert Bosch LLC
Tenorth, Moritz — ATR
Pitzer, Benjamin — Robert Bosch LLC
Beetz, Michael — Univ. of Bremen

15:15-15:30 — WedET5.2

A Framework for the Design of Person Following Behaviors for Social Mobile Robots, pp. 4652-4659. Attachment

Granata, Consuelo — ISIR (Univ. Pierre et Marie Curie-Paris6-UPMC)andRobosoft
Bidaud, Philippe — Univ. Pierre et Marie Curie - Paris 6

15:30-15:45 — WedET5.3

Playmate Robots That Can Act According to Child's Mental State, pp. 4660-4667.

Abe, Kasumi — The Univ. of Electro-Communications
Akiko, Iwasaki — The Univ. of Electro-Communications
Nakamura, Tomoaki — Univ. of Electro-Communications
Nagai, Takayuki — Univ. of Electro-Communications
Yokoyama, Ayami — Tamagawa Univ.
Shimotomai, Takayuki — Tamagawa Univ.
Okada, Hiroyuki — Tamagawa Univ.
Omori, Takashi — Tamagawa Univ.

15:45-16:00 — WedET5.4

Planar Segmentation from Depth Images Using Gradient of Depth Feature, pp. 4668-4674.

Enjarini, Bashar — Bremen Univ.
Gräser, Axel — Univ. of Bremen

WedET6 — Gemini 3
Mapping IV (Regular Session)

15:00-15:15 — WedET6.1

What Can We Learn from 38, 000 Rooms? Reasoning about Unexplored Space in Indoor Environments, pp. 4675-4682.

Aydemir, Alper — Royal Inst. of Tech. (KTH)
Jensfelt, Patric — KTH - Royal Inst. of Tech.
Folkesson, John — KTH

15:15-15:30 — WedET6.2

Map Merging Using Hough Peak Matching, pp. 4683-4688.

Saeedi Gharahbolagh, Sajad — Univ. of New Brunswick
Paull, Liam — Univ. of New Brunswick
Trentini, Michael — Defence Res. and Development Canada
Seto, Mae — Defence R&D Canada
Li, Howard — Univ. of New Brunswick

15:30-15:45 — WedET6.3

Creating and Using Probabilistic Costmaps from Vehicle Experience, pp. 4689-4694.

Murphy, Elizabeth — Queensland Univ. of Tech.
Martin, Steven Colin — Queensland Univ. of Tech.
Corke, Peter — QUT

15:45-16:00 — WedET6.4

Dynamic Visual Understanding of the Local Environment for an Indoor Navigating Robot, pp. 4695-4701.

Tsai, Grace — Univ. of Michigan
Kuipers, Benjamin — Univ. of Michigan

WedET7 — Vega
Motion and Path Planning VII (Regular Session)

Chair: Oh, Songhwai — Seoul National Univ.
Co-Chair: Torres, Luis G. — Univ. of North Carolina at Chapel Hill

15:00-15:15 — WedET7.1

Motion Planning for Two 3D--Dubins Vehicles with Distance Constraint, pp. 4702-4707.
Marino, Hamal — Scuola Superiore Sant'Anna
Bonizzato, Marco — École Pol. Fédérale de Lausanne
Bartalucci, Riccardo — Scuola Superiore Sant'Anna
Salaris, Paolo — Univ. of Pisa
Pallottino, Lucia — Univ. di Pisa

15:15-15:30 — WedET7.2

Anytime Safe Interval Path Planning for Dynamic Environments, pp. 4708-4715. Attachment
Narayanan, Venkatraman — Carnegie Mellon Univ.
Phillips, Mike — Carnegie Mellon Univ.
Likhachev, Maxim — Carnegie Mellon Univ.

15:30-15:45 — WedET7.3

Motion Planning and Stochastic Control with Experimental Validation on a Planetary Rover, pp. 4716-4723.
McAllister, Rowan — Univ. of Sydney
Peynot, Thierry — The Univ. of Sydney
Fitch, Robert — Univ. of Sydney
Sukkarieh, Salah — Univ. of Sydney

15:45-16:00 — WedET7.4

A Cost-Aware Path Planning Algorithm for Mobile Robots, pp. 4724-4729.
Suh, Junghun — Seoul National Univ.
Oh, Songhwai — Seoul National Univ.

WedET8 — Gemini 1
Search and Rescue – Modeling (Regular Session)

Chair: Lima, Pedro — Inst. Superior Técnico - Inst. for Systems and Robotics

15:00-15:15 — WedET8.1

Multi-Sensor ATTenuation Estimation (MATTE): Signal-Strength Prediction for Teams of Robots, pp. 4730-4736.
Strom, Johannes H. — Univ. of Michigan
Olson, Edwin — Univ. of Michigan

15:15-15:30 — WedET8.2

Robust Acoustic Source Localization of Emergency Signals from Micro Air Vehicles, pp. 4737-4742. Attachment
Basiri, Meysam — École Pol. fédérale de Lausanne (EPFL)
Schill, Felix — Ec. Pol. Federale de Lausanne (EPFL)
Lima, Pedro — Inst. Superior Técnico - Inst. for Systems and Robotics
Floreano, Dario — Ec. Pol. Federal, Lausanne

15:30-15:45 — WedET8.3

A Markov Semi-Supervised Clustering Approach and Its Application in Topological Region Extraction, pp. 4743-4748.
Liu, Ming — ETH Zurich
Colas, Francis — ETH Zürich
Pomerleau, Francois — ETH Zurich
Siegwart, Roland — ETH Zurich

15:45-16:00 — WedET8.4

Search-Theoretic and Ocean Models for Localizing Drifting Objects, pp. 4749-4755.
Yau, Joses — Naval Postgraduate School
Chung, Timothy H. — Naval Postgraduate School

WedET10 — Lince
Multifingered Hands (Regular Session)

Chair: Zhang, Jianwei — Univ. of Hamburg

15:00-15:15 — WedET10.1

Tactile Sensor Based Varying Contact Point Manipulation Strategy for Dexterous Robot Hand Manipulating Unknown Objects, pp. 4756-4761.
Zhang, Yuanfei — Harbin Inst. of Tech.

Liu, Hong	DLR
15:15-15:30	WedET10.2
Card Manipulation Using a High-Speed Robot System with High-Speed Visual Feedback, pp. 4762-4767. Attachment	
Yamakawa, Yuji	Univ. of Tokyo
Namiki, Akio	Chiba Univ.
Ishikawa, Masatoshi	Univ. of Tokyo
15:30-15:45	WedET10.3
Action Gist Based Automatic Segmentation for Periodic In-Hand Manipulation Movement Learning, pp. 4768-4775.	
Cheng, Gang	Univ. of Hamburg
Hendrich, Norman	Univ. of Hamburg
Zhang, Jianwei	Univ. of Hamburg
15:45-16:00	WedET10.4
Development of a Low Cost Anthropomorphic Robot Hand with High Capability, pp. 4776-4782. Attachment	
Bae, Ji-Hun	Korea Inst. of Industrial Tech.
Park, Sung-Woo	KITECH
Park, Jae-Han	Korea Inst. of Industrial Tech.
Baeg, Moon-Hong	Korea Inst. of Industrial Tech.
Kim, Doik	KIST
Oh, Sang-Rok	KIST

WedEVT9	Fenix 1
Vision for Segmentation and Servoing (Regular Session)	
Chair: Bobick, Aaron	Georgia Tech.
Co-Chair: Lee, Dongheui	Tech. Univ. of Munich
15:00-15:15	WedEVT9.1
Guided Pushing for Object Singulation, pp. 4783-4790.	
Hermans, Tucker	Georgia Inst. of Tech.
Rehg, James	Georgia Inst. of Tech.
Bobick, Aaron	Georgia Tech.
15:15-15:30	WedEVT9.2
Segmentation of Unknown Objects in Indoor Environments, pp. 4791-4796. Attachment	
Richtsfeld, Andreas	Vienna Univ. of Tech.
Mörwald, Thomas	Vienna Univ. of Tech.
Prankl, Johann	Univ. of Tech. Vienna
Zillich, Michael	Vienna Univ. of Tech.
Vincze, Markus	Vienna Univ. of Tech.
15:30-15:45	WedEVT9.3
Robust Visual Servoing for Object Manipulation with Large Time-Delays of Visual Information, pp. 4797-4803. Attachment	
Kawamura, Akihiro	Kyushu Univ.
Tahara, Kenji	Kyushu Univ.
Kurazume, Ryo	Kyushu Univ.
Hasegawa, Tsutomu	Kyushu Univ.
15:45-15:50	WedEVT9.4
Tire Mounting on a Car Using the Real-Time Control Architecture ARCADE, pp. 4804-4805. Attachment	
Nierhoff, Thomas	TU München
Lou, Lei	Tech. Univ. Muenchen
Koropouli, Vasiliki	Tech. Univ. München
Eggers, Martin	Tech. Univ. München
Fritzsch, Timo	Tech. Univ. Muenchen
Kourakos, Omiros	Tech. Univ. München
Kuehnlenz, Kolja	TUM
Lee, Dongheui	Tech. Univ. of Munich
Radig, Bernd	TU Muenchen
Buss, Martin	Tech. Univ. München
Hirche, Sandra	Tech. Univ. München
15:50-15:55	WedEVT9.5

Ascending Stairway Modeling: A First Step Toward Autonomous Multi-Floor Exploration, pp. 4806-4807. Attachment

Delmerico, Jeffrey	SUNY at Buffalo
Corso, Jason	SUNY Buffalo
Baran, David	Army Res. Lab.
David, Philip	U.S. Army Res. Lab.
Ryde, Julian	Univ. at Buffalo

15:55-16:00 WedEVT9.6

Low Cost MAV Platform AR-Drone in Experimental Verifications of Methods for Vision Based Autonomous Navigation, pp. 4808-4809. Attachment

Saska, Martin	Czech Tech. Univ. in Prague
Krajnik, Tomas	Faculty of Electrical Engineering, Czech Tech. Univ.
Faigl, Jan	Czech Tech. Univ. in Prague
Vonasek, Vojtech	Czech Tech. Univ. in Prague
Preucil, Libor	Czech Tech. Univ. in Prague

WedFT1 Pegaso A

Estimation and Sensor Fusion (Regular Session)

Chair: Fu, Li-Chen — National Taiwan Univ.

16:15-16:30 WedFT1.1

Contactless Deflection Sensing of Concave and Convex Shapes Assisted by Soft Mirrors, pp. 4810-4815.

Dobrzynski, Michal Karol	Ec. Pol. Federal, Lausanne
Halasz, Ionut	Ec. Pol. Federal, Lausanne
Pericet-Camara, Ramon	Ec. Pol. Federal, Lausanne
Floreano, Dario	Ec. Pol. Federal, Lausanne

16:30-16:45 WedFT1.2

Deformable Structure from Motion by Fusing Visual and Inertial Measurement Data, pp. 4816-4821.

Giannarou, Stamatia	Imperial Coll. London
Zhang, Zhiqiang	Imperial Coll. London
Yang, Guang-Zhong	Imperial Coll. London

16:45-17:00 WedFT1.3

Manipulator State Estimation with Low Cost Accelerometers and Gyroscopes, pp. 4822-4827.

Roan, Philip	Robert Bosch LLC
Deshpande, Nikhil	North Carolina State Univ.
Wang, Yizhou	Univ. of California at Berkeley
Pitzer, Benjamin	Robert Bosch LLC

17:00-17:15 WedFT1.4

Vision-Aided Inertial Navigation Using Virtual Features, pp. 4828-4834.

Troiani, Chiara	INRIA Rhone Alpes
Martinelli, Agostino	INRIA Grenoble-Rhone-Alpes

17:15-17:30 WedFT1.5

Sensor Fusion Based Human Detection and Tracking System for Human-Robot Interaction, pp. 4835-4840.

Ong, Kai Siang	National Taiwan Univ.
Hsu, Yuan-Han	National Taiwan Univ.
Fu, Li-Chen	National Taiwan Univ.

WedFT3 Pegaso B

Intelligent Transportation Systems (Regular Session)

Chair: Laugier, Christian — INRIA Rhône-Alpes

16:15-16:30 WedFT3.1

Evaluating Risk at Road Intersections by Detecting Conflicting Intentions, pp. 4841-4846.

Lefèvre, Stéphanie	Inria Grenoble Rhône-Alpes
Laugier, Christian	INRIA Rhône-Alpes
Ibanez-Guzman, Javier	Renault

16:30-16:45 WedFT3.2

Contextual Scene Segmentation of Driving Behavior Based on Double Articulation Analyzer, pp. 4847-4852.

Takenaka, Kazuhito	DENSO Corp.
Bando, Takashi	DENSO Corp.

Nagasaka, Shogo	Ritsumeikan Univ.
Taniguchi, Tadahiro	Ritsumeikan Univ.
Hitomi, Kentarou	Toyota InfoTechnology Center
16:45-17:00	WedFT3.3
Driver Assistance System for Backward Maneuvers in Passive Multi-Trailer Vehicles, pp. 4853-4858.	
Morales Rodriguez, Jesus	Univ. of Malaga
Mandow, Anthony	Univ. of Malaga
Martinez, Jorge L.	Univ. of Malaga
García-Cerezo, Alfonso	Univ. of Malaga
17:00-17:15	WedFT3.4
Investigation of Personal Mobility Vehicle Stability and Maneuverability under Various Road Scenarios, pp. 4859-4864.	
Masood, Jawad	Univ. of Genoa
Zoppi, Matteo	Univ. of Genoa
Molfino, Rezia	Univ. of Genova
17:15-17:30	WedFT3.5
Communication Coverage for Independently Moving Robots, pp. 4865-4872.	
Gil, Stephanie	MIT
Feldman, Dan	MIT CSAIL
Rus, Daniela	MIT

WedFT4	Fenix 3
Mechanism Design for Bio-Inspired Robots (Regular Session)	
Chair: Sugano, Shigeki	Waseda Univ.
Co-Chair: Liljebäck, Pål	SINTEF IKT
16:15-16:30	WedFT4.1
Reconsidering Inter and Intra-Limb Coordination Mechanisms in Quadruped Locomotion, pp. 4873-4878. Attachment	
Kano, Takeshi	Tohoku Univ.
Owaki, Dai	Tohoku Univ.
Ishiguro, Akio	Tohoku Univ.
16:30-16:45	WedFT4.2
Materials and Mechanisms for Amorphous Robotic Construction, pp. 4879-4885. Attachment	
Napp, Nils	Harvard Univ.
Rappoli, Olive R.	Worcester Pol. Inst.
Wu, Jessica M.	Harvard Univ.
Nagpal, Radhika	Harvard Univ.
16:45-17:00	WedFT4.3
Harp Plucking Robotic Finger, pp. 4886-4891.	
Chadefaux, Delphine	UPMC Univ. Paris 06, UMR CNRS 7190, d'Alembert, Paris, France
Le Carrou, Jean-Loïc	UPMC Univ. Paris 06, UMR CNRS 7190, d'Alembert, Paris,France
Vitrani, Marie-Aude	Univ. Pierre et Marie Curie - Paris6
Billout, Sylvère	UPMC Univ. Paris 06, UMR CNRS 7190, d'Alembert, Paris, France
Quartier, Laurent	UPMC Univ. Paris 06, UMR CNRS 7190, d'Alembert, Paris, France
17:00-17:15	WedFT4.4
Humanlike Shoulder Complex for Musculoskeletal Robot Arms, pp. 4892-4897.	
Ikemoto, Shuhei	Osaka Univ.
Kannou, Fumiya	Osaka Univ.
Hosoda, Koh	Osaka Univ.
17:15-17:30	WedFT4.5
A Modular and Waterproof Snake Robot Joint Mechanism with a Novel Force/Torque Sensor, pp. 4898-4905.	
Liljebäck, Pål	SINTEF IKT
Stavdahl, Øyvind	Norwegian Univ. of Science and Tech. (NTNU)
Pettersen, Kristin Y.	Norwegian Univ. of Science and Tech.
Gravdahl, Jan Tommy	Norwegian Univ. of Science and Tech.

WedFT5	Gemini 2
Contact Modeling (Regular Session)	

Chair: Cortesao, Rui — Univ. of Coimbra

16:15-16:30 — WedFT5.1

Synthesis and Stabilization of Complex Behaviors through Online Trajectory Optimization, pp. 4906-4913. Attachment

Tassa, Yuval — Univ. of Washington
Erez, Tom — Univ. of Washington
Todorov, Emanuel — Univ. of Washington

16:30-16:45 — WedFT5.2

Trajectory Optimization for Domains with Contacts Using Inverse Dynamics, pp. 4914-4919. Attachment

Erez, Tom — Univ. of Washington
Todorov, Emanuel — Univ. of Washington

16:45-17:00 — WedFT5.3

Robust Estimation of Contact Information for Recognition of the Physical Properties of an Object, pp. 4920-4925.

Takuma, Takashi — Osaka Inst. of Tech.
Takamine, Ken — Osaka Inst. of Tech.
Masuda, Tatsuya — Osaka Inst. of Tech.

17:00-17:15 — WedFT5.4

Modeling and Simulation of Friction Forces During Needle Insertion Using Local Constraint Method, pp. 4926-4932.

Wang, Lijuan — Ritsumeikan Univ.
Wang, Zhongkui — Ritsumeikan Univ.
Hirai, Shinichi — Ritsumeikan Univ.

17:15-17:30 — WedFT5.5

Comparison of Position and Force-Based Techniques for Environment Stiffness Estimation in Robotic Tasks, pp. 4933-4938.

Coutinho, Fernanda — Univ. of Coimbra
Cortesao, Rui — Univ. of Coimbra

WedFT6 — Gemini 3

Navigation III (Regular Session)

Chair: Dillmann, Rüdiger — KIT Karlsruhe Inst. for Tech.
Co-Chair: Connette, Christian Pascal — Fraunhofer IPA

16:15-16:30 — WedFT6.1

On-Line Road Boundary Estimation by Switching Multiple Road Models Using Visual Features from a Stereo Camera, pp. 4939-4944. Attachment

Chiku, Takeshi — Toyohashi Univ. of Tech.
Miura, Jun — Toyohashi Univ. of Tech.

16:30-16:45 — WedFT6.2

Robot Navigation with Model Predictive Equilibrium Point Control, pp. 4945-4952.

Park, Jong Jin — Univ. of Michigan
Johnson, Collin — Univ. of Michigan
Kuipers, Benjamin — Univ. of Michigan

16:45-17:00 — WedFT6.3

Non-Metric Navigation for Mobile Robot Using Optical Flow, pp. 4953-4958.

Liau, Yung Siang — National Univ. of Singapore
Zhang, Qun — National Univ. of Singapore
Li, Yanan — National Univ. of Singapore
Ge, Shuzhi Sam — National Univ. of Singapore

17:00-17:15 — WedFT6.4

Singularity-Free State-Space Representation for Non-Holonomic, Omnidirectional Undercarriages by Means of Coordinate Switching, pp. 4959-4965.

Connette, Christian Pascal — Fraunhofer IPA
Haegele, Martin — Fraunhofer IPA
Verl, Alexander — Fraunhofer-Gesellschaft

17:15-17:30 — WedFT6.5

Shop Floor Based Programming of Assembly Assistants for Industrial Pick-And-Place Applications, pp. 4966-4971.

Dose, Sven — Karlsruhe Inst. of Tech.
Dillmann, Rüdiger — KIT Karlsruhe Inst. for Tech.

WedFT7	Vega
Motion Planning for Aerial Robotics (Regular Session)	
Chair: Robuffo Giordano, Paolo	Max Planck Inst. for Biological Cybernetics
16:15-16:30	WedFT7.1
Cooperative Quadrocopter Ball Throwing and Catching, pp. 4972-4978. Attachment	
Ritz, Robin	ETH Zürich
Mueller, Mark Wilfried	ETH Zurich
Hehn, Markus	ETH Zürich
D'Andrea, Raffaello	ETHZ
16:30-16:45	WedFT7.2
Real-Time Trajectory Generation for Interception Maneuvers with Quadrocopters, pp. 4979-4984. Attachment	
Hehn, Markus	ETH Zürich
D'Andrea, Raffaello	ETHZ
16:45-17:00	WedFT7.3
Aerial Grasping of a Moving Target with a Quadrotor UAV, pp. 4985-4992. Attachment	
Spica, Riccardo	Max Planck Inst. for Biological Cybernetics
Franchi, Antonio	Max Planck Inst. for Biological Cybernetics
Oriolo, Giuseppe	Univ. di Roma "La Sapienza"
Buelthoff, Heinrich H.	Max Planck Inst. for Biol. Cybernetics
Robuffo Giordano, Paolo	Max Planck Inst. for Biological Cybernetics
17:00-17:15	WedFT7.4
Visual Tracking and Following of a Quadrocopter by Another Quadrocopter, pp. 4993-4998.	
Wenzel, Karl E.	Univ. of Tübingen
Masselli, Andreas	Univ. of Tübingen
Zell, Andreas	Univ. of Tübingen
17:15-17:30	WedFT7.5
A New Utility Function for Smooth Transition between Exploration and Exploitation of a Wind Energy Field, pp. 4999-5005. Attachment	
Chung, Jen Jen	The Univ. of Sydney
Trujillo, Miguel Angel	Center for Advanced Aerospace Tech.
Sukkarieh, Salah	Univ. of Sydney

WedFT8	Gemini 1
Tools for Robot Control Design (Regular Session)	
Chair: Kawamura, Sadao	Ritsumeikan Univ.
16:15-16:30	WedFT8.1
Minimum Angular Acceleration Control of Articulated Body Dynamics, pp. 5006-5011.	
Movellan, Javier	Univ. California San Diego
16:30-16:45	WedFT8.2
A New Feedback Robot Control Method Based on Position/Image Sensor Integration, pp. 5012-5017.	
Nishida, Ryosuke	Ritsumeikan Univ.
Kawamura, Sadao	Ritsumeikan Univ.
16:45-17:00	WedFT8.3
A Framework for Realistic Simulation of Networked Multi-Robot Systems, pp. 5018-5025.	
Kudelski, Michal	IDSIA
Cinus, Marco	IDSIA
Gambardella, Luca	idsia
Di Caro, Gianni A.	IDSIA (USI/SUPSI)
17:00-17:15	WedFT8.4
MuJoCo: A Physics Engine for Model-Based Control, pp. 5026-5033.	
Todorov, Emanuel	Univ. of Washington
Erez, Tom	Univ. of Washington
Tassa, Yuval	Univ. of Washington
17:15-17:30	WedFT8.5
Extensive Analysis of Linear Complementarity Problem (LCP) Solver Performance on Randomly Generated Rigid Body Contact Problems, pp. 5034-5039.	

Drumwright, Evan — George Washington Univ.
Shell, Dylan — Texas A&M Univ.

WedFT10 — Lince
Manipulation and Navigation in Space Applications (Regular Session)

16:15-16:30 — WedFT10.1

Experimental Results for Image-Based Geometrical Reconstruction for Spacecraft Rendezvous Navigation with Unknown and Uncooperative Target Spacecraft, pp. 5040-5045.

Schnitzer, Frank — Tech. Univ. Dresden
Janschek, Klaus — Tech. Univ. Dresden
Willich, Georg — Astrium GmbH

16:30-16:45 — WedFT10.2

Accuracy Improvement of Delay Time Compensation Based on the Coefficient of Restitution for a Hybrid Simulator, pp. 5046-5051.

Satake, Yoshikazu — Tohoku Univ.
Abiko, Satoko — Tohoku Univ.
Jiang, Xin — Tohoku Univ.
Konno, Atsushi — Hokkaido Univ.
Uchiyama, Masaru — Tohoku Univ.

16:45-17:00 — WedFT10.3

Launching Penetrator by Casting Manipulator System, pp. 5052-5058. Attachment

Arisumi, Hitoshi — National Inst. of AIST
Otsuki, Masatsugu — Japan Aerospace Exploration Agency
Nishida, Shin-Ichiro — Japan Aerospace Exploration Agency

17:00-17:15 — WedFT10.4

Augmented Reality Environment with Virtual Fixtures for Robotic Telemanipulation in Space, pp. 5059-5064.

Xia, Tian — Johns Hopkins Univ.
Leonard, Simon — The Johns Hopkins Univ.
Deguet, Anton — Johns Hopkins Univ.
Whitcomb, Louis — The Johns Hopkins Univ.
Kazanzides, Peter — Johns Hopkins Univ.

17:15-17:30 — WedFT10.5

A Grouser Spacing Equation for Determining Appropriate Geometry of Planetary Rover Wheels, pp. 5065-5070.

Skonieczny, Krzysztof — Carnegie Mellon Univ.
Moreland, Scott J. — Carnegie Mellon Univ.
Wettergreen, David — Carnegie Mellon Univ.

WedFT11 — Hidra
Robots with Variable Impedance Actuation (Invited Session)

Chair: Carloni, Raffaella — Univ. of Twente
Co-Chair: Albu-Schäffer, Alin — DLR - German Aerospace Center
Organizer: Carloni, Raffaella — Univ. of Twente
Organizer: Albu-Schäffer, Alin — DLR - German Aerospace Center

16:15-16:30 — WedFT11.1

A Simple Controller for a Variable Stiffness Joint with Uncertain Dynamics and Prescribed Performance Guarantees, pp. 5071-5076.

Psomopoulou, Efi — Aristotle Univ. of Thessaloniki
Doulgeri, Zoe — Aristotle Univ. of Thessaloniki
Rovithakis, George — Aristotel Univ. of Thessaloniki
Tsagarakis, Nikolaos — Istituto Italiano di Tecnologia

16:30-16:45 — WedFT11.2

On the Control of Redundant Robots with Variable Stiffness Actuation, pp. 5077-5082.

Palli, Gianluca — Univ. of Bologna
Melchiorri, Claudio — Univ. of Bologna

16:45-17:00 — WedFT11.3

Limit Cycles and Stiffness Control with Variable Stiffness Actuators, pp. 5083-5088.

Carloni, Raffaella — Univ. of Twente

Marconi, Lorenzo	Univ. of Bologna
17:00-17:15	WedFT11.4
On Impact Decoupling Properties of Elastic Robots and Time Optimal Velocity Maximization on Joint Level, pp. 5089-5096.	
Haddadin, Sami	German Aerospace Center (DLR)
Krieger, Kai	German Aerospace Center
Mansfeld, Nico	Robotics and Mechatronics Center
Albu-Schäffer, Alin	DLR - German Aerospace Center
17:15-17:30	WedFT11.5
Rigid vs. Elastic Actuation: Requirements & Performance, pp. 5097-5104.	
Haddadin, Sami	German Aerospace Center (DLR)
Mansfeld, Nico	Robotics and Mechatronics Center
Albu-Schäffer, Alin	DLR - German Aerospace Center

WedFVT2	Fenix 2
Telerobotics & Brain-Machine Interfaces (Regular Session)	
Chair: Tachi, Susumu	Keio Univ.
16:15-16:30	WedFVT2.1
A Collaborative Control System for Telepresence Robots, pp. 5105-5111. Attachment	
Macharet, Douglas Guimarães	Univ. Federal de Minas Gerais
Florencio, Dinei	Microsoft Res.
16:30-16:45	WedFVT2.2
Design of TELESAR V for Transferring Bodily Consciousness in Telexistence, pp. 5112-5118. Attachment	
Fernando, Charith Lasantha	Keio Univ.
Furukawa, Masahiro	Keio Univ.
Kurogi, Tadatoshi	Keio Univ.
Kamuro, Sho	The Univ. of Tokyo
Sato, Katsunari	Keio Univ.
Minamizawa, Kouta	Keio Univ.
Tachi, Susumu	Keio Univ.
16:45-17:00	WedFVT2.3
Armrest Joystick -Mechanism Design and Basic Experiments, pp. 5119-5124. Attachment	
Ishida, Hiroaki	Tokyo Inst. of Tech.
Hagiwara, Tetsuo	KinderHeim
Ueda, Koji	Tokyo Insitute of Tech.
Hirose, Shigeo	Tokyo Inst. of Tech.
17:00-17:15	WedFVT2.4
Networked Teleoperation with Non-Passive Environment: Application to Tele-Rehabilitation, pp. 5125-5130.	
Atashzar, Seyed Farokh	The Univ. of Western Ontario (UWO)
Polushin, Ilia G.	Western Univ.
Patel, Rajnikant V.	The Univ. of Western Ontario
17:15-17:20	WedFVT2.5
Towards Robotic Re-Embodiment Using a Brain-And-Body-Computer Interface, pp. 5131-5132. Attachment	
Martens, Nikolas	Tech. Univ. Muenchen
Jenke, Robert E.W.	Tech. Univ. Muenchen
Abu-Alqumsan, Mohammad	Tech. Univ. Muenchen
Kapeller, Christoph	g.tec Guger Tech. OG
Hintermueller, Christoph	g.tec Guger Tech. OG
Guger, Christoph	g.tec Guger Tech.
Peer, Angelika	Tech. Univ. München
Buss, Martin	Tech. Univ. München
17:20-17:25	WedFVT2.6
Rock-Paper-Scissors Prediction Experiments Using Muscle Activations, pp. 5133-5134. Attachment	
Jang, Giho	Hanyang Univ.
Choi, Youngjin	Hanyang Univ.
Qu, Zhihua	Univ. of Central Florida
17:25-17:30	WedFVT2.7

RobChair: Experiments Evaluating Brain-Computer Interface to Steer a Semi-Autonomous Wheelchair, pp. 5135-5136. Attachment

Lopes, Ana	Univ. of Coimbra
Pires, Gabriel	Univ. of Coimbra
Nunes, Urbano	Univ. de Coimbra

WedFVT9	Fenix 1
Multi-Modal Learning II (Regular Session)	
Chair: Sandini, Giulio	Italian Inst. of Tech.
Co-Chair: Shimoda, Shingo	RIKEN

16:15-16:30 WedFVT9.1

Experimental Study on Haptic Communication of a Human in a Shared Human-Robot Collaborative Task, pp. 5137-5144.

Dumora, Julie	CEA
Geffard, Franck	Atomic Energy Commissariat (CEA)
Bidard, Catherine	Commissariat à l'Energie Atomique
Brouillet, Thibaut	Epsylon
Fraisse, Philippe	LIRMM

16:30-16:45 WedFVT9.2

Robots Move: Bootstrapping the Development of Object Representations Using Sensorimotor Coordination, pp. 5145-5151.

Glover, Arren	Queensland Univ. of Tech.
Wyeth, Gordon	Queensland Univ. of Tech.

16:45-17:00 WedFVT9.3

Maximally Informative Interaction Learning for Scene Exploration, pp. 5152-5158.

van Hoof, Herke	TU Darmstadt
Kroemer, Oliver	TU Darmstadt
Ben Amor, Heni	Tech. Univ. Darmstadt
Peters, Jan	Tech. Univ. Darmstadt

17:00-17:15 WedFVT9.4

Perceptual Development Triggered by Its Self-Organization in Cognitive Learning, pp. 5159-5164.

Kawai, Yuji	Osaka Univ.
Nagai, Yukie	Osaka Univ.
Asada, Minoru	Osaka Univ.

17:15-17:20 WedFVT9.5

Towards Robotic Calligraphy, pp. 5165-5166. Attachment

Huebel, Nico	ETH Zurich
Mueggler, Elias	ETH Zurich
Waibel, Markus	ETH Zurich
D'Andrea, Raffaello	ETHZ

17:20-17:25 WedFVT9.6

Learning Throwing and Catching Skills, pp. 5167-5168. Attachment

Kober, Jens	Max-Planck Inst. for Intelligent Systems
Muelling, Katharina	Max Planck Inst. for Intelligent Systems
Peters, Jan	Tech. Univ. Darmstadt

17:25-17:30 WedFVT9.7

NAO Walking down a Ramp Autonomously, pp. 5169-5170. Attachment

Lutz, Christan	Univ. of Freiburg
Atmanspacher, Felix	Univ. of Freiburg
Hornung, Armin	Univ. of Freiburg
Bennewitz, Maren	Univ. of Freiburg

WedGT1	Pegaso A
Stereo Vision (Regular Session)	
Chair: Suh, Il Hong	Hanyang Univ.
Co-Chair: Zell, Andreas	Univ. of Tübingen

17:30-17:45 WedGT1.1

A New Feature Detector and Stereo Matching Method for Accurate High-Performance Sparse Stereo Matching, pp. 5171-5176. Attachment

Schauwecker, Konstantin	Univ. of Tübingen
Klette, Reinhard	The Univ. of Auckland
Zell, Andreas	Univ. of Tübingen

17:45-18:00 WedGT1.2

Real-Time Velocity Estimation Based on Optical Flow and Disparity Matching, pp. 5177-5182.

Honegger, Dominik	ETH Zürich
Meier, Lorenz	ETH Zurich
Tanskanen, Petri	ETH Zurich
Greisen, Pierre	ETH Zurich
Pollefeys, Marc	ETH Zurich

18:00-18:15 WedGT1.3

Can Stereo Vision Replace a Laser Rangefinder?, pp. 5183-5190.

Antunes, Michel	Inst. of Systems and Robotics
Barreto, João P.	Univ. of Coimbra
Premebida, Cristiano	Univ. of Coimbra
Nunes, Urbano	Univ. de Coimbra

18:15-18:30 WedGT1.4

Dependable Dense Stereo Matching by Both Two-Layer Recurrent Process and Chaining Search, pp. 5191-5196.

Lee, Sehyung	hanyang Univ.
Park, Young-Bin	Hanyang Univ.
Suh, Il Hong	Hanyang Univ.

WedGT2 Fenix 2

Telerobotics (Regular Session)

Chair: Artigas, Jordi — DLR - German Aerospace Center

17:30-17:45 WedGT2.1

Multi-Objective Optimization for Telerobotic Operations Via the Internet, pp. 5197-5202.

Jia, Yunyi	Michigan State Univ.
Xi, Ning	Michigan State Univ.
Liu, Shuang	City Univ. of Hong Kong, Kowloon, Hong Kong
Zhang, Huatao	Michigan State Univ.
Bi, Sheng	South China Univ. of Tech.

17:45-18:00 WedGT2.2

A Master-Slave Robotic Simulator Based on GPUDirect, pp. 5203-5207.

Li, Jianying	Shenzhen Inst. of Advanced Tech.
Guo, Yu	SIAT
Zhang, Heye	SIAT
Xie, Yongming	SIAT

18:00-18:15 WedGT2.3

Network Unfoldment and Application to Wave Variables Using Measured Forces, pp. 5208-5213.

Artigas, Jordi	DLR - German Aerospace Center
Hirzinger, Gerd	German Aerospace Center (DLR)

18:15-18:30 WedGT2.4

Unimodal Asymmetric Interface for Teleoperation of Mobile Manipulators: A User Study, pp. 5214-5219.

Hernandez Herdocia, Alejandro	Univ. of Alberta
Shademan, Azad	Univ. of Alberta
Jagersand, Martin	Univ. of Alberta

WedGT3 Pegaso B

Home Automation and Personal Robots (Regular Session)

Chair: Mazzoleni, Stefano — Scuola Superiore Sant'Anna

17:30-17:45 WedGT3.1

Acquisition and Use of Transferable, Spatio-Temporal Plan Representations for Human-Robot Interaction, pp. 5220-5226. Attachment

Karg, Michael	Tech. Univ. München

Kirsch, Alexandra	Univ. Tübingen
17:45-18:00	WedGT3.2
Hierarchical Generalized Context Inference for Context-Aware Smart Homes, pp. 5227-5232.	
Wu, Chao-Lin	National Taiwan Univ.
Weng, Mao Yuan	National Taiwan Univ.
Lu, Ching-Hu	National Taiwan Univ.
Fu, Li-Chen	National Taiwan Univ.
18:00-18:15	WedGT3.3
Context-Aware Home Energy Saving Based on Energy-Prone Context, pp. 5233-5238.	
Weng, Mao Yuan	National Taiwan Univ.
Wu, Chao-Lin	National Taiwan Univ.
Lu, Ching-Hu	National Taiwan Univ.
Yeh, Hui-Wen	National Taiwan Univ.
Fu, Li-Chen	National Taiwan Univ.
18:15-18:30	WedGT3.4
Learning and Generalization of Complex Tasks from Unstructured Demonstrations, pp. 5239-5246.	
Niekum, Scott	Univ. of Massachusetts Amherst
Osentoski, Sarah	Robert Bosch LLC
Konidaris, George Dimitri	MIT
Barto, Andy	Univ. of Massachessettes at Amherst

WedGT5	Gemini 2
Cooperating Robots (Regular Session)	
Chair: Stilman, Mike	Georgia Tech.
Co-Chair: Lima, Pedro	Inst. Superior Técnico - Inst. for Systems and Robotics
17:30-17:45	WedGT5.1
Weighted Synergy Graphs for Role Assignment in Ad Hoc Heterogeneous Robot Teams, pp. 5247-5254. Attachment	
Liemhetcharat, Somchaya	Carnegie Mellon Univ.
Veloso, Manuela	Carnegie Mellon Univ.
17:45-18:00	WedGT5.2
Multi-Robot Multi-Object Rearrangement in Assignment Space, pp. 5255-5261. Attachment	
Levihn, Martin	Georgia Inst. of Tech.
Igarashi, Takeo	The Univ. of Tokyo
Stilman, Mike	Georgia Tech.
18:00-18:15	WedGT5.3
On Mission-Dependent Coordination of Multiple Vehicles under Spatial and Temporal Constraints, pp. 5262-5269.	
Pecora, Federico	Örebro Univ.
Cirillo, Marcello	Örebro Univ.
Dimitrov, Dimitar Nikolaev	Oerebro Univ.
18:15-18:30	WedGT5.4
Multi-Robot Exploration and Rendezvous on Graphs, pp. 5270-5276.	
Meghjani, Malika	McGill Univ.
Dudek, Gregory	McGill Univ.

WedGT6	Gemini 3
Localization and Mapping III (Regular Session)	
Chair: Miura, Jun	Toyohashi Univ. of Tech.
17:30-17:45	WedGT6.1
Efficient Search for Correct and Useful Topological Maps, pp. 5277-5282.	
Johnson, Collin	Univ. of Michigan
Kuipers, Benjamin	Univ. of Michigan
17:45-18:00	WedGT6.2
Accurate On-Line 3D Occupancy Grids Using Manhattan World Constraints, pp. 5283-5290.	
Peasley, Brian	Clemson Univ.
Birchfield, Stan	Clemson Univ.
Cunningham, Alexander	Georgia Inst. of Tech.

Dellaert, Frank	Georgia Inst. of Tech.

18:00-18:15	WedGT6.3

Accurate 3D Maps from Depth Images and Motion Sensors Via Nonlinear Kalman Filtering, pp. 5291-5297.

Hervier, Thibault	Centre de Robotique, Mines ParisTech
Bonnabel, Silvere	Mines ParisTech
Goulette, François	MINES ParisTech

18:15-18:30	WedGT6.4

Fourier-Based Registrations for Two-Dimensional Forward-Looking Sonar Image Mosaicing, pp. 5298-5305.

Hurtos, Natalia	Univ. of Girona
Cufi, Xavier	Univ. of Girona
Petillot, Yvan R.	Heriot-Watt Univ.
Salvi, Joaquim	Univ. of Girona

WedGT7	Vega
Mobile Manipulation (Regular Session)	
Chair: Ishikawa, Masato	Osaka Univ.

17:30-17:45	WedGT7.1

Path Planning for Image-Based Control of Wheeled Mobile Manipulators, pp. 5306-5312.

Kazemi, Moslem	Carnegie Mellon Univ.
Gupta, Kamal	Simon Fraser Univ.
Mehrandezh, Mehran	Univ. of Regina

17:45-18:00	WedGT7.2

Mobile Manipulation through an Assistive Home Robot, pp. 5313-5320. Attachment

Ciocarlie, Matei	Willow Garage
Hsiao, Kaijen	Willow Garage
Leeper, Adam Eric	Stanford Univ.
Gossow, David	Willow Garage

18:00-18:15	WedGT7.3

Modeling and Control of Cylindrical Mobile Robot, pp. 5321-5326. Attachment

Hirano, Tetsurou	Osaka Univ.
Ishikawa, Masato	Osaka Univ.
Osuka, Koichi	Osaka Univ.

18:15-18:30	WedGT7.4

Sensor-Based Redundancy Resolution for a Nonholonomic Mobile Manipulator, pp. 5327-5332.

Zhang, Huatao	Michigan State Univ.
Jia, Yunyi	Michigan State Univ.
Xi, Ning	Michigan State Univ.

WedGT8	Gemini 1
Control Design (Regular Session)	
Chair: Caldwell, Darwin G.	Itituto Italiano di Tecnologia
Co-Chair: Torras, Carme	CSIC - UPC

17:30-17:45	WedGT8.1

Redundant Inverse Kinematics: Experimental Comparative Review and Two Enhancements, pp. 5333-5340.

Colomé, Adrià	Inst. de Robòtica i Informàtica Industrial (CSIC-UPC)
Torras, Carme	CSIC - UPC

17:45-18:00	WedGT8.2

Hierarchical Strategy for Dynamic Coverage, pp. 5341-5346. Attachment

Franco, Carlos	Univ. de Zaragoza
Paesa, David	Univ. de Zaragoza
Lopez-Nicolas, Gonzalo	Univ. of Zaragoza
Sagues, Carlos	Univ. de Zaragoza
Llorente, Sergio	BSH Electrodomésticos España S.A.

18:00-18:15	WedGT8.3

Internal Model Control for Improving the Gait Tracking of a Compliant Humanoid Robot, pp. 5347-5352. Attachment

Colasanto, Luca	Fondazione Istituto Italiano di Tecnologia

Tsagarakis, Nikolaos	Istituto Italiano di Tecnologia
Li, Zhibin	Italian Inst. of Tech.
Caldwell, Darwin G.	Fondazione Itituto Italiano di Tecnologia

18:15-18:30 WedGT8.4

Approximate Steering of a Plate-Ball System under Bounded Model Perturbation Using Ensemble Control, pp. 5353-5359. Attachment

Becker, Aaron	Univ. of Illinois at Urbana-Champaign
Bretl, Timothy	Univ. of Illinois at Urbana-Champaign

WedGT9 Fenix 1

Control of Wheeled Robots II (Regular Session)

Chair: Dietrich, Franz — Tech. Univ. Braunschweig

17:30-17:45 WedGT9.1

A Novel Approach for Steeringwheel Synchronization with Velocity/Acceleration Limits and Mechanical Constraints, pp. 5360-5366.

Schwesinger, Ulrich	ETH Zurich
Pradalier, Cedric	ETH Zurich
Siegwart, Roland	ETH Zurich

17:45-18:00 WedGT9.2

Wheeled Inverted-Pendulum-Type Personal Mobility Robot with Collaborative Control of Seat Slider and Leg Wheels, pp. 5367-5372.

Tomokuni, Nobuyasu	Kinki Univ.
Shino, Motoki	The Univ. of Tokyo

18:00-18:15 WedGT9.3

Disturbance Compensation in Pushing, Pulling, and Lifting for Load Transporting Control of a Wheeled Inverted Pendulum Type Assistant Robot Using the Extended State Observer, pp. 5373-5380. Attachment

Canete, Luis	Fukushima Univ.
Takahashi, Takayuki	Fukushima Univ.

18:15-18:30 WedGT9.4

A 3D Dynamic Model of a Spherical Wheeled Self-Balancing Robot, pp. 5381-5386.

Inal, Ali Nail	Bilkent Univ.
Morgul, Omer	Bilkent Univ.
Saranli, Uluc	Bilkent Univ.

WedGT10 Lince

Safety, Failure Handling and Recovery II (Regular Session)

Chair: Prassler, Erwin — Bonn-Rhein-Sieg Univ. of Applied Sciences

17:30-17:45 WedGT10.1

Dual Back-Stepping Observer to Anticipate the Rollover Risk in Under/over-Steering Situations. Application to ATVs in Off-Road Context, pp. 5387-5393.

Richier, Mathieu	IRSTEA
Lenain, Roland	Irstea
Thuilot, Benoit	Clermont-Ferrand Univ.
Debain, Christophe	Irstea

17:45-18:00 WedGT10.2

Towards Learning of Safety Knowledge from Human Demonstrations, pp. 5394-5399.

Ertle, Philipp	Univ. Duisburg-Essen
Tokic, Michel	Univ. of Applied Sciences Ravensburg-Weingarten
Cubek, Richard	Ravensburg-Weingarten Univ. of Applied Sciences, Weingarten
Voos, Holger	Univ. of Applied Sciences Ravensburg-Weingarten
Söffker, Dirk	Univ. of Duisburg-Essen

18:00-18:15 WedGT10.3

Psychological Experiments on Avoidance Action Characteristics for Estimating Avoidability of Harm to Eyes from Robots, pp. 5400-5405.

Hattori, Takamasa	Nagoya Univ.
Yamada, Yoji	Nagoya Univ.
Mori, Shuji	Kyushu Univ.
Okamoto, Shogo	Nagoya Univ.

Hara, Susumu	Nagoya Univ.

18:15-18:30	WedGT10.4

A Truly Safely Moving Robot Has to Know What Injury It May Cause, pp. 5406-5413.

Haddadin, Sami	German Aerospace Center (DLR)
Haddadin, Simon	German Aerospace Center
Khoury, Augusto	German Aerospace Center
Rokahr, Tim	German Aerospace Center
Parusel, Sven	German Aerospace Center
Burgkart, Rainer	Tech. Univ. München
Bicchi, Antonio	Univ. di Pisa
Albu-Schäffer, Alin	DLR - German Aerospace Center

WedGVT4	Fenix 3
Haptics, Force Sensing and Manipulation (Regular Session)	
Chair: Tsuji, Toshiaki	Saitama Univ.

17:30-17:45	WedGVT4.1

A Supervisory Control System for a Multi-Fingered Robotic Hand Using Datagloves and a Haptic Device, pp. 5414-5419. Attachment

Yoshimura, Youtaro	Ritsumeikan Univ.
Ozawa, Ryuta	Ritsumeikan Univ.

17:45-18:00	WedGVT4.2

Experiments in Quasi-Static Manipulation of a Planar Elastic Rod, pp. 5420-5427. Attachment

Matthews, Dennis	Univ. of Illinois (Urbana-Champaign)
Bretl, Timothy	Univ. of Illinois at Urbana-Champaign

18:00-18:15	WedGVT4.3

Whole-Body Force Sensation by Force Sensor with End-Effector of Arbitrary Shape, pp. 5428-5433.

Kurita, Naoyuki	Saitama Univ.
Sakaino, Sho	Saitama Univ.
Tsuji, Toshiaki	Saitama Univ.

18:15-18:20	WedGVT4.4

Robots for Humanity: User-Centered Design for Assistive Mobile Manipulation, pp. 5434-5435. Attachment

Chen, Tiffany	Georgia Inst. of Tech.
Ciocarlie, Matei	Willow Garage
Cousins, Steve	Willow Garage, Inc
Grice, Phillip M.	Georgia Inst. of Tech.
Hawkins, Kelsey	Georgia Inst. of Tech.
Hsiao, Kaijen	Willow Garage
Kemp, Charlie	Georgia Inst. of Tech.
King, Chih-Hung	Georgia Inst. of Tech.
Lazewatsky, Daniel	Oregon State Univ.
Leeper, Adam Eric	Stanford Univ.
Nguyen, Hai	Georgia Inst. of Tech.
Paepcke, Andreas	Willow Garage Inc.
Pantofaru, Caroline	Willow Garage, Inc.
Smart, William	Washington Univ. in St. Louis
Takayama, Leila	Willow Garage

18:20-18:25	WedGVT4.5

Autonomous Construction of a Roofed Structure: Synthesizing Planning and Stigmergy on a Mobile Robot, pp. 5436-5437. Attachment

Wismer, Stefan	Autonomous Systems Lab. ETH Zürich
Hitz, Gregory	ETH Zurich
Bonani, Michael	EPFL
Gribovskiy, Alexey	Ec. Pol. fédérale de Lausanne
Pradalier, Cedric	ETH Zurich
Magnenat, Stéphane	ETH Zürich

18:25-18:30	WedGVT4.6

Additional Manipulating Function for Limited Narrow Space with Omnidirectional Driving Gear, pp. 5438-5439. Attachment

Tadakuma, Kenjiro	Osaka Univ.
Tadakuma, Riichiro	Yamagata Univ.
Ioka, Kyohei	Yamagata Univ.
Kudo, Takeshi	Yamagata Univ.
Takagi, Minoru	Yamagata Univ.
Tsumaki, Yuichi	Yamagata Univ.
Higashimori, Mitsuru	Osaka Univ.
Kaneko, Makoto	Osaka Univ.

WedGJT11	Hidra
Jubilee Videos I (Video Session)	
Chair: Tarn, T. J.	Washington Univ.
Co-Chair: Zhang, Hong	Univ. of Alberta
17:30-17:40	WedGJT11.1
Telexistence — from 1980 to 2012, pp. 5440-5441. Attachment	
Tachi, Susumu	Keio Univ.
Minamizawa, Kouta	Keio Univ.
Furukawa, Masahiro	Keio Univ.
Fernando, Charith Lasantha	Keio Univ.
17:40-17:50	WedGJT11.2
The Dynamo Project: The World's First Robot Soccer Players, pp. 5442-5443. Attachment	
Mackworth, Alan	Univ. of British Columbia
17:50-18:00	WedGJT11.3
The Birth of the Brain-Controlled Wheelchair, pp. 5444-5445. Attachment	
Carlson, Tom	EPFL (Ec. Pol. Fédérale de Lausanne)
Leeb, Robert	École Pol. Fédérale de Lausanne
Chavarriaga, Ricardo	École Pol. Fédérale de Lausanne (EPFL)
Millán, José del R.	EPFL
18:00-18:10	WedGJT11.4
CoBots: Collaborative Robots Servicing Multi-Floor Buildings, pp. 5446-5447. Attachment	
Veloso, Manuela	Carnegie Mellon Univ.
Biswas, Joydeep	Carnegie Mellon Univ.
Coltin, Brian	Carnegie Mellon Univ.
Rosenthal, Stephanie	Carnegie Mellon Univ.
Brandao, Susana, D	Carnegie Mellon Univ. Inst. Superior Tecnico
Kollar, Thomas	CSAIL
Meriçli, Çetin	Carnegie Mellon Univ.
Samadi, Mehdi	Carnegie Mellon Univ.
Ventura, Rodrigo	Inst. Superior Técnico
18:10-18:20	WedGJT11.5
A Decade of Rescue Robots, pp. 5448-5449. Attachment	
Murphy, Robin	Texas A&M

ThuP6J	Fenix
Silver Jubilee Celebrations and Awards Ceremony (Plenary Session)	
Chair: Tarn, T. J.	Washington Univ.
10:30-10:40	ThuP6J.2
10 Years in the Cooperation of Unmanned Aerial Systems, pp. 5450-5451. Attachment	
Ollero, Anibal	Univ. of Seville
Kondak, Konstantin	German Aerospace Center
10:40-10:50	ThuP6J.3
Video: RoboCup Robot Soccer History 1997 – 2011, pp. 5452-5453. Attachment	
Stone, Peter	Univ. of Texas at Austin
Veloso, Manuela	Carnegie Mellon Univ.
10:50-11:00	ThuP6J.4
Variable Impedance Actuators: Moving the Robots of Tomorrow, pp. 5454-5455. Attachment	
Vanderborght, Bram	Vrije Univ. Brussel
Albu-Schäffer, Alin	DLR - German Aerospace Center
Bicchi, Antonio	Univ. of Pisa
Burdet, Etienne	imperial Coll. london
Caldwell, Darwin G.	Italian Inst. of Tech.
Carloni, Raffaella	Univ. of Twente
Catalano, Manuel	Faculty of Engineering - Univ. of Pisa
Ganesh, Gowrishankar	ATR International
Garabini, Manolo	Univ. di Pisa
Grioli, Giorgio	Univ. di Pisa
Haddadin, Sami	German Aerospace Center (DLR)
Jafari, Amir	Swiss Federal Inst. of Tech. (ETH) Zurich
Laffranchi, Matteo	Italian Inst. of Tech.
Lefeber, Dirk	Vrije Univ. Brussel
Petit, Florian	German Aerospace Center (DLR)
Stramigioli, Stefano	Univ. of Twente
Tsagarakis, Nikolaos	Istituto Italiano di Tecnologia
Van Damme, Michaël	Vrije Univ. Brussel
Van Ham, Ronald	Vrije Univ. Brussel
Visser, Ludo C.	Univ. of Twente
Wolf, Sebastian	DLR - German Aerospace Center
Grebenstein, Markus	German Aerospace Center (DLR) Inst. of Robotics and Mechatro
11:00-11:10	ThuP6J.5
Development of Robotic Hands: The UB Hand Evolution, pp. 5456-5457. Attachment	
Palli, Gianluca	Univ. of Bologna
Scarcia, Umberto	Univ. of Bologna
Melchiorri, Claudio	Univ. of Bologna
Vassura, Gabriele	Univ. of Bologna
11:10-11:20	ThuP6J.6
The Power of Prediction: Robots That Read Intentions, pp. 5458-5459. Attachment	
Bicho, Estela	Univ. of Minho
Erlhagen, Wolfram	Univ. of Minho
Sousa, Emanuel	Univ. of Minho
Machado, Toni	Univ. of Minho
Louro, Luis	Univ. of Minho
Hipolito, Nzoji	Univ. of Minho
Costa e Silva, Eliana	Univ. of Minho
Silva, Rui	Univ. of Minho
Cuijpers, Raymond	Radboud Univ. Nijmegen
Meulenbroek, Ruud	Radboud Univ. Nijmegen
Bekkering, Harold	Radboud Univ. Nijmegen
11:20-11:30	ThuP6J.7
Ultra High-Speed Robot Based on 1kHz Vision System, pp. 5460-5461. Attachment	

Ishikawa, Masatoshi — Univ. of Tokyo
Namiki, Akio — Chiba Univ.
Senoo, Taku — Univ. of Tokyo
Yamakawa, Yuji — Univ. of Tokyo

Book of Abstracts, pp. 5463-5672