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Naval Surface Warfare Center Panama City
Naval Surface Warfare Center Panama City

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Tohoku Univ.
Tohoku Univ.
Tohoku Univ.

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Goh, Young Koon	Nanyang Tech. Univ.
Nguyen, Kim Doang	Nanyang Tech. Univ.
Chen, I-Ming	Nanyang Tech. Univ.
Yeo, Song Huat	Nanyang Tech. Univ.
Duh, Been-Lirn	Nanyang Tech. Univ.
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Takemura, Kenjiro	Tokyo Inst. of Tech.
Edamura, Kazuya	New Tech. Management Co.,Ltd.
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Borst, Alexander	Max-Planck-Inst. of Neurobiology
Kuehnlenz, Kolja	Tech. Univ. München
Buss, Martin	Tech. Univ. Muenchen

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Ishiguro, Akio	Tohoku Univ.
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Guignard, Andre		Ec. Pol. Federal, Lausanne (EPFL)
Zufferey, Jean-Christophe		EPFL
Floreano, Dario		Ec. Pol. Federal, Lausanne
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Co-Chair: Balkcom, Devin		Dartmouth Coll.
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Kaneko, Makoto		Osaka Univ.
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Sun, Yu		Univ. of Toronto
Zhang, Ming		Toronto General Res. Inst.
Anderson, Robin		Univ. of Toronto
Langille, Lowell		Toronto General Res. Inst.
Chan, Warren		Univ. of Toronto
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Co-Chair: Bergbreiter, Sarah		Univ. of Maryland, Coll. Park
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Zhang, Mingjun		Agilent
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Zhang, Jiangbo	Michigan State Univ.
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Ferreira, Antoine	Univ. of Orléans

WePP Pavilion

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Co-Chair: Sukhatme, Gaurav	Univ. of Southern California
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Co-Chair: Roumeliotis, Stergios	Univ. of Minnesota
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Gonzalez, Javier	Univ. of Malaga
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Mourikis, Anastasios	Univ. of Minnesota
Roumeliotis, Stergios	Univ. of Minnesota
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<i>On the Solvability of the Localization Problem in Robot Networks</i> , pp. 480-485.	
Dieudonné, Yoann	Univ. de Picardie Jules Verne
Labbani-Igbida, Ouiddad	Univ. de Picardie Jules Verne
Petit, Franck	Univ. de Picardie Jules Verne

WeB2 102

Vision-Based Estimation and Control (Regular Sessions)

Chair: Sagawa, Ryusuke	Osaka Univ.
Co-Chair: Chaumette, Francois	INRIA
13:40-14:00	WeB2.1
<i>Vision-Based Estimation of Slip Angle for Mobile Robots and Planetary Rovers</i> , pp. 486-491.	
Reina, Giulio	Univ. of Salento
Ishigami, Genya	Tohoku Univ.
Nagatani, Keiji	Tohoku Univ.
Yoshida, Kazuya	Tohoku Univ.
14:00-14:20	WeB2.2

<i>Robust and Real-Time Egomotion Estimation Using a Compound Omnidirectional Sensor</i> , pp. 492-497.		
Ngo, Thanh Trung		ISIR, Osaka Univ.
Nagahara, Hajime	Graduate School of Engineering Science ,	Osaka Univ.
Sagawa, Ryusuke		Osaka Univ.
Mukaigawa, Yasuhiro		Osaka Univ.
Yachida, Masahiko	Graduate School of Engineering Science ,	Osaka Univ.
Yagi, Yasushi		Osaka Univ.
14:20-14:40		WeB2.3
<i>Hybrid Image-Plane/Stereo (HIPS) for Orientation Control of Manipulators</i> , pp. 498-503.		
Nickels, Kevin		Trinity Univ.
14:40-15:00		WeB2.4
<i>Vision-Based Range Estimation Via Immersion and Invariance for Robot Formation Control</i> , pp. 504-509.		
Morbidi, Fabio		Univ. of Siena
Mariottini, Gian Luca		Univ. of Siena
Prattichizzo, Domenico		Univ. of Siena
15:00-15:20		WeB2.5
<i>Visual Predictive Control for Manipulators with Catadioptric Camera</i> , pp. 510-515.		
Allibert, Guillaume	Lab. of Vision and Robotic	
Courtial, Estelle	Lab. of Vision and Robotic	
Touré, Youssoufi	Univ. d'Orléans	
15:20-15:40		WeB2.6
<i>Robot and Obstacles Localization and Tracking with an External Camera Ring</i> , pp. 516-521. Attachment		
Pizarro, Daniel		Univ. of Alcalá
Marron, Marta		Univ. of Alcalá (UAH)
Peón, Daniel		Univ. of Alcalá (UAH)
Mazo Quintas, Manuel		Univ. of Alcalá (UAH)
Garcia Garcia, Juan Carlos		Univ. of Alcalá (UAH)
Sotelo Vázquez, Miguel Ángel		Univ. of Alcalá
Santiso Gómez, Enrique		Univ. of Alcalá (UAH)
WeB3		103
Vision-Based Localization (Regular Sessions)		
Chair: Behnke, Sven		Univ. of Freiburg
Co-Chair: MacDonald, Bruce		Univ. of Auckland
13:40-14:00		WeB3.1
<i>SVM-Based Discriminative Accumulation Scheme for Place Recognition</i> , pp. 522-529.		
Pronobis, Andrzej		Royal Inst. of Tech.
Martinez Mozos, Oscar		Univ. of Freiburg
Caputo, Barbara		IDIAP Res. Inst.
14:00-14:20		WeB3.2
<i>Towards Robust Place Recognition for Robot Localization</i> , pp. 530-537.		
Ullah, Muhammad Muneeb	IDIAP Res. Inst. Martigny, Switzerland.	
Pronobis, Andrzej		Royal Inst. of Tech.
Caputo, Barbara		IDIAP Res. Inst.
Luo, Jie		IDIAP Res. Inst. / EPFL
Jensfelt, Patric		Royal Inst. of Tech.
Christensen, Henrik Iskov		Georgia Inst. of Tech.
14:20-14:40		WeB3.3
<i>Mobile Robot Localization Using Panoramic Vision and Combinations of Feature Region Detectors</i> , pp. 538-543.		
Ramisa, Arnau	Artificial Intelligence Res. Inst. (IIIA-CSIC)	
Tapus, Adriana		Univ. of Southern California
Lopez de Mantaras, Ramon		Spanish National Res. Council
Toledo Morales, Ricardo		Univ. Autónoma de Barcelona
14:40-15:00		WeB3.4
<i>Visual Localisation in Outdoor Industrial Building Environments</i> , pp. 544-550. Attachment		
Nuske, Stephen		CSIRO
Roberts, Jonathan		CSIRO ICT Centre
Wyeth, Gordon Fraser		Univ. of Queensland
15:00-15:20		WeB3.5
<i>Localization in Urban Environments by Matching Ground Level Video Images with an Aerial Image</i> , pp. 551-556.		
Leung, Keith Yu Kit	Univ. of Toronto Inst. of Aerospace Studies	
Clark, C. M.		California Pol. State Univ.
Huissoon, Jan		Univ. of Waterloo
15:20-15:40		WeB3.6
<i>Object-Based Place Recognition and Loop Closing with Jigsaw Puzzle Image Segmentation Algorithm</i> , pp. 557-562.		
Cheng, Chang		The Univ. of Tennessee
Page, David		The Univ. of Tennessee
Abidi, Mongi		Univ. of Tennessee, Knoxville

Chair: Singh, Sanjiv	Carnegie Mellon Univ.
Co-Chair: Ollero, Anibal	Univ. of Seville
13:40-14:00	WeB4.1
<i>Formation Control Over Delayed Communication Networks</i> , pp. 563-568.	
Secchi, Cristian	Univ. of Modena and Reggio Emilia
Fantuzzi, Cesare	Univ. di Modena e Reggio Emilia
14:00-14:20	WeB4.2
<i>Relocation of Hopping Sensors</i> , pp. 569-574.	
Cen, Zhiwei	Google Inc.
Mutka, Matt	Michigan State University
14:20-14:40	WeB4.3
<i>Employing Wave Variables for Coordinated Control of Robots with Distributed Control Architecture</i> , pp. 575-582.	
Ott, Christian	Univ. of Tokyo
Nakamura, Yoshihiko	Univ. of Tokyo
14:40-15:00	WeB4.4
<i>Decentralized Mapping of Robot-Aided Sensor Networks</i> , pp. 583-589. Attachment	
Djugash, Joseph	Carnegie Mellon Univ.
Singh, Sanjiv	Carnegie Mellon Univ.
Grocholsky, Ben	Carnegie Mellon Univ.
15:00-15:20	WeB4.5
<i>Commanding Mobile Robots Via Wireless Ad-Hoc Networks - a Comparison of Four Ad-Hoc Routing Protocol Implementations</i> , pp. 590-595.	
Zeiger, Florian	Univ. of Wuerzburg
Kraemer, Nikolaus	Univ. of Würzburg
Schilling, Klaus	Univ. of Würzburg
15:20-15:40	WeB4.6
<i>A Particle Filtering Method for Wireless Sensor Network Localization with an Aerial Robot Beacon</i> , pp. 596-601.	
Caballero, Fernando	Univ. of Seville
Merino, Luis	Pablo de Olavide Univ.
Maza, Ivan	Univ. of Seville
Ollero, Anibal	Univ. of Seville

WeB5 105

Space and Underwater Robotics (Regular Sessions)

Chair: Estlin, Tara	NASA Jet Propulsion Lab.
Co-Chair: Kaiser, William	UCLA
13:40-14:00	WeB5.1
<i>Rotary Hammer Ultrasonic/sonic Drill System</i> , pp. 602-607.	
Badescu, Mircea	California Inst. of Tech.
Stroescu, Sergiu	Honeybee Robotics Spacecraft Mechanisms Corp.
Sherrit, Stewart	California Inst. of Tech.
Aldrich, Jack	California Inst. of Tech.
Bao, Xiaoqi	California Inst. of Tech.
Bar-Cohen, Yoseph	Jet Propulsion Lab. (JPL)
Chang, Zensheu	California Inst. of Tech.
Hernandez, Wilson	Honeybee Robotics Spacecraft Mechanisms Corp.
Ibrahim, Alaa	Honeybee Robotics Spacecraft Mechanisms Corp.
14:00-14:20	WeB5.2
<i>Experimental Validation of a Fuel-Efficient Robotic Maneuver Control Algorithm for Very Large Flexible Space Structures</i> , pp. 608-613.	
Ono, Masahiro	MIT
Boning, Peggy	MIT
Nohara, Tatsuro	MIT
Dubowsky, Steven	MIT
14:20-14:40	WeB5.3
<i>Spatial Coverage Planning for a Planetary Rover</i> , pp. 614-620.	
Gaines, Daniel	Jet Propulsion Lab.
Estlin, Tara	NASA Jet Propulsion Lab.
Chouinard, Caroline	Jet Propulsion Lab.
14:40-15:00	WeB5.4
<i>NIMS-AQ: A Novel System for Autonomous Sensing of Aquatic Environments</i> , pp. 621-628. Attachment	
Stealey, Michael J.	UCLA
Singh, Amarjeet	Univ. of California, Los Angeles
Batalin, Maxim	CENS, UCLA
Kaiser, William	UCLA
Jordan, Brett	UCLA, CENS
15:00-15:20	WeB5.5
<i>Towards Spatial and Semantic Mapping in Aquatic Environments</i> , pp. 629-636.	
Chen, Victor	Univ. of California, Los Angeles
Batalin, Maxim	CENS, UCLA
Kaiser, William	UCLA
Sukhatme, Gaurav	Univ. of Southern California

15:20-15:40 WeB5.6
Stability of Double-Integrator Plants Controlled Using Real-Time SLAM Maps, pp. 637-642.
 Hover, Franz MIT

WeB6 206

Teleoperation (Regular Sessions)

Chair: Yokokohji, Yasuyoshi Kyoto Univ.
 Co-Chair: Melchiorri, Claudio Univ. of Bologna

13:40-14:00 WeB6.1
Transparent Bilateral Control for Time-Delayed Teleoperation by State Convergence, pp. 643-648.
 Azorin, Jose M. Univ. MIGUEL HERNANDEZ DE ELCHE
 Aracil, Rafael Univ. Pol. de Madrid
 Perez, Carlos Univ. Miguel Hernandez de Elche
 Garcia, Nicolas Univ. Miguel Hernandez de Elche
 Sabater Navarro, Jose M. Univ. Miguel Hernandez de Elche

14:00-14:20 WeB6.2
Bilateral Telemanipulation of a Flexible Catheter in a Constrained Environment, pp. 649-654.
 Jayender, Jagadeesan The Univ. of Western Ontario
 Azizian, Mahdi Univ. of Western Ontario
 Patel, Rajni The Univ. of Western Ontario

14:20-14:40 WeB6.3
Robust Variable-Scale Bilateral Control for Micro Teleoperation, pp. 655-662.
 Vander Poorten, Emmanuel Benjamin Katholieke Univ. Leuven
 Kanno, Takahiro Kyoto Univ.
 Yokokohji, Yasuyoshi Kyoto Univ.

14:40-15:00 WeB6.4
A New Robust Stability Analysis and Design Tool for Bilateral Teleoperation Control Systems, pp. 663-670.
 Haddadi, Amir Queen's Univ.
 Hashtrudi-Zaad, Keyvan Queen's Univ.

15:00-15:20 WeB6.5
Bilateral Energy Transfer in Delayed Teleoperation on the Time Domain, pp. 671-676.
 Artigas, Jordi DLR - German Aerospace Center
 Borghesan, Gianni Univ. of Bologna
 Preusche, Carsten DLR
 Melchiorri, Claudio Univ. of Bologna
 Hirzinger, Gerd German Aerospace Center (DLR)

15:20-15:40 WeB6.6
Stability of Bilateral Teleoperators with Projection-Based Force Reflection Algorithms, pp. 677-682.
 Polushin, Ilia G. Carleton Univ.
 Liu, Peter X. Carleton Univ.
 Lung, Chung-Horng Carleton Univ.

WeB7 207

Biologically Inspired Robotic Fish (Regular Sessions)

Chair: Sitti, Metin Carnegie Mellon Univ.
 Co-Chair: Zhang, Weizhong Univ. of Louisville

13:40-14:00 WeB7.1
Maneuverability of a Robotic Tuna with Compliant Body, pp. 683-688.
 Mazumdar, Anirban Massachusetts Inst. of Tech.
 Valdivia y Alvarado, Pablo MIT
 Youcef-Toumi, Kamal Massachusetts Inst. of Tech.

14:00-14:20 WeB7.2
Modeling of Biomimetic Robotic Fish Propelled by an Ionic Polymer-Metal Composite Actuator, pp. 689-694. Attachment
 Mbemmo, Ernest Michigan State Univ.
 Chen, Zheng Michigan State Univ.
 Shatara, Stephan Michigan State Univ.
 Tan, Xiaobo Michigan State Univ.

14:20-14:40 WeB7.3
Kinematic Modeling of a Bio-Inspired Robotic Fish, pp. 695-699.
 Zhou, Chao Inst. of Automation, Chinese Acad. of Sciences
 Tan, Min Inst. of Automation, Chinese Acad. of Sciences
 Cao, Zhiqiang Inst. of Automation, Chinese Acad. of Sciences
 Wang, Shuo Inst. of Automation, Chinese Acad. of Sciences
 Creighton, Doug Deakin Univ.
 Gu, Nong Deakin Univ.
 Nahavandi, Saeid Deakin Univ.

14:40-15:00 WeB7.4
A Biorobotic Flapping Fin for Propulsion and Maneuvering, pp. 700-705.
 Tangorra, James Drexel Univ.
 Lauder, George Harvard Univ.
 Madden, Peter Harvard Univ.

Mittal, Rajat	GWU
Bozkurttas, Meliha	GWU
Hunter, Ian	MIT
15:00-15:20	WeB7.5
<i>Design, Fabrication and Analysis of a Body-Caudal Fin Propulsion System for a Microrobotic Fish</i> , pp. 706-711. Attachment	
Cho, Kyu-Jin	Harvard Univ.
Hawkes, Elliot Wright	School of Engineering and Applied Sciences, Harvard Univ.
Quinn, Chris	Harvard
Wood, Robert	Harvard Univ.
15:20-15:40	WeB7.6
<i>Experimental Investigation on Underwater Acoustic Ranging for Small Robotic Fish</i> , pp. 712-717.	
Shatara, Stephan	Michigan State Univ.
Tan, Xiaobo	Michigan State Univ.
Mbemmo, Ernest	Michigan State Univ.
Gingery, Nathan	Michigan State Univ.
Henneberger, Stephan	Michigan State Univ.
WeB8	208
Assistive Hands (Regular Sessions)	
Chair: Hasegawa, Yasuhisa	Univ. of Tsukuba
Co-Chair: Castellini, Claudio	Univ. of Genova
13:40-14:00	WeB8.1
<i>Five-Fingered Assistive Hand with Mechanical Compliance of Human Finger</i> , pp. 718-724.	
Hasegawa, Yasuhisa	Univ. of Tsukuba
Mikami, Yasuyuki	Univ. of Tsukuba
Watanabe, Kosuke	Univ. of Tsukuba
Sankai, Yoshiyuki	Univ. of Tsukuba
14:00-14:20	WeB8.2
<i>Surface EMG for Force Control of Mechanical Hands</i> , pp. 725-730.	
Castellini, Claudio	Univ. of Genova
van der Smagt, Patrick	DLR
Sandini, Giulio	Italian Inst. of Tech.
Hirzinger, Gerd	German Aerospace Center (DLR)
14:20-14:40	WeB8.3
<i>EMG-Based Control of an Exoskeleton Robot for Human Forearm and Wrist Motion Assist</i> , pp. 731-736. Attachment	
Gopura, Ranathunga Arachchilage Ruwan Chandra	Saga Univ.
Kiguchi, Kazuo	Saga Univ.
14:40-15:00	WeB8.4
<i>Biological Stiffness Control Strategies for the Anatomically Correct Testbed (ACT) Hand</i> , pp. 737-742.	
Balasubramanian, Ravi	Univ. of Washington
Matsuoka, Yoky	Univ. of Washington
15:00-15:20	WeB8.5
<i>Design and Control of a Multifunction Myoelectric Hand with New Adaptive Grasping and Self-Locking Mechanisms</i> , pp. 743-748.	
Chu, Jun-Uk	Kyungpook National Univ.
Jung, Dong-Hyun	Kyungpook National Univ.
Lee, Yun-Jung	Kyungpook National Univ.
15:20-15:40	WeB8.6
<i>An Anthropomorphic Underactuated Robotic Hand with 15 Dofs and a Single Actuator</i> , pp. 749-754. Attachment	
Gosselin, Clement	Univ. Laval
Pelletier, Frederic	Univ. Laval
Laliberte, Thierry	Univ. Laval
WeB9	209
Novel Actuators (Regular Sessions)	
Chair: Grant, Edward	North Carolina State Univ.
Co-Chair: Schenker, Paul	Jet Propulsion Lab.
13:40-14:00	WeB9.1
<i>Transportation of Hard Disk Media Using Electrostatic Levitation and Tilt Control</i> , pp. 755-760. Attachment	
van West, Ewoud Frank	The Univ. of Tokyo
Yamamoto, Akio	Univ. of Tokyo
Higuchi, Toshiro	The Univ. of Tokyo
14:00-14:20	WeB9.2
<i>Dynamic Analysis of a High-Bandwidth, Large-Strain, PZT Cellular Muscle Actuator with Layered Strain Amplification</i> , pp. 761-766.	
Secord, Thomas	Massachusetts Inst. of Tech.
Ueda, Jun	Nara Inst. of Science and Tech.
Asada, Harry	MIT
14:20-14:40	WeB9.3
<i>Modeling and Fault Analysis of BLDC Motor Based Servo Actuators for Manipulators</i> , pp. 767-772.	
Kim, Sewoong	Agency for Defense Development
14:40-15:00	WeB9.4
<i>Synergistic Design of a Humanoid Hand with Hybrid DC Motor – SMA Array Actuators Embedded in the Palm</i> , pp. 773-778.	

Rosmarin, Josiah	MIT
Asada, Harry	MIT
15:00-15:20	WeB9.5
<i>A Review of Actuation and Power Electronics Options for Flapping-Wing Robotic Insects</i> , pp. 779-786.	
Karpelson, Michael	Harvard Univ.
Wood, Robert	Harvard Univ.
Wei, Gu-Yeon	Harvard Univ.
15:20-15:40	WeB9.6
<i>Adaptive Rate-Dependent Feedforward Controller for Hysteretic Piezoelectric Actuator</i> , pp. 787-792.	
Tan, U-Xuan	Nanyang Tech. Univ.
Widjaja, Ferdinan	Nanyang Tech. Univ. Singapore
Tun Latt, Win	Nanyang Tech. Univ.
Veluvolu, Kalyana Chakravarthy	Nanyang Tech. Univ.
Shee, Cheng Yap	Nanyang Tech. Univ. Singapore
Riviere, Cameron	Carnegie Mellon Univ.
Ang, Wei Tech	Nanyang Tech. Univ.
WeB10	211
Quadrupedal Locomotion (Regular Sessions)	
Chair: Papadopoulos, Evangelos	National Tech. Univ. of Athens
Co-Chair: Minor, Mark	Univ. of Utah
13:40-14:00	WeB10.1
<i>The Influence of DC Electric Drives on Sizing Quadruped Robots</i> , pp. 793-798.	
Chatzacos, Panagiotis	National Tech. Univ. of Athens
Papadopoulos, Evangelos	National Tech. Univ. of Athens
14:00-14:20	WeB10.2
<i>Loper: A Quadruped-Hybrid Stair Climbing Robot</i> , pp. 799-804. Attachment	
Herbert, Sam	UMN
Drenner, Andrew	UMN
Papanikolopoulos, Nikos	Univ. of Minnesota
14:20-14:40	WeB10.3
<i>Use of a Novel Multipart Controller for the Parametric Study of a Trotting Quadruped Robot</i> , pp. 805-810.	
Cherouvim, Nicholas	National Tech. Univ. of Athens
Papadopoulos, Evangelos	National Tech. Univ. of Athens
14:40-15:00	WeB10.4
<i>A Control Architecture for Quadruped Locomotion Over Rough Terrain</i> , pp. 811-818. Attachment	
Kolter, J. Zico	Stanford Univ.
Rodgers, Mike P.	Stanford Univ.
Ng, Andrew	Stanford Univ.
15:00-15:20	WeB10.5
<i>Pattern Generators with Sensory Feedback for the Control of Quadruped Locomotion</i> , pp. 819-824. Attachment	
Righetti, Ludovic	EPFL
Ijspeert, Auke	EPFL
15:20-15:40	WeB10.6
<i>Speed and Height Control for a Special Class of Running Quadruped Robots</i> , pp. 825-830.	
Cherouvim, Nicholas	National Tech. Univ. of Athens
Papadopoulos, Evangelos	National Tech. Univ. of Athens
WeB11	212
Calibration, Accuracy, Identification (Regular Sessions)	
Chair: Bruyninckx, Herman	Katholieke Univ. Leuven
Co-Chair: Gupta, Kamal	Simon Fraser Univ.
13:40-14:00	WeB11.1
<i>Observability Index Selection for Robot Calibration</i> , pp. 831-836.	
Sun, Yu	Univ. of Utah
Hollerbach, John	Univ. of Utah
14:00-14:20	WeB11.2
<i>A New Method for the Estimation of Position Accuracy in Parallel Manipulators with Joint Clearances by Screw Theory</i> , pp. 837-844.	
Frisoli, Antonio	Scuola Superiore Sant'Anna
Solazzi, Massimiliano	Scuola Superiore Sant'Anna
Bergamasco, Massimo	Scuola Superiore S. Anna
14:20-14:40	WeB11.3
<i>Rolling Mechanical Imaging: A Novel Approach for Soft Tissue Modelling and Identification During Minimally Invasive Surgery</i> , pp. 845-850.	
Liu, Hongbin	King's Coll. London
Noonan, David	Imperial Coll. London
Althoefer, Kaspar	Kings Coll. London
Seneviratne, Lakmal	Kings Coll. London
14:40-15:00	WeB11.4
<i>On-Line Identification of Contact Dynamics in the Presence of Geometric Uncertainties</i> , pp. 851-856.	
Verscheure, Diederik	Katholieke Univ. Leuven
Swevers, Jan	Katholieke Univ. Leuven

Bruyninckx, Herman De Schutter, Joris	Katholieke Univ. Leuven Katholieke Univ. Leuven
15:00-15:20 <i>Hierarchical LS Parameter Estimation for Multi-Input, Multi-Output Systems</i> , pp. 857-861.	WeB11.5
Yuan, Ping Ding, Feng Liu, Peter X.	Jiangnan Univ. Univ. Carleton Univ.
15:20-15:40 <i>Wavelet Networks for Estimation of Coupled Friction in Robotic Manipulators</i> , pp. 862-867.	WeB11.6
Naerum, Edvard Cornella, Jordi Elle, Ole Jakob	Univ. of Oslo Rikshospitalet Medical Centre Rikshospitalet Univ. Hospital

WeB12 214

Micro/Nano Robots (Regular Sessions)

Chair: Fearing, Ron Co-Chair: Guo, Yi	Univ. of California at Berkeley Stevens Inst. of Tech.
13:40-14:00 <i>Injection and Cutting Methods of Animal Cells Using a Microfluidic Chip</i> , pp. 868-873.	WeB12.1
Ichikawa, Akihiko Takahashi, Seiya Matsukawa, Kazutsugu Tanikawa, Tamio Ohba, Kohtaro	National Inst. of AIST NILGS NILGS National Inst. of AIST National Inst. of AIST
14:00-14:20 <i>Modeling Assembled-MEMS Microrobots for Wireless Magnetic Control</i> , pp. 874-879.	WeB12.2
Nagy, Zoltan Ergeneman, Olgaç Abbott, Jake Marco, Hutter Hirt, Ann M. Nelson, Bradley J.	ETH Zurich ETH Zurich ETH Zurich ETH Zurich ETH-Zurich ETH Zurich
14:20-14:40 <i>Biohybrid Microsystems Actuated by Cardiomyocytes: Microcantilever, Microrobot, and Micropump</i> , pp. 880-885.	WeB12.3
Park, Sukho Kim, Jinseok Park, Jungyul Lee, Junghoon Yoon, Euisung Park, Jongoh	Chonnam National Univ. KIST Sogang Univ. Seoul National Univ. Korea Inst. of Science and Tech. Chonnam National Univ.
14:40-15:00 <i>Fast Scale Prototyping for Folded Millirobots</i> , pp. 886-892. Attachment	WeB12.4
Hoover, Aaron Fearing, Ron	Univ. of California, Berkeley Univ. of California at Berkeley
15:00-15:20 <i>Multi-Axial Micromanipulation Organized by Versatile Micro Robots and Micro Tweezers</i> , pp. 893-898.	WeB12.5
Fuchiwaki, Ohmi Ito, Akira Misaki, Daigo Aoyama, Hisayuki	Univ. of Electro-Communications Oki Data Corp. Shizuoka Inst. of Science and Tech. Univ. of Electro-Communications
15:20-15:40 <i>On-Chip Cell Manipulation by Magnetically Modified Soft Microactuators</i> , pp. 899-904.	WeB12.6
Yamanishi, Yoko Sakuma, Shinya Arai, Fumihito	Tohoku Univ. Tohoku Univ. Tohoku Univ.

WeC1 101

Position Estimation and Navigation (Regular Sessions)

Chair: Berns, Karsten Co-Chair: Sibley, Gabe	Univ. of Kaiserslautern Univ. of Oxford
16:00-16:20 <i>GPS-Based Indoor Positioning System for Mobile Robot Navigation with Multi-Channel Pseudolite</i> , pp. 905-910.	WeC1.1
Niwa, Haruhiko Kodaka, Kenri	Waseda Univ. WABOT-HOUSE Lab. Waseda Univ.
16:20-16:40 <i>Mobile Robot Control in the Road Sign Problem Using Reservoir Computing Networks</i> , pp. 911-916.	WeC1.2
Antonelo, Eric Aislan Schrauwen, Benjamin Stroobandt, Dirk	Ghent Univ. Ghent Univ. Ghent Univ.
16:40-17:00 <i>Visual State Estimation Using Self-Tuning Kalman Filter and Echo State Network</i> , pp. 917-922.	WeC1.3

Tsai, ChiYi	National Chiao Tung Univ.
Dutoit, Xavier	K.U.Leuven
Song, Kai-Tai	National Chiao Tung Univ.
Van Brussel, Hendrik	Katholieke Univ. Leuven
Nuttin, Mamix	K.U.Leuven
17:00-17:20	WeC1.4
<i>3D Obstacle Detection in Vegetated Off-Road Terrain</i> , pp. 923-928.	
Schäfer, Bernd-Helge	Univ. of Kaiserslautern
Hach, Andreas	Univ. of Kaiserslautern
Proetzsch, Martin Johannes	Univ. of Kaiserslautern
Berns, Karsten	Univ. of Kaiserslautern
17:20-17:40	WeC1.5
<i>Monocular Range Sensing: A Non-Parametric Learning Approach</i> , pp. 929-934.	
Plagemann, Christian	Univ. of Freiburg
Endres, Felix	Univ. of Freiburg
Hess, Juergen Michael	Univ. of Freiburg
Stachniss, Cyrill	Univ. of Freiburg
Burgard, Wolfram	Univ. of Freiburg

WeC2 102

Visual Attention (Regular Sessions)

Chair: Bajracharya, Max	JPL
Co-Chair: Mezouar, Youcef	Blaise Pascal Univ.
16:00-16:20	WeC2.1
<i>Informed Visual Search: Combining Attention and Object Recognition</i> , pp. 935-942.	
Forssen, Per-Erik	Linköping Univ.
Meger, David Paul	Univ. of British Columbia
Lai, Kevin	Univ. of British Columbia
Helmer, Scott	Univ. of British Columbia
Little, James J.	UBC
Lowe, David	UBC
16:20-16:40	WeC2.2
<i>An Object-Based Visual Attention Model for Robots</i> , pp. 943-948.	
Yu, Yuanlong	Memorial Univ. of Newfoundland
Mann, George K. I.	Memorial Univ. of Newfoundland
Gosine, Raymond G.	Memorial Univ. of Newfoundland
16:40-17:00	WeC2.3
<i>Object Separation Using Active Methods and Multi-View Representations</i> , pp. 949-955.	
Welke, Kai	Univ. of Karlsruhe
Asfour, Tamim	Univ. of Karlsruhe (TH)
Dillmann, Rüdiger	Univ. of Karlsruhe
17:00-17:20	WeC2.4
<i>Optimal Camera Placement with Adaptation to Dynamic Scenes</i> , pp. 956-961. Attachment	
Fiore, Loren	UMN
Somasundaram, Guruprasad	UMN
Drenner, Andrew	UMN
Papanikolopoulos, Nikos	Univ. of Minnesota
17:20-17:40	WeC2.5
<i>Multimodal Saliency-Based Bottom-Up Attention, a Framework for the Humanoid Robot Icube</i> , pp. 962-967.	
Ruesch, Jonas	Univ. of Zurich
Lopes, Manuel	Inst. Superior Técnico
Bernardino, Alexandre	Inst. Superior Técnico
Hörnstein, Jonas	Inst. Superior Técnico
Santos-Victor, José	Inst. Superior Técnico
Pfeifer, Rolf	Univ. of Zurich
17:40-18:00	WeC2.6
<i>Information-Optimal Selective Data Return for Autonomous Rover Traverse Science and Survey</i> , pp. 968-973.	
Thompson, David	Carnegie Mellon Univ.
Smith, Trey	Carnegie Mellon Univ.
Wettergreen, David	Carnegie Mellon Univ.

WeC3 103

Visual Object Detection and Recognition (Regular Sessions)

Chair: Yagi, Yasushi	Osaka Univ.
Co-Chair: Huebner, Kai	Royal Inst. of Tech. (KTH), Stockholm
16:00-16:20	WeC3.1
<i>Three Dimensional Measurement of Objects in Liquid and Estimation of Refractive Index of Liquid by Using Images of Water Surface with a Stereo Vision System</i> , pp. 974-979.	
Yamashita, Atsushi	Shizuoka Univ.
Fujii, Akira	Shizuoka Univ.
Kaneko, Toru	Shizuoka Univ.

16:20-16:40		WeC3.2
<i>Fast 3D Reconstruction of Human Shape and Motion Tracking by Parallel Fast Level Set Method</i> , pp. 980-986.		
Iwashita, Yumi		Kyushu Univ.
Kurazume, Ryo		Kyushu Univ.
Hara, Kenji		Kyushu Univ.
Uchida, Seiichi		Kyushu Univ.
Morooka, Ken'ichi		Kyushu Univ.
Hasegawa, Tsutomu		Kyushu Univ.
16:40-17:00		WeC3.3
<i>Learning of Moving Cast Shadows for Dynamic Environments</i> , pp. 987-992.		
Joshi, Ajay		Univ. of Minnesota
Papanikolopoulos, Nikos		Univ. of Minnesota
17:00-17:20		WeC3.4
<i>Pose Detection of 3-D Objects Using S²-Correlated Images and Discrete Spherical Harmonic Transforms</i> , pp. 993-998.		
Hoover, Randy		Colorado State Univ.
Maciejewski, Anthony A.		Colorado State Univ.
Roberts, Rodney		Florida State Univ.
17:20-17:40		WeC3.5
<i>Towards Detection of Orthogonal Planes in Monocular Images of Indoor Environments</i> , pp. 999-1004.		
Micusik, Branislav		George Mason Univ.
Wildenauer, Horst		Vienna Univ. of Tech.
Vincze, Markus		Tech. Univ. Wien
17:40-18:00		WeC3.6
<i>Active Exploration and Keypoint Clustering for Object Recognition</i> , pp. 1005-1010.		
Kootstra, Gert		Univ. of Groningen
Ypma, Jelmer		Univ. of Groningen
de Boer, Bart		Univ. of Groningen

WeC4 104

Sensor Networks and Robots (Regular Sessions)

Chair: Kumar, Vijay		Univ. of Pennsylvania
Co-Chair: Corke, Peter		CSIRO
16:00-16:20		WeC4.1
<i>An Approximation Algorithm for the Least Overlapping P-Frame Problem with Non-Partial Coverage for Networked Robotic Cameras</i> , pp. 1011-1016.		
Xu, Yiliang		Texas A&M Univ.
Song, Dezhen		Texas A&M Univ.
Yi, Jingang		San Diego State Univ.
van der Stappen, Frank		Utrecht Univ.
16:20-16:40		WeC4.2
<i>A Wearable, Self-Calibrating, Wireless Sensor Network for Body Motion Processing</i> , pp. 1017-1022. Attachment		
Lim, Kwang Yong		Nanyang Tech. Univ.
Goh, Young Koon		Nanyang Tech. Univ.
Dong, Wei		Nanyang Tech. Univ.
Nguyen, Kim Doang		Nanyang Tech. Univ.
Chen, I-Ming		Nanyang Tech. Univ.
Yeo, Song Huat		Nanyang Tech. Univ.
Duh, Been-Lim		Nanyang Tech. Univ.
Kim, Chung Gon		Nanyang Tech. Univ.
16:40-17:00		WeC4.3
<i>Backbone-Based Roadmaps for Robot Navigation in Sensor Networks</i> , pp. 1023-1029.		
Yao, Zhenwang		Simon Fraser Univ.
Gupta, Kamal		Simon Fraser Univ.
17:00-17:20		WeC4.4
<i>Decentralized Mobility Models for Data Collection in Wireless Sensor Networks</i> , pp. 1030-1035.		
Hanoun, Samer		Deakin Univ.
Creighton, Doug		Deakin Univ.
Nahavandi, Saeid		Deakin Univ.
17:20-17:40		WeC4.5
<i>Surface Based Wireless Power Transmission and Bidirectional Communication for Autonomous Robot Swarms</i> , pp. 1036-1041. Attachment		
Deyle, Travis		Georgia Tech.
Reynolds, Matthew		Duke Univ.
17:40-18:00		WeC4.6
<i>Consensus Learning for Distributed Coverage Control</i> , pp. 1042-1048.		
Schwager, Mac		Massachusetts Inst. of Tech.
Slotine, Jean-Jacques E.		Massachusetts Inst. of Tech.
Rus, Daniela		MIT

WeC5 105

Underwater Robots (Regular Sessions)

Chair: Elfes, Alberto		Jet Propulsion Lab.
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Co-Chair: Dunbabin, Matthew David	CSIRO ICT Centre
16:00-16:20	WeC5.1
<i>A Deliberative Architecture for AUV Control</i> , pp. 1049-1054.	
McGann, Conor	Monterey Bay Aquarium Res. Inst.
Py, Frederic	Monterey Bay Aquarium Res. Inst.
Rajan, Kanna	Monterey Bay Aquarium Res. Inst.
Thomas, Hans	Monterey Bay Aquarium Res. Inst.
Henthorn, Richard	Monterey Bay Aquarium Res. Inst.
McEwen, Rob	MBARI
16:20-16:40	WeC5.2
<i>A Novel Method for Hydrothermal Vents Prospecting Using an Autonomous Underwater Robot</i> , pp. 1055-1060.	
Ferri, Gabriele	IMT Advanced Studies Lucca
Jakuba, Michael	Woods Hole Oceanographic Inst.
Yoerger, Dana	Woods Hole Oceanographic Inst.
16:40-17:00	WeC5.3
<i>Operation of Robotic Science Boats Using the Telesupervised Adaptive Ocean Sensor Fleet System</i> , pp. 1061-1068.	
Podnar, Gregg	Carnegie-Mellon Univ.
Dolan, John M.	Carnegie Mellon Univ.
Elfes, Alberto	Jet Propulsion Lab.
17:00-17:20	WeC5.4
<i>Model-Aided Inertial Navigation for Underwater Vehicles</i> , pp. 1069-1076.	
Hegrenaes, Oyvind	Norwegian Univ. of Science and Tech.
Berglund, Einar	Norwegian Defence Res. Establishment
Hallingstad, Oddvar	Norwegian Univ. of Science and Tech.
17:20-17:40	WeC5.5
<i>Incorporation of Novel Underwater Thrusters into Vehicle Control Systems</i> , pp. 1077-1082.	
Krieg, Mike	Univ. of Colorado Boulder
Mohseni, Kamran	Univ. of Colorado Boulder
17:40-18:00	WeC5.6
<i>Optimal Trajectory Generation for a Glider in Time-Varying 2D Ocean Flows B-Spline Model</i> , pp. 1083-1088.	
Zhang, Weizhong	Univ. of Louisville
Inanc, Tamer	Univ. of Louisville
Ober-Blöbaum, Sina	Univ. of Paderborn
Marsden, Jerrold	Caltech

WeC6 206

Simulation and Training Environments (Regular Sessions)

Chair: Asama, Hajime	The Univ. of Tokyo
Co-Chair: Krovi, Venkat	Univ. at Buffalo (SUNY)
16:00-16:20	WeC6.1
<i>Open Brain Simulator Estimating Internal State of Human through External Observation towards Human Biomechatronics</i> , pp. 1089-1093.	
Otake, Mihoko	The Univ. of Tokyo
Takagi, Toshihisa	The Univ. of Tokyo
Asama, Hajime	The Univ. of Tokyo
16:20-16:40	WeC6.2
<i>Integration of an Evaluation Function into the Suture/Ligature Training System WKS-2R</i> , pp. 1094-1099.	
Oshima, Nobuki	Waseda Univ.
Solis, Jorge	Waseda Univ.
Ishii, Hiroyuki	Waseda Univ.
Matsuoka, Noriyuki	Kyoto Kagaku
Hatake, Kazuyuki	KYOTOKAGAKU co., Ltd.
Takanishi, Atsuo	Waseda Univ.
16:40-17:00	WeC6.3
<i>Simulation of Forceps Extraction on a Childbirth Simulator</i> , pp. 1100-1105.	
Moreau, Richard	INSA-Lyon
Pham, Minh Tu	INSA de Lyon (Inst. National des Sciences Appliquees)
Redarce, Tanneguy	INSA de Lyon (Inst. National des Sciences Appliquees)
Dupuis, Olivier	HCL (Hospices Civils de Lyon)
17:00-17:20	WeC6.4
<i>Continuous and Discrete Mechanics for Tree Representations of Mechanical Systems</i> , pp. 1106-1111.	
Johnson, Elliot	Univ. of Colorado at Boulder
Murphey, Todd	Univ. of Colorado
17:20-17:40	WeC6.5
<i>Identifying Physical Properties of Deformable Objects by Using Particle Filters</i> , pp. 1112-1117.	
Conti, Francois	Stanford Univ.
Burion, Steve	EPFL
Petrovskaya, Anna	Stanford Univ.
Baur, Charles	EPFL
Khatib, Oussama	Stanford Univ.
17:40-18:00	WeC6.6
<i>Steady Headwind Display with Conditional Angular Rate-Switching Control</i> , pp. 1118-1124. Attachment	

Kulkarni, Sandip	Univ. of Utah
Minor, Mark	Univ. of Utah
Deaver, Mark	Univ. of Utah
Pardjaj, Erik	Univ. of Utah
Hollerbach, John	Univ. of Utah

WeC7 207

Biologically Inspired Robots (Regular Sessions)

Chair: Martinoli, Alcherio	EPFL
Co-Chair: Tangorra, James	Drexel Univ.
16:00-16:20	WeC7.1
<i>Gecko-Inspired Climbing Behaviors on Vertical and Overhanging Surfaces</i> , pp. 1125-1131.	
Santos, Daniel	Stanford Univ.
Heyneman, Barrett	Stanford Univ.
Kim, Sangbae	Stanford Univ.
Esparza, Noe	Stanford Univ.
Cutkosky, Mark	Stanford Univ.
16:20-16:40	WeC7.2
<i>A Bio-Inspired Analog Scheme for Navigational Control of Lightweight Autonomous Agents</i> , pp. 1132-1137.	
Zourntos, Takis	Texas A&M Univ.
Mathai, Nebu John	Texas A&M Univ.
Magierowski, Sebastian	Univ. of Calgary
Kundur, Deepa	Texas A&M Univ.
16:40-17:00	WeC7.3
<i>A Comparison of Casting and Spiraling Algorithms for Odor Source Localization in Laminar Flow</i> , pp. 1138-1143.	
Lochmatter, Thomas	EPFL
Raemy, Xavier	EPFL
Matthey, Loïc	EPFL
Indra, Saurabh	EPFL
Martinoli, Alcherio	EPFL
17:00-17:20	WeC7.4
<i>A Fully Decentralized Control of an Amoeboid Robot by Exploiting the Law of Conservation of Protoplasmic Mass</i> , pp. 1144-1149.	
Umedachi, Takuya	Tohoku Univ.
Kitamura, Taichi	Tohoku Univ.
Ishiguro, Akio	Tohoku Univ.
17:20-17:40	WeC7.5
<i>Toroidal Skin Drive for Snake Robot Locomotion</i> , pp. 1150-1155.	
McKenna, James C.	SAIC
Anhalt, David	SAIC
Bronson, Frederick M.	Leitner-Poma
Brown, H. Ben	Carnegie Mellon Univ.
Schwerin, Michael	Carnegie-Mellon Univ.
Shammas, Elie	Biorobotics
Choset, Howie	Carnegie Mellon Univ.
17:40-18:00	WeC7.6
<i>Control of 3-Dimensional Snake Robots by Using Redundancy</i> , pp. 1156-1161. Attachment	
Tanaka, Motoyasu	The Univ. of Electro-Communications
Matsuno, Fumitoshi	The Univ. of Electro-Communications

WeC8 208

Grasp and Manipulation Planning (Regular Sessions)

Chair: Trinkle, Jeff	Rensselaer Pol. Inst.
Co-Chair: Liu, Yunhui	Chinese Univ. of Hong Kong
16:00-16:20	WeC8.1
<i>Fast Grasp Planning for Hand/Arm Systems Based on Convex Model</i> , pp. 1162-1168.	
Harada, Kensuke	National Inst. of AIST
Kaneko, Kenji	National Inst. of AIST
Kanehiro, Fumio	National Inst. of AIST
16:20-16:40	WeC8.2
<i>Central Axis Approach for Computing N-Finger Force-Closure Grasps</i> , pp. 1169-1174.	
Bounab, Belkacem	Pol. School
Sidobre, Daniel	Univ. of toulouse
Zaatri, Abdelouahab	Univ. Mentouri_Constantine
16:40-17:00	WeC8.3
<i>Planning Optimal Independent Contact Regions for Two-Fingered Force-Closure Grasp of a Polygon</i> , pp. 1175-1180.	
Phoka, Thanathorn	Chulalongkorn Univ.
Vongmasa, Pawin	Chulalongkorn Univ.
Nilwatchararang, Chaichana	Chulalongkorn Univ.
Pipattanasomporn, Peam	Chulalongkorn Univ.
Sudsang, Attawith	Chulalongkorn Univ.
17:00-17:20	WeC8.4

<i>Caging Rigid Polytopes Via Finger Dispersion Control</i> , pp. 1181-1186.	Chulalongkorn Univ. Chulalongkorn Univ. Chulalongkorn Univ.
Pipattanasomporn, Peam Sudsang, Attawith Vongmasa, Pawin	
17:20-17:40	WeC8.5
<i>An Optimization Approach to Planning for Mobile Manipulation</i> , pp. 1187-1192.	Carnegie Mellon Carnegie Mellon Univ. Carnegie Mellon Univ.
Berenson, Dmitry Kuffner, James Choset, Howie	
17:40-18:00	WeC8.6
<i>Planning of Smooth Motions for a Ball-Plate System with Limited Contact Area</i> , pp. 1193-1200.	RIKEN BMC RIKEN
Svinin, Mikhail Hosoe, Shigeyuki	
WeC9	209
Multibody Dynamics (Regular Sessions)	
Chair: Belta, Calin Co-Chair: Chakraborty, Nilanjan	Boston Univ. Rensselaer Pol. Inst.
16:00-16:20	WeC9.1
<i>Hybrid Simulation of a Dual-Arm Space Robot Colliding with a Floating Object</i> , pp. 1201-1206.	Tohoku Univ. Tohoku Univ. Musashi Inst. of Tech. Tohoku Univ. Tohoku Univ.
Takahashi, Ryohei Ise, Hiroto Sato, Daisuke Konno, Atsushi Uchiyama, Masaru	
16:20-16:40	WeC9.2
<i>Dynamics Modeling of Structure-Varying Kinematic Chains for Free-Flying Robots</i> , pp. 1207-1212.	German Aerospace Center (DLR) German Aerospace Center (DLR) German Aerospace Center (DLR)
Lampariello, Roberto Abiko, Satoko Hirzinger, Gerd	
16:40-17:00	WeC9.3
<i>On the Hybrid Dynamics of Planar Mechanisms Supported by Frictional Contacts. I: Necessary Conditions for Stability</i> , pp. 1213-1218.	California Intitute of Tech. Tech.
Or, Yizhar Rimon, Elon	
17:00-17:20	WeC9.4
<i>On the Hybrid Dynamics of Planar Mechanisms Supported by Frictional Contacts II: Stability of Two-Contact Rigid Body Postures</i> , pp. 1219-1224.	California Intitute of Tech. Tech.
Or, Yizhar Rimon, Elon	
17:20-17:40	WeC9.5
<i>Dynamics and Control of Constrained Mechanical Systems in Terms of Reduced Quasi-Velocities</i> , pp. 1225-1232.	Canadian Space Agency
Aghili, Farhad	
17:40-18:00	WeC9.6
<i>Skilled-Motion Plannings of Multi-Body Systems Based Upon Riemannian Distance</i> , pp. 1233-1238.	Ritsumeikan Univ. Ritsumeikan Univ. Ritsumeikan Univ. Pohang Inst. of Intelligent Robotics
Sekimoto, Masahiro Arimoto, Suguru Kawamura, Sadao Bae, Ji-Hun	
WeC10	211
Biped Locomotion (Regular Sessions)	
Chair: Tedrake, Russ Co-Chair: Buehler, Martin	Massachusetts Inst. of Tech. Boston Dynamics
16:00-16:20	WeC10.1
<i>Quasi-Static Rolling Control of the Rolling Disk Biped Robot</i> , pp. 1239-1245. Attachment	Univ. of Utah Univ. of Utah
Phipps, Cristian Minor, Mark	
16:20-16:40	WeC10.2
<i>Asymptotic Stability of Dynamic Bipedal Gait with Constraint on Impact Posture</i> , pp. 1246-1251.	BMC RIKEN The Inst. of Physical and Chemical Res. (RIKEN)
Asano, Fumihiko Luo, Zhi-Wei	
16:40-17:00	WeC10.3
<i>Optimal Design and Implementation of an Energy-Efficient, Semi-Active Biped</i> , pp. 1252-1257.	National Tsing Hua Univ. National Tsing Hua Univ.
Wu, Ting-Ying Yeh, T.-J.	
17:00-17:20	WeC10.4
<i>Approximate Optimal Control of the Compass Gait on Rough Terrain</i> , pp. 1258-1263.	MIT Massachusetts Inst. of Tech.
Byl, Katie Tedrake, Russ	
17:20-17:40	WeC10.5

Simulated Regulator to Synthesize ZMP Manipulation and Foot Location for Autonomous Control of Biped Robots, pp. 1264-1269.
 Sugihara, Tomomichi Kyushu Univ.
 17:40-18:00 WeC10.6
Experimental Comparison of Several Posture Estimation Solutions for Biped Robot RABBIT, pp. 1270-1275.
 Aoustin, Yannick CNRS
 Plestan, Franck Ec. Centrale De Nantes-CNRS
 Lebastard, Vincent Ec. Centrale nantes

WeC11 212

Kinematic and Force Calibration (Regular Sessions)

Chair: Liu, Peter X. Carleton Univ.
 Co-Chair: Johansson, Rolf LTH, Lund Univ.
 16:00-16:20 WeC11.1
Active Robot Calibration Algorithm, pp. 1276-1281.
 Sun, Yu Univ. of Utah
 Hollerbach, John Univ. of Utah
 16:20-16:40 WeC11.2
Automatic Kinematic Calibration of a Modular Gantry-Tau Parallel Robot from a Kinematics Point of View, pp. 1282-1287.
 Dressler, Isolde LTH, Lund Univ.
 Robertsson, Anders LTH, Lund Univ.
 Johansson, Rolf LTH, Lund Univ.
 16:40-17:00 WeC11.3
Kinematic Calibration of a 7-DOF Self-Calibrated Modular Cable-Driven Robotic Arm, pp. 1288-1293.
 Mustafa, Shabbir Kurbanhusen Singapore Inst. of Manufacturing Tech.
 Yang, Guilin Singapore Inst. of Manufacturing Tech.
 Yeo, Song Huat Nanyang Tech. Univ.
 Lin, Wei SIMTech
 17:00-17:20 WeC11.4
Elasto-Geometrical Modelling of Closed-Loop Industrial Robots Used for Machining Applications, pp. 1294-1300.
 Marie, Stephane INSA of Rennes
 Maurine, Patrick INSA of Rennes
 17:20-17:40 WeC11.5
A Novel Method for In-Situ Calibration of a 2-Dof Force Platform for Tremor Detection in Small-Sized Animal Models, pp. 1301-1305.
 Cavallo, Giuseppe Campus Bio-Medico Univ.
 Campolo, Domenico Campus Bio-Medico Univ.
 Fogliani, Giuseppe Univ. Campus Bio-Medico di Roma
 Guglielmelli, Eugenio Univ. Campus Bio-Medico
 17:40-18:00 WeC11.6
Factorization-Based Calibration Method for MEMS Inertial Measurement Unit, pp. 1306-1311.
 Hwangbo, Myung Carnegie Mellon Univ.
 Kanade, Takeo Carnegie Mellon Univ.

WeC12 214

Physical Human-Robot Interaction (Regular Sessions)

Chair: Hashtrudi-Zaad, Keyvan Queen's Univ.
 Co-Chair: Bayro-Corrochano, Eduardo-Jose CINVESTAV, Unidad Guadalajara
 16:00-16:20 WeC12.1
Geometric Techniques for Visually Guided Grasping, pp. 1312-1317.
 Zamora-Esquivel, Julio CINVESTAV del IPN, Unidad Guadalajara
 Bayro-Corrochano, Eduardo-Jose CINVESTAV, Unidad Guadalajara
 16:20-16:40 WeC12.2
On the Kinematics of Human Wrist During Pointing Tasks with Application to Motor Rehabilitation, pp. 1318-1323.
 Campolo, Domenico Campus Bio-Medico Univ.
 Accoto, Dino Univ. Campus Bio-Medico
 Taffoni, Fabrizio Campus Bio-Medico Univ.
 Guglielmelli, Eugenio Univ. Campus Bio-Medico
 16:40-17:00 WeC12.3
An Explicit Model to Predict and Interpret Constraint Force Creation in Phri with Exoskeletons, pp. 1324-1330.
 Schiele, Andre European Space Agency
 17:00-17:20 WeC12.4
The Role of the Robot Mass and Velocity in Physical Human-Robot Interaction - Part I: Non-Constrained Blunt Impacts, pp. 1331-1338.
 Attachment
 Haddadin, Sami German Aerospace Center (DLR)
 Albu-Schäffer, Alin DLR - German Aerospace Center
 Hirzinger, Gerd German Aerospace Center (DLR)
 17:20-17:40 WeC12.5
The Role of the Robot Mass and Velocity in Physical Human-Robot Interaction - Part II: Constrained Blunt Impacts, pp. 1339-1345.
 Attachment
 Haddadin, Sami German Aerospace Center (DLR)
 Albu-Schäffer, Alin DLR - German Aerospace Center
 Frommberger, Mirko German Aerospace Center (DLR)

Hirzinger, Gerd	German Aerospace Center (DLR)
17:40-18:00	WeC12.6
<i>Variable Motion Characteristics Control of an Object by Multiple Passive Mobile Robots in Cooperation with a Human</i> , pp. 1346-1351.	
Hirata, Yasuhisa	Tohoku Univ.
Ojima, Yosuke	Tohoku Univ.
Kosuge, Kazuhiro	Tohoku Univ.

ThA1 101

Planning Algorithms (Regular Sessions)

Chair: Akella, Srinivas	Rensselaer Pol. Inst.
Co-Chair: Cheng, Peng	Univ. of Pennsylvania
08:40-09:00	ThA1.1
<i>Adapting the Wavefront Expansion in Presence of Strong Currents</i> , pp. 1352-1358.	
Soulignac, Michael	U of Nice Sophia Antipolis-THALES
Taillibert, Patrick	THALES
Rueher, Michel	Univ. of Nice Sophia Antipolis
09:00-09:20	ThA1.2
<i>Path and Trajectory Diversity: Theory and Algorithms</i> , pp. 1359-1364.	
Branicky, Michael	Case Western Res. Univ.
Knepper, Ross A	Carnegie Mellon Univ.
Kuffner, James	Carnegie Mellon Univ.
09:20-09:40	ThA1.3
<i>Duration Prediction for Proactive Replanning</i> , pp. 1365-1371.	
Sellner, Brennan	Carnegie Mellon Univ.
Simmons, Reid	Carnegie Mellon Univ.
09:40-10:00	ThA1.4
<i>Using Hierarchical Binary Petri Nets to Build Robust Mobile Robot Applications: RoboGraph</i> , pp. 1372-1377.	
López Fernández, Joaquín	Univ. of Vigo
Sanz, Rafael	Univ. of Vigo
Paz Domonte, Enrique	Univ. of Vigo
Alonso Lorenzo, Carlos, Carlos Alonso	Univ. of Vigo
10:00-10:20	ThA1.5
<i>Minimum Time Point Assignment for Coverage by Two Constrained Robots</i> , pp. 1378-1383.	
Chakraborty, Nilanjan	Rensselaer Pol. Inst.
Akella, Srinivas	Rensselaer Pol. Inst.
Wen, John	Rensselaer Pol. Inst.
10:20-10:40	ThA1.6
<i>An Almost Communication-Less Approach to Task Allocation for Multiple Unmanned Aerial Vehicles</i> , pp. 1384-1389.	
Cheng, Peng	Univ. of Pennsylvania
Kumar, Vijay	Univ. of Pennsylvania

ThA2 102

Visual Calibration (Regular Sessions)

Chair: Papanikolopoulos, Nikos	Univ. of Minnesota
Co-Chair: Forssen, Per-Erik	Linköping Univ.
08:40-09:00	ThA2.1
<i>Accurate Calibration of Intrinsic Camera Parameters by Observing Parallel Light Pairs</i> , pp. 1390-1397.	
Sagawa, Ryusuke	Osaka Univ.
Yagi, Yasushi	Osaka Univ.
09:00-09:20	ThA2.2
<i>More Accurate Camera and Hand-Eye Calibrations with Unknown Grid Pattern Dimensions</i> , pp. 1398-1405.	
Strobl, Klaus H.	German Aerospace Center (DLR)
Hirzinger, Gerd	German Aerospace Center (DLR)
09:20-09:40	ThA2.3
<i>Nonlinear and Geometric Optimization Methods for LADAR Calibration</i> , pp. 1406-1411.	
Guerreiro, Bruno Joao Nogueira	Inst. Superior Tecnico
Silvestre, Carlos Jorge Ferreira Silvestre	Inst. Superior Tecnico
Oliveira, Paulo Jorge Ramalho	ISR- Inst. of Systems and Robotics - IST-Tech.
Vasconcelos, José	Inst. Superior Técnico - IST501507930
09:40-10:00	ThA2.4
<i>Calibration of Distributed Vision Network in Unified Coordinate System by Mobile Robots</i> , pp. 1412-1417.	
Yokoya, Tsuyoshi	Kyushu Univ.
Hasegawa, Tsutomu	Kyushu Univ.
Kurazume, Ryo	Kyushu Univ.

10:00-10:20		ThA2.5
<i>Geometric Hand-Eye Calibration for an Endoscopic Neurosurgery System</i> , pp. 1418-1423.		
Rivera-Rovelo, Jorge	CINVESTAV del IPN, Unidad Guadalajara	
Herold-Garcia, Silena	Univ. de Santiago	
Bayro-Corrochano, Eduardo-Jose	CINVESTAV, Unidad Guadalajara	
10:20-10:40		ThA2.6
<i>An Easy Calibration for Oblique-Viewing Endoscopes</i> , pp. 1424-1429.		
Wu, Chenyu	School of Computer Science, Carnegie Mellon Univ.	
Jaramaz, Branislav	School of Computer Science, Carnegie Mellon Univ.	

ThA3		103
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Range-Only and Bearing-Only SLAM (Regular Sessions)	
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Chair: Kantor, George	Carnegie Mellon Univ.
Co-Chair: Hover, Franz	MIT
08:40-09:00	ThA3.1
<i>Tracking a Moving Target in Cluttered Environments with Ranging Radios</i> , pp. 1430-1435. Attachment	
Hollinger, Geoffrey	Carnegie Mellon Univ.
Djugash, Joseph	Carnegie Mellon Univ.
Singh, Sanjiv	Carnegie Mellon Univ.
09:00-09:20	ThA3.2
<i>A Pure Probabilistic Approach to Range-Only SLAM</i> , pp. 1436-1441. Attachment	
Blanco, Jose-Luis	Univ. of Malaga
Gonzalez, Javier	Univ. of Malaga
Fernandez-Madriral, Juan-Antonio	Univ. of Malaga
09:20-09:40	ThA3.3
<i>Iterated Filters for Bearing-Only SLAM</i> , pp. 1442-1448.	
Tully, Stephen	Carnegie Mellon Univ.
Moon, Hyungpil	SungKyunKwan Univ.
Kantor, George	Carnegie Mellon Univ.
Choset, Howie	Carnegie Mellon Univ.
09:40-10:00	ThA3.4
<i>Bearing-Only Mapping by Sequential Triangulation and Multi-Dimensional Scaling</i> , pp. 1449-1454.	
Yairi, Takehisa	Univ. of Tokyo
Kanazaki, Hirofumi	Tokyo Univ.
10:00-10:20	ThA3.5
<i>SLAM in a Dynamic Large Outdoor Environment Using a Laser Scanner</i> , pp. 1455-1462. Attachment	
Zhao, Huijing	Peking Univ.
Chiba, Masaki	Mazda Motor Corp.
Shibasaki, Ryosuke	Univ. of Tokyo
Shao, Xiaowei	Univ. of Tokyo
Cui, Jinshi	Peking Univ.
Zha, Hongbin	Peking Univ.
10:20-10:40	ThA3.6
<i>SLAM for Autonomous Ship Hull Inspection Using Exactly Sparse Extended Information Filters</i> , pp. 1463-1470.	
Walter, Matthew	MIT
Hover, Franz	MIT
Leonard, John	MIT

ThA4		104
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Swarm Approaches to Cooperative Manipulation (Invited Sessions)	
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Chair: Esposito, Joel	US Naval Acad.
Co-Chair: Shen, Wei-Min	USC Information Science Inst.
Organizer: Esposito, Joel	US Naval Acad.
08:40-09:00	ThA4.1
<i>Multi-Robot Manipulation Via Caging in Environments with Obstacles (I)</i> , pp. 1471-1476. Attachment	
Fink, Jonathan	Univ. of Pennsylvania
Hsieh, M. Ani	Swarthmore Coll.
Kumar, Vijay	Univ. of Pennsylvania
09:00-09:20	ThA4.2
<i>Self Assembly of Modular Manipulators with Active and Passive Modules (I)</i> , pp. 1477-1482.	
Yun, Seung-kook	MIT
Rus, Daniela	MIT
09:20-09:40	ThA4.3
<i>Adaptive Cooperative Manipulation with Intermittent Contact (I)</i> , pp. 1483-1488.	
Murphey, Todd	Univ. of Colorado
Horowitz, Matanya	Univ. of Colorado Boulder
09:40-10:00	ThA4.4
<i>Distributed Grasp Synthesis for Swarm Manipulation with Applications to Autonomous Tugboats (I)</i> , pp. 1489-1494.	
Esposito, Joel	US Naval Acad.
10:00-10:20	ThA4.5

<i>Swarm-Based Object Manipulation Using Redundant Manipulator Analogs (I)</i> , pp. 1495-1500. Bishop, Bradley	United States Naval Acad. ThA4.6
10:20-10:40 <i>Cooperative Manipulation on the Water Using a Swarm of Autonomous Tugboats (I)</i> , pp. 1501-1506. Esposito, Joel Feemster, Matthew Smith, Erik	US Naval Acad. United States Naval Acad. Univ. of Pennsylvania

ThA5 105

Connectivity Constrained Multi-Robot Systems (Regular Sessions)

Chair: Isler, Volkan Co-Chair: Gerkey, Brian	Rensselaer Pol. Inst. SRI, International
08:40-09:00 <i>Decentralized Connectivity Maintenance in Mobile Networks with Bounded Inputs</i> , pp. 1507-1512. Dimarogonas, Dimos Johansson, Karl H.	ThA5.1 Royal Inst. of Tech. Royal Inst. of Tech.
09:00-09:20 <i>Robotic Routers</i> , pp. 1513-1518. Tekdas, Onur Isler, Volkan	ThA5.2 Rensselaer Pol. Inst. Rensselaer Pol. Inst.
09:20-09:40 <i>Communication-Aware Trajectory Tracking</i> , pp. 1519-1524. Lindhé, Magnus Johansson, Karl H.	ThA5.3 EE, KTH Royal Inst. of Tech.
09:40-10:00 <i>Connectivity Management in Mobile Robot Teams</i> , pp. 1525-1530. Stump, Ethan Jadbabaie, Ali Kumar, Vijay	ThA5.4 Univ. of Pennsylvania Univ. of Pennsylvania Univ. of Pennsylvania
10:00-10:20 <i>Multi-Robot Routing under Limited Communication Range</i> , pp. 1531-1536. Attachment Mosteo, Alejandro Montano, Luis Lagoudakis, Michail	ThA5.5 Univ. de Zaragoza Univ. de Zaragoza Tech. Univ. of Crete
10:20-10:40 <i>Preprocessing Technique to Signal Strength Data of Wireless Sensor Network for Real-Time Distance Estimation</i> , pp. 1537-1542. Cabrera-Mora, Flavio Xiao, Jizhong	ThA5.6 The City Univ. of New York City Coll. of New York

ThA6 206

Control of Parallel Manipulators (Regular Sessions)

Chair: Nagai, Kiyoshi Co-Chair: Andreff, Nicolas	Ritsumeikan Univ. Univ. Blaise Pascal
08:40-09:00 <i>A Systematic Approach to Stiffness Analysis of Parallel Mechanisms</i> , pp. 1543-1548. Nagai, Kiyoshi Liu, Zhengyong	ThA6.1 Ritsumeikan Univ. Ritsumeikan Univ.
09:00-09:20 <i>On the Dynamic Properties and Optimum Control of Parallel Manipulators in the Presence of Singularity</i> , pp. 1549-1555. Briot, Sébastien Arakelian, Vigen	ThA6.2 École de Tech. supérieure (ÉTS) I.N.S.A. (National Inst. of Applied Sciences)
09:20-09:40 <i>A Vision-Based Computed Torque Control for Parallel Kinematic Machines</i> , pp. 1556-1561. Paccot, Flavien Lemoine, Philippe Andreff, Nicolas Chablat, Damien Martinet, Philippe	ThA6.3 LASMEA Ec. Centrale de Nantes Univ. Blaise Pascal IRCCyN Blaise Pascal Univ.
09:40-10:00 <i>Stiffness Analysis of 3-D.o.f. Overconstrained Translational Parallel Manipulators</i> , pp. 1562-1567. Pashkevich, Anatoly Chablat, Damien Wenger, Philippe	ThA6.4 Univ. IRCCyN Ec. Centrale de Nantes
10:00-10:20 <i>Automatic Detection of Assembly Mode for a Triglides-Robot</i> , pp. 1568-1575. Budde, Christoph Rose, Michael Maass, Jochen Raatz, Annika	ThA6.5 Tech. Univ. Braunschweig German Aerospace Center Tech. Univ. Braunschweig Tech. Univ. Braunschweig

ThA7 207

Bio-Inspired and Biomedical Robotics (Regular Sessions)

Chair: Wood, Robert	Harvard Univ.
Co-Chair: Burdick, Joel	California Inst. of Tech.
08:40-09:00	ThA7.1
<i>A System for Motion Control and Analysis of High-Speed Passively Twisting Flapping Wings</i> , pp. 1576-1581.	
Watman, Daniel	Univ. of New South Wales
Furukawa, Tomonari	Univ. of New South Wales
09:00-09:20	ThA7.2
<i>Sensorimotor Coupling Via Dynamic Bayesian Networks</i> , pp. 1582-1587.	
Coen Cagli, Ruben	Albert Einstein Coll. of Medicine, Yeshiva Univ.
Napoletano, Paolo	Univ. di Salerno
Coraggio, Paolo	Univ. degli Studi di Napoli Federico II
Boccignone, Giuseppe	Univ. di Salerno
De Santis, Agostino	Univ. di Napoli Federico II
09:20-09:40	ThA7.3
<i>A Study of the Leg-Swing Motion of Passive Walking</i> , pp. 1588-1593.	
Ikemata, Yoshito	Nagoya Inst. of Tech.
Yasuhara, Kiyoshi	Nagoya Inst. of Tech.
Sano, Akihito	Nagoya Inst. of Tech.
Fujimoto, Hideo	Nagoya Inst. of Tech.
09:40-10:00	ThA7.4
<i>A Miniature Robot for Isolating and Tracking Neurons in Extracellular Cortical Recordings</i> , pp. 1594-1601.	
Wolf, Michael	California Inst. of Tech.
Cham, Jorge	Caltech
Branchaud, Edward	Caltech
Burdick, Joel	California Inst. of Tech.
10:00-10:20	ThA7.5
<i>Macromodel for the Mechanics of Gecko Hair Adhesion</i> , pp. 1602-1607.	
Reyes, Michael	Univ. of California, Davis
Fearing, Ron	Univ. of California at Berkeley
10:20-10:40	ThA7.6
<i>Object Dynamics Prediction and Motion Generation Based on Reliable Predictability</i> , pp. 1608-1614.	
Nishide, Shun	Kyoto Univ.
Ogata, Tetsuya	Kyoto Univ.
Yokoya, Ryunosuke	Kyoto Univ.
Tani, Jun	Riken
Komatani, Kazunori	Kyoto Univ.
Okuno, Hiroshi G.	Kyoto Univ.

ThA8

208

Grasping and Tactile Sensing (Regular Sessions)

Chair: Morel, Guillaume	Univ. Pierre et Marie Curie - Paris 6
Co-Chair: Hollerbach, John	Univ. of Utah
08:40-09:00	ThA8.1
<i>Three-Dimensional Object Manipulation by Two Robot Fingers with Soft Tips and Minimum D.O.F.</i> , pp. 1615-1621. Attachment	
Yoshida, Morio	RIKEN
Arimoto, Suguru	Ritsumeikan Univ.
Luo, Zhi-Wei	The Inst. of Physical and Chemical Res. (RIKEN)
09:00-09:20	ThA8.2
<i>Independent Contact Regions for Frictional Grasps on 3D Objects</i> , pp. 1622-1627.	
Roa, Maximo	Tech. Univ. of Catalonia
Suarez, Raul	Tech. Univ. of Catalonia
09:20-09:40	ThA8.3
<i>Minimum Volume Bounding Box Decomposition for Shape Approximation in Robot Grasping</i> , pp. 1628-1633. Attachment	
Huebner, Kai	Royal Inst. of Tech. (KTH), Stockholm
Ruthotto, Steffen	Univ. of Koblenz
Kragic, Danica	School of Computer Science and Communication, KTH
09:40-10:00	ThA8.4
<i>Finding All Valid Hand Configurations for a Given Precision Grasp</i> , pp. 1634-1640. Attachment	
Rosales, Carlos	Tech. Univ. of Catalonia
Porta, Josep M	UPC-CSIC
Suarez, Raul	Tech. Univ. of Catalonia
Ros, Lluís	UPC-CSIC
10:00-10:20	ThA8.5
<i>A Decision Method for the Placement of Tactile Sensors for Manipulation Task Recognition</i> , pp. 1641-1646.	
Matsuo, Kazuya	Kyushu Univ.
Murakami, Kouji	Kyushu Univ.
Hasegawa, Tsutomu	Kyushu Univ.
Kurazume, Ryo	Kyushu Univ.
10:20-10:40	ThA8.6

ThA9		209
Design and Control of Mobile Robots (Regular Sessions)		
Chair: Yuta, Shinichi		Univ. of Tsukuba
Co-Chair: Fiorini, Paolo		Univ. of Verona
08:40-09:00		ThA9.1
<i>Trajectory Tracking Control of Omnidirectional Wheeled Mobile Manipulators: Robust Neural Network Based Sliding Mode Approach</i> , pp. 1653-1658.		
Xu, Dong		Inst. of Automation
Zhao, Dongbin		Chinese Acad. of Sciences
Yi, Jianqiang		Inst. of Automation, Chinese Acad.
Tan, Xiangmin		Inst. of Automation
Chen, Zonghai		Univ. of Sciences and Tech. of China
09:00-09:20		ThA9.2
<i>Navigation of an Omni-Directional Mobile Robot with Active Caster Wheels</i> , pp. 1659-1665. Attachment		
Jung, Eui-jung		Hanyang Univ.
Yi, Byung-Ju		Hanayang Univ.
Kim, Whee Kuk		Korea Univ.
Lee, Jae Hoon		AIST
Lee, Ho Yul		Hanyang Univ.
Yuta, Shinichi		Univ. of Tsukuba
09:20-09:40		ThA9.3
<i>Design of an Omnidirectional Mobile Robot for Rough Terrain</i> , pp. 1666-1671.		
Udengaard, Martin		MIT
Iagnemma, Karl		MIT
09:40-10:00		ThA9.4
<i>Practical Construction and Position Control of a Modular Actuated Holonomic Wheeled Mobile Robot</i> , pp. 1672-1677.		
El-Shenawy, Ahmed Khamies		Univ. of Mannheim
Wagner, Achim		Univ. of Mannheim
Badreddin, Essameddin		Univ. of Mannheim
10:00-10:20		ThA9.5
<i>Nonlinear Predictive Control of an Omnidirectional Robot Dribbling a Rolling Ball</i> , pp. 1678-1683.		
Li, Xiang		Univ. of Tübingen
Zell, Andreas		Univ. of Tübingen
10:20-10:40		ThA9.6
<i>Efficient Airport Snow Shoveling by Applying Autonomous Multi-Vehicle Formations</i> , pp. 1684-1690.		
Saska, Martin		Univ. of Wuerzburg
Hess, Martin		Univ. of Wuerzburg
Schilling, Klaus		Univ. of Würzburg
ThA10		211
Human Detection and Tracking (Regular Sessions)		
Chair: Howard, Andrew		JPL
Co-Chair: Kulic, Dana		Univ. of Tokyo
08:40-09:00		ThA10.1
<i>Human Detection Using Iterative Feature Selection and Logistic Principal Component Analysis</i> , pp. 1691-1697.		
Abd-Almageed, Wael		Univ. of Maryland
Davis, Larry		Univ. of Maryland
09:00-09:20		ThA10.2
<i>Human Tracking and Segmentation Supported by Silhouette-Based Gait Recognition</i> , pp. 1698-1703.		
Wang, Junqiu		OSAKA Univ.
Makihara, Yasushi		OSAKA Univ.
Yagi, Yasushi		Osaka Univ.
09:20-09:40		ThA10.3
<i>Modeling and Recognition of Actions through Motor Primitives</i> , pp. 1704-1709.		
Kragic, Danica		School of Computer Science and Communication, KTH
Martínez Mercado, David		KTH - Royal Inst. of Tech.
09:40-10:00		ThA10.4
<i>Efficient People Tracking in Laser Range Data Using a Multi-Hypothesis Leg-Tracker with Adaptive Occlusion Probabilities</i> , pp. 1710-1715.		
Arras, Kai Oliver		Univ. of Freiburg
Grzonka, Slawomir		Albert-Ludwigs-Univ. of Freiburg
Luber, Matthias		Univ. of Freiburg
Burgard, Wolfram		Univ. of Freiburg
10:00-10:20		ThA10.5
<i>Detecting and Tracking of 3D Face Pose for Human-Robot Interaction</i> , pp. 1716-1721. Attachment		
Domaika, Fadi		Inst. Géographique National
Raducanu, Bogdan		Computer Vision Center
10:20-10:40		ThA10.6
<i>Missing Motion Data Recovery Using Factorial Hidden Markov Models</i> , pp. 1722-1728.		

Lee, Dongheui Nakamura, Yoshihiko Kulic, Dana	Univ. of Tokyo Univ. of Tokyo Univ. of Tokyo
ThA11	212
Compliant Joints for Safe Robots (Regular Sessions)	
Chair: Kang, Sungchul Co-Chair: Melchiorri, Claudio	Korea Inst. of Science and Tech. Univ. of Bologna
08:40-09:00 <i>Torque-Position Transformer for Task Control of Position Controlled Robots</i> , pp. 1729-1734. Attachment	ThA11.1
Khatib, Oussama Thaulad, Peter Yoshikawa, Taizo Park, Jaeheung	Stanford Univ. Stanford Honda Res. Inst. USA, Inc. Stanford Univ.
09:00-09:20 <i>Torque Transmission Mechanism with Nonlinear Passive Stiffness Using Mechanical Singularity</i> , pp. 1735-1740. Attachment	ThA11.2
Okada, Masafumi Kino, Shintaro	Tokyo Inst. of Tech. Tokyo Tech.
09:20-09:40 <i>A New Variable Stiffness Design: Matching Requirements of the Next Robot Generation</i> , pp. 1741-1746. Attachment	ThA11.3
Wolf, Sebastian Hirzinger, Gerd	DLR - German Aerospace Center German Aerospace Center (DLR)
09:40-10:00 <i>A Hybrid Actuation Approach for Human-Friendly Robot Design</i> , pp. 1747-1752. Attachment	ThA11.4
Shin, Dongjun Sardellitti, Irene Khatib, Oussama	Stanford Univ. Scuola Superiore Sant' Anna Stanford Univ.
10:00-10:20 <i>On the Feedback Linearization of Robots with Variable Joint Stiffness</i> , pp. 1753-1759.	ThA11.5
Palli, Gianluca Melchiorri, Claudio De Luca, Alessandro	Univ. of Bologna Univ. of Bologna Univ. di Roma La Sapienza
10:20-10:40 <i>Design of a Robot Joint with Variable Stiffness</i> , pp. 1760-1765.	ThA11.6
Choi, Junho Park, Sunchul Lee, Woosub Kang, Sung-Chul	Korea Inst. of Science and Tech. Korea Inst. of Science and Tech. Korea Inst. of Science and Tech. Korea Inst. of Sci. and Tech.
ThA12	214
Video Session 1 (Video Sessions)	
Chair: Pollard, Nancy S Co-Chair: Tapus, Adriana	Carnegie Mellon Univ. Univ. of Southern California
08:40-08:50 <i>The OmniTread OT-4 Serpentine Robot</i> , pp. 1766-1767. Attachment	ThA12.1
Borenstein, Johann Borrell, Adam	Univ. of Michigan Univ. of Michigan
08:50-09:00 <i>High-Throughput Fully Automated Microrobotic Zebrafish Embryo Injection</i> , pp. 1768-1769. Attachment	ThA12.2
Wang, Wenhui Liu, Xinyu Sun, Yu	Univ. of Canterbury Univ. of Toronto Univ. of Toronto
09:00-09:10 <i>Magmites - Wireless Resonant Magnetic Microrobots</i> , pp. 1770-1771. Attachment	ThA12.3
Frutiger, Dominic R. Kratochvil, Bradley Vollmers, Karl Nelson, Bradley J.	ETH Zurich Swiss Federal Inst. of Tech. ETH Zurich ETH Zurich
09:10-09:20 <i>CB: Exploring Neuroscience with a Humanoid Research Platform</i> , pp. 1772-1773. Attachment	ThA12.4
Cheng, Gordon Hyon, Sang-Ho Ude, Ales Morimoto, Jun Hale, Joshua G. Hart, Joseph Bentivegna, Darrin Hodgins, Jessica Atkeson, Christopher Mistry, Michael Schaal, Stefan	ATR Computational Neuroscience Lab. ATR Computational Neuroscience Lab. Jozef Stefan Inst. ICORP-JST/ATR-CNS ATR ATR Computational Neuroscience Lab. ATR Computational Neuroscience Lab. Carnegie Mellon Univ. CMU Univ. of Southern California Univ. of Southern California

Nakanishi, Jun Kawato, Mitsuo	ATR/JST-ICORP ATR
09:20-09:30 <i>Learning Capture Points for Bipedal Push Recovery</i> , pp. 1774-1774. Attachment	ThA12.5
Rebula, John Canas, Fabian Pratt, Jerry Goswami, Ambarish	Univ. of Michigan Institute for Human and Machine Cognition Inst. for Human and Machine Cognition Honda Res. Inst.
09:30-09:40 <i>Making Orthogonal Transitions with Climbing Mini-Whegs™</i> , pp. 1775-1776. Attachment	ThA12.6
Wile, Gregory Daltorio, Kathryn A Palmer, Luther Witushynsky, Timothy Southard, Lori Ahmad, Mohd Rasyid Malek, Anas Gorb, Stanislav N Boxerbaum, Alexander Ritzmann, Roy Earl Quinn, Roger, D.	Case Western Res. Univ. Case Western Res. Univ. Case Western Res. Univ. Case Western Res. Univ. Case.Western Res. Univ. Biologically Inspired Case Western Res. Univ. Case Western Res. Univ. Max-Planck-Inst. for Metals Res. Case Western Res. Univ. Case Western Res. Univ. Case Western Res. Univ.
09:40-09:50 <i>A Fast Scale Prototyping Process for Folded Millirobots</i> , pp. 1777-1778. Attachment	ThA12.7
Hoover, Aaron Fearing, Ron	Univ. of California, Berkeley Univ. of California at Berkeley
09:50-10:00 <i>Power Pedals As Man-Machine Synergy Effectors - Bipedal Walking with Human Skill and Robot Power -</i> , pp. 1779-1780. Attachment	ThA12.8
Kanaoka, Katsuya Shirogauchi, Go Nakamura, Haruji	Ritsumeikan Univ. Aivelink Co., Ltd. Protodesign Co., Ltd.
10:00-10:10 <i>Potential Function Control for Multiple High-Speed Nonholonomic Robots</i> , pp. 1781-1782. Attachment	ThA12.9
Wachter, Luke Murphy, John Ray, Laura	Dartmouth Coll. Dartmouth Coll. Dartmouth Coll.
10:10-10:20 <i>Introducing DAGSI Whegs</i> , pp. 1783-1784. Attachment	ThA12.10
Boxerbaum, Alexander Oro, Julio Quinn, Roger, D.	Case Western Res. Univ. Case Western Res. Univ. Case Western Res. Univ.
10:20-10:30 <i>Person Recognition on a Segway Robot: A Video of UT Austin Villa Robocup@Home 2007 Finals Demonstration</i> , pp. 1785-1786. Attachment	ThA12.11
Knox, W. Bradley Lee, Juhyun Stone, Peter	The Univ. of Texas at Austin The Univ. of Texas at Austin Univ. of Texas at Austin

ThPP	Pavilion
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Plenary Session II (Plenary Sessions)	
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Chair: Sukhatme, Gaurav	Univ. of Southern California
Co-Chair: Schaal, Stefan	Univ. of Southern California
11:00-12:00 <i>Flocks and Fleets: Collective Motion and Sensing Networks in Nature and Robotics*</i> .	ThPP.1
Leonard, Naomi	Princeton Univ.

ThB1	101
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Planning with Uncertainty (Regular Sessions)	
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Chair: Koenig, Sven	Univ. of Southern California
Co-Chair: Roy, Nicholas	Massachusetts Inst. of Tech.
13:40-14:00 <i>A Probabilistic Method for Detecting Impending Vehicle Interactions</i> , pp. 1787-1791.	ThB1.1
Worrall, Stewart Nebot, Eduardo	Univ. of Sydney University of Sydney
14:00-14:20 <i>C-Space Characterization of Contact Preserving Paths with Application to Tactile-Sensor Based Mobile Robot Navigation</i> , pp. 1792-1797.	ThB1.2
Rimon, Elon Gabriely, Yoav	Tech. Tech.
14:20-14:40 <i>A Bayesian Framework for Optimal Motion Planning with Uncertainty</i> , pp. 1798-1805.	ThB1.3
Censi, Andrea Calisi, Daniele	California Inst. of Tech. Sapienza Univ. of Rome

De Luca, Alessandro Oriolo, Giuseppe	Univ. di Roma "La Sapienza" Univ. di Roma La Sapienza
14:40-15:00 <i>Replanning with Uncertainty in Position: Sensor Updates vs. Prior Map Updates</i> , pp. 1806-1813.	ThB1.4
Gonzalez, Juan Pablo Stentz, Anthony	General Dynamics Robotic Systems / CMU Carnegie Mellon Univ.
15:00-15:20 <i>Planning in Information Space for a Quadrotor Helicopter in a GPS-Denied Environment</i> , pp. 1814-1820.	ThB1.5
He, Ruijie Prentice, Sam Roy, Nicholas	Massachusetts Inst. of Tech. Massachusetts Inst. of Tech. Massachusetts Inst. of Tech.
15:20-15:40 <i>Probabilistic Localization with a Blind Robot</i> , pp. 1821-1827.	ThB1.6
Erickson, Lawrence Knuth, Joseph O'Kane, Jason LaValle, Steven M	Univ. of Illinois: Urbana-Champaign Univ. of Illinois at Urbana-Champaign Univ. of South Carolina Univ. of Illinois

ThB2

102

Visual Place Recognition (Regular Sessions)

Chair: Itti, Laurent Co-Chair: Lilienthal, Achim, J.	Univ. of Southern California Örebro Univ.
13:40-14:00 <i>Accelerated Appearance-Only SLAM</i> , pp. 1828-1833.	ThB2.1
Cummins, Mark Joseph Newman, Paul	Oxford Univ. Oxford Univ.
14:00-14:20 <i>Particle Filtering for Map-Aided Localization in Sparse GPS Environments</i> , pp. 1834-1841. Attachment	ThB2.2
Miller, Isaac Campbell, Mark	Cornell Univ. Cornell Univ.
14:20-14:40 <i>Real-Time Visual Loop-Closure Detection</i> , pp. 1842-1847. Attachment	ThB2.3
Angeli, Adrien Filliat, David Doncieux, Stéphane Meyer, Jean-Arcady	Univ. Pierre et Marie Curie ENSTA Pierre and Marie Curie Univ. UPMC CNRS
14:40-15:00 <i>Storing and Recalling Information for Vision Localization</i> , pp. 1848-1855.	ThB2.4
Siagian, Christian Itti, Laurent	Univ. of Southern California Univ. of Southern California
15:00-15:20 <i>Incremental Spectral Clustering and Seasons: Appearance-Based Localization in Outdoor Environments</i> , pp. 1856-1861.	ThB2.5
Valgren, Christoffer Lilienthal, Achim	Örebro Univ. Örebro Univ.
15:20-15:40 <i>Place Recognition-Based Fixed-Lag Smoothing for Environments with Unreliable GPS</i> , pp. 1862-1867.	ThB2.6
Mottaghi, Roozbeh Kaess, Michael Ranganathan, Ananth Roberts, Richard Dellaert, Frank	Georgia Inst. of Tech. Georgia Inst. of Tech. Georgia Inst. of Tech. Georgia Inst. of Tech. Georgia Inst. of Tech.

ThB3

103

Slam (Regular Sessions)

Chair: Huang, Shoudong Co-Chair: Konolige, Kurt	Univ. of Tech. Sydney SRI International
13:40-14:00 <i>Exact State and Covariance Sub-Matrix Recovery for Submap Based Sparse EIF SLAM Algorithm</i> , pp. 1868-1873.	ThB3.1
Huang, Shoudong Wang, Zhan Dissanayake, Gamini	Univ. of Tech. Sydney Univ. of Tech. Sydney Univ. of Tech. Sydney (UTS)
14:00-14:20 <i>The Generation of Environmental Map Based on a NDT Grid Mapping -Proposal of Convergence Calculation Corresponding to High Resolution Grid</i> , pp. 1874-1879.	ThB3.2
Kaminade, Takuya Takubo, Tomohito Mae, Yasushi Arai, Tatsuo	Osaka Univ. Osaka Univ. Osaka Univ. Graduate School of Engineering Science, Osaka Univ.
14:20-14:40 <i>Online Constraint Network Optimization for Efficient Maximum Likelihood Map Learning</i> , pp. 1880-1885.	ThB3.3
Grisetti, Giorgio	Unviersität Freiburg

Lodi Rizzini, Dario	Univ. of Parma
Stachniss, Cyrill	Univ. of Freiburg
Olson, Edwin	Massachusetts Inst. of Tech.
Burgard, Wolfram	Univ. of Freiburg
14:40-15:00	ThB3.4
<i>A Region-Based SLAM Algorithm Capturing Metric, Topological, and Semantic Properties</i> , pp. 1886-1891.	
Oberländer, Jan	FZI Forschungszentrum Informatik
Uhl, Klaus	FZI Forschungszentrum Informatik
Zöllner, Johann Marius	FZI Forschungszentrum Informatik
Dillmann, Rüdiger	Univ. of Karlsruhe
15:00-15:20	ThB3.5
<i>New Framework for Simultaneous Localization and Mapping: Multi Map SLAM</i> , pp. 1892-1897.	
Herath, Damith Chandana	Univ. of Tech. Sydney
Kodagoda, Sarath	Univ. of Tech. Sydney
Dissanayake, Gamini	Univ. of Tech. Sydney (UTS)
15:20-15:40	ThB3.6
<i>Active SLAM for Structured Environments</i> , pp. 1898-1903.	
Leung, Cindy	UTS
Huang, Shoudong	Univ. of Tech. Sydney
Dissanayake, Gamini	Univ. of Tech. Sydney (UTS)

ThB4 104

Decentralized Control of Multi-Robot Systems with Collision Avoidance (Regular Sessions)

Chair: Vaughan, Richard	Simon Fraser Univ.
Co-Chair: Murphey, Todd	Univ. of Colorado
13:40-14:00	ThB4.1
<i>No Robot Left Behind: Coordination to Overcome Local Minima in Swarm Navigation</i> , pp. 1904-1909.	
Marcolino, Leandro	Federal Univ. of Minas Gerais
Chaimowicz, Luiz	Federal Univ. of Minas Gerais
14:00-14:20	ThB4.2
<i>Mobile Dynamically Reformable Formations for Efficient Flocking Behavior in Complex Environments</i> , pp. 1910-1915. Attachment	
Sahin, Turker	Gebze Inst. of Tech.
Zergeroglu, Erkan	Gebze Inst. of Tech.
14:20-14:40	ThB4.3
<i>Coordination of Multiple AGVs in an Industrial Application</i> , pp. 1916-1921. Attachment	
Olmi, Roberto	Univ. of Modena and Reggio Emilia
Secchi, Cristian	Univ. of Modena and Reggio Emilia
Fantuzzi, Cesare	Univ. di Modena e Reggio Emilia
14:40-15:00	ThB4.4
<i>Modeling Multi-Robot Interaction Using Generalized Occupancy Grids, with Application to Reducing Spatial Interference</i> , pp. 1922-1927.	
Zuluaga, Mauricio	Simon Fraser Univ.
Vaughan, Richard	Simon Fraser Univ.
15:00-15:20	ThB4.5
<i>Reciprocal Velocity Obstacles for Real-Time Multi-Agent Navigation</i> , pp. 1928-1935. Attachment	
van den Berg, Jur	Univ. of North Carolina
Lin, Ming C.	Univ. of North Carolina
Manocha, Dinesh	Univ. of north carolina at chapel hill
15:20-15:40	ThB4.6
<i>Decentralized Feedback Controllers for Multi-Agent Teams in Environments with Obstacles</i> , pp. 1936-1941. Attachment	
Ayanian, Nora	Univ. of Pennsylvania
Kumar, Vijay	Univ. of Pennsylvania

ThB5 105

Multi-Robot Systems with Kinematic or Dynamic Constraints (Regular Sessions)

Chair: Kyriakopoulos, Kostas	National Tech. Univ. of Athens
Co-Chair: Chung, Timothy H.	Naval Postgraduate School
13:40-14:00	ThB5.1
<i>Pareto Optimal Multi-Robot Coordination with Acceleration Constraints</i> , pp. 1942-1947.	
Jung, Jae Bum	Univ. of Illinois
Ghrist, Robert	Univ. of Illinois
14:00-14:20	ThB5.2
<i>Control of Swarms Based on Hydrodynamic Models</i> , pp. 1948-1953.	
Pimenta, Luciano	Univ. Federal de Minas Gerais
Michael, Nathan	Univ. of Pennsylvania
Mesquita, Renato	Univ. Federal de Minas Gerais
Pereira, Guilherme	Univ. Federal de Minas Gerais
Kumar, Vijay	Univ. of Pennsylvania
14:20-14:40	ThB5.3
<i>Consensus of Multiple Uncertain Mechanical Systems and Its Application in Cooperative Control of Mobile Robots</i> , pp. 1954-1959.	
Dong, Wenjie	Univ. of California, Riverside
Farrell, Jay	Univ. of California, Riverside

14:40-15:00		ThB5.4
<i>Network-Based Intelligent Space Approach for Car-Like Mobile Robots by Fuzzy Decentralized Variable Structure Control</i> , pp. 1960-1965.		
	Hwang, Chih-Lyang	Tamkang Univ.
15:00-15:20		ThB5.5
<i>Formation Path Following Control of Unicycle-Type Mobile Robots</i> , pp. 1966-1972.		
	Ghommam, Jawhar	Orléans
	Maarouf, Saad	École de Tech. supérieure
	Mnif, Faïçal	École Nationale d'Ingénieurs de Sfax
15:20-15:40		ThB5.6
<i>Inverse Agreement Algorithms with Application to Swarm Dispersion for Multiple Nonholonomic Agents</i> , pp. 1973-1978.		
	Dimarogonas, Dimos	Royal Inst. of Tech.
	Kyriakopoulos, Kostas	National Tech. Univ. of Athens

ThB6		206
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Inverse Kinematics and Redundancy (Regular Sessions)

	Chair: Antonelli, Gianluca	Univ. degli Studi di Cassino
	Co-Chair: Nakamura, Yoshihiko	Univ. of Tokyo
13:40-14:00		ThB6.1
<i>Trajectory Inverse Kinematics by Conditional Density Modes</i> , pp. 1979-1986.		
	Qin, Chao	Univ. of California, Merced
	Carreira-Perpinan, Miguel	Univ. of California, Merced
14:00-14:20		ThB6.2
<i>An Analytical Algorithm with Minimum Joint Velocity Jump for Redundant Robots in the Presence of Locked-Joint Failures</i> , pp. 1987-1992.		
	Zhao, Jing	Beijing Univ. of Tech.
	Li, Qian	Beijing Univ. of Tech.
14:20-14:40		ThB6.3
<i>Stability Analysis for Prioritized Closed-Loop Inverse Kinematic Algorithms for Redundant Robotic Systems</i> , pp. 1993-1998.		
	Antonelli, Gianluca	Univ. degli Studi di Cassino
14:40-15:00		ThB6.4
<i>Resolving the Problem of Non-Integrability of Nullspace Velocities for Compliance Control of Redundant Manipulators by Using Semi-Definite Lyapunov Functions</i> , pp. 1999-2004.		
	Ott, Christian	Univ. of Tokyo
	Kugi, Andreas	Vienna Univ. of Tech.
	Nakamura, Yoshihiko	Univ. of Tokyo
15:00-15:20		ThB6.5
<i>Inverse Kinematics without Matrix Inversion</i> , pp. 2005-2012.		
	Pechev, Alexandre	Univ. of Surrey
15:20-15:40		ThB6.6
<i>Singularity Avoidance by Inputting Angular Velocity to a Redundant Axis During Cooperative Control of a Teleoperated Dual-Arm Robot</i> , pp. 2013-2018.		
	Hayakawa, Masanori	Tohoku Univ.
	Hara, Keiko	Tohoku Univ.
	Sato, Daisuke	Musashi Inst. of Tech.
	Konno, Atsushi	Tohoku Univ.
	Uchiyama, Masaru	Tohoku Univ.

ThB7		207
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Rehabilitation Robotics I (Regular Sessions)

	Chair: Guglielmelli, Eugenio	Univ. Campus Bio-Medico
	Co-Chair: Schweighofer, Nicolas	USC
13:40-14:00		ThB7.1
<i>Intelligent Shoes for Abnormal Gait Detection</i> , pp. 2019-2024.		
	Chen, Meng	The Chinese Univ. of Hong Kong
	Huang, Bufu	The Chinese Univ. of Hong Kong
	Xu, Yangsheng	The Chinese Univ. of Hong Kong
14:00-14:20		ThB7.2
<i>Design, Implementation and Test Results of a Robust Control Method for a Powered Ankle Foot Orthosis (AFO)</i> , pp. 2025-2030.		
	Boehler, Alexander	Arizona State Univ.
	Hollander, Kevin	Augspurger-Komm Engineering, Inc.
	Sugar, Thomas	Arizona State Univ.
	Shin, Dosun	Arizona State Univ.
14:20-14:40		ThB7.3
<i>Design of a Planar Robotic Machine for Neuro-Rehabilitation</i> , pp. 2031-2036.		
	Zollo, Loredana	Univ. Campus Bio-Medico
	Accoto, Dino	Univ. Campus Bio-Medico
	Torchiani, Francesco	Univ. Campus Bio-Medico
	Formica, Domenico	Univ. Campus Bio-medico
	Guglielmelli, Eugenio	Univ. Campus Bio-Medico
14:40-15:00		ThB7.4
<i>An Exoskeleton for Gait Rehabilitation: Prototype Design and Control Principle</i> , pp. 2037-2042.		

Beyl, Pieter	Vrije Univ. Brussel
Van Damme, Michaël	Vrije Univ. Brussel
Van Ham, Ronald	Vrije Univ. Brussel
Versluys, Rino	Vrije Univ. Brussel
Vanderborght, Bram	Vrije Univ. Brussel
Lefeber, Dirk	Vrije Univ. Brussel
15:00-15:20	ThB7.5
<i>Target Prediction for Icon Clicking by Athetoid Persons</i> , pp. 2043-2048.	
Olds, Kevin	Dartmouth Coll.
Sibenaller, Sara	Univ. of Pittsburgh
Cooper, Rory	Univ. of Pittsburgh
Ding, Dan	Univ. of Pittsburgh
Riviere, Cameron	Carnegie Mellon Univ.
15:20-15:40	ThB7.6
<i>Nonlinear Identification of Skeletal Muscle Dynamics with Sigma-Point Kalman Filter for Model-Based FES</i> , pp. 2049-2054.	
Hayashibe, Mitsuhiro	INRIA Sophia-Antipolis
Poignet, Philippe	LIRMM UMR 5506 CNRS UM2
Guiraud, David	INRIA
Makssoud, Hassan	IRDPO
ThB8	208
Haptic Displays and Interfaces (Regular Sessions)	
Chair: O'Malley, Marcia	Rice Univ.
Co-Chair: Xiao, Jing	UNC-Charlotte
13:40-14:00	ThB8.1
<i>A Haptic Control Interface for a Motorized Exercise Machine</i> , pp. 2055-2060.	
Carignan, Craig	Georgetown Univ. ISIS Center
Tang, Jonathan	Georgetown Univ.
14:00-14:20	ThB8.2
<i>Perception of Haptic Force Magnitude During Hand Movements</i> , pp. 2061-2066.	
Yang, Xing Dong	The Univ. of Alberta
Bischof, Walter	The Univ. of Alberta
Boulanger, Pierre	The Univ. of Alberta
14:20-14:40	ThB8.3
<i>Displaying Feeling of Cutting by a Micro-Scissors Type Haptic Device</i> , pp. 2067-2072.	
Fujino, Shohei	Tohoku Univ.
Sato, Daisuke	Musashi Inst. of Tech.
Abe, Koyu	Tohoku Univ.
Konno, Atsushi	Tohoku Univ.
Uchiyama, Masaru	Tohoku Univ.
14:40-15:00	ThB8.4
<i>Path Guidance for a Safer Large Scale Dissipative Haptic Display</i> , pp. 2073-2078.	
Dellon, Brian	Carnegie Mellon Univ.
Matsuoka, Yoky	Univ. of Washington
15:00-15:20	ThB8.5
<i>A Passive Force Amplifier</i> , pp. 2079-2084.	
Cagneau, Barthélemy	Univ. Pierre et Marie Curie, Paris6
Morel, Guillaume	Univ. Pierre et Marie Curie - Paris 6
Bellot, Delphine	Univ. Pierre et Marie Curie - Paris 6
Zemiti, Nabil	Univ. Pierre et Marie Curie (Paris 6)
D'Agostino, Gianluca	Federico II
15:20-15:40	ThB8.6
<i>Control of a Mobile Haptic Interface</i> , pp. 2085-2090.	
Unterhinninghofen, Ulrich	Tech. Univ. München
Schauß, Thomas	Tech. Univ. München
Buss, Martin	Tech. Univ. Muenchen
ThB9	209
Mobile Robot Calibration (Regular Sessions)	
Chair: Tunstel, Edward	JHU Applied Physics Lab.
Co-Chair: Chung, Wan Kyun	POSTECH
13:40-14:00	ThB9.1
<i>Simultaneous Learning of Motion and Sensor Model Parameters for Mobile Robots</i> , pp. 2091-2097.	
Yap, Teddy Jr.	Univ. of California, Riverside
Shelton, Christian	Univ. of California at Riverside
14:00-14:20	ThB9.2
<i>Simultaneous Maximum-Likelihood Calibration of Robot and Sensor Parameters</i> , pp. 2098-2103. Attachment	
Censi, Andrea	California Inst. of Tech.
Marchionni, Luca	Univ. di Roma
Oriolo, Giuseppe	Univ. di Roma La Sapienza
14:20-14:40	ThB9.3

<i>Maximum Likelihood Estimation of Sensor and Action Model Functions on a Mobile Robot</i> , pp. 2104-2109.	
Stronger, Daniel	Univ. of Texas at Austin
Stone, Peter	Univ. of Texas at Austin
14:40-15:00	ThB9.4
<i>Odometry and Calibration Methods for Multi-Castor Vehicles</i> , pp. 2110-2115.	
Doebbler, James	Texas A&M Univ.
Davis, Jeremy	Texas A&M Univ.
Junkins, John L.	Texas A&M Univ.
Valasek, John	Texas A&M Univ.
15:00-15:20	ThB9.5
<i>Odometry Calibration Using Home Positioning Function for Mobile Robot</i> , pp. 2116-2121.	
Yun, Youngmok	Postech (Pohang Univ. of Science and Tech.
Chung, Wan Kyun	POSTECH
Park, Byungjae	Pohang Univ. of science and Tech.
15:20-15:40	ThB9.6
<i>DIDIM: A New Method for the Dynamic Identification of Robots from Only Torque Data</i> , pp. 2122-2127.	
Gautier, Maxime	Univ. de Nantes
Janot, Alexandre	Haption SA
Vandanjon, Pierre Olivier	Lab. Central des Pont et Chaussées

ThB10	211
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Human-Robot Coordination and Interaction (Regular Sessions)

Chair: Howard, Ayanna	Georgia Inst. of Tech.
Co-Chair: Mettler, Bernard	Univ. of Minnesota
13:40-14:00	ThB10.1
<i>Interaction with a Zoomorphic Robot That Exhibits Canid Mechanisms of Behaviour</i> , pp. 2128-2133.	
Jones, Trevor	Univ. of Lincoln
Lawson, Shaun	Univ. of Lincoln
Mills, Daniel	Univ. of Lincoln
14:00-14:20	ThB10.2
<i>How Can Human Motion Prediction Increase Transparency?</i> , pp. 2134-2139.	
Jarrassé, Nathanaël	Univ. Pierre et Marie Curie - Paris6
Paik, Jamie	Univ. P. et M. Curie-Paris 6
Pasqui, Viviane	Univ. Pierre et Marie Curie, Paris 6
Morel, Guillaume	Univ. Pierre et Marie Curie - Paris 6
14:20-14:40	ThB10.3
<i>Development of Whole-Body Emotion Expression Humanoid Robot</i> , pp. 2140-2145.	
Endo, Nobutsuna	Waseda Univ.
Momoki, Shimpei	Waseda Univ.
Zecca, Massimiliano	Waseda Univ.
Saito, Minoru	Waseda Univ.
Mizoguchi, Yu	Waseda Univ.
Itoh, Kazuko	Waseda Univ.
Takanishi, Atsuo	Waseda Univ.
14:40-15:00	ThB10.4
<i>Measuring Human-Robot Team Effectiveness to Determine an Appropriate Autonomy Level</i> , pp. 2146-2151.	
Kaupp, Tobias	The Univ. of Sydney
Makarenko, Alexei	Univ. of Sydney
15:00-15:20	ThB10.5
<i>An Extremal Fields Approach for the Analysis of Human Planning and Control Performance</i> , pp. 2152-2158.	
Mettler, Bernard	Univ. of Minnesota
15:20-15:40	ThB10.6
<i>Human-Robot Coordination through Dynamic Regulation</i> , pp. 2159-2164. Attachment	
Johnson, Matthew	Inst. for Human and Machine Cognition
Bradshaw, Jeffrey	IHMC
Feltovich, Paul	IHMC
Bunch, Larry	IHMC

ThB11	212
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Safe Robots (Regular Sessions)

Chair: Khatib, Oussama	Stanford Univ.
Co-Chair: Bicchi, Antonio	Univ. of Pisa
13:40-14:00	ThB11.1
<i>Towards a Personal Robotics Development Platform: Rationale and Design of an Intrinsically Safe Personal Robot</i> , pp. 2165-2170.	
Attachment	
Wyrobek, Keenan	Stanford Univ.
Berger, Eric	Willow Garage
Van der Loos, H.F. Machiel	Univ. of British Columbia (UBC)
Salisbury, Kenneth	Stanford Univ.
14:00-14:20	ThB11.2
<i>VSA-II: A Novel Prototype of Variable Stiffness Actuator for Safe and Performing Robots Interacting with Humans</i> , pp. 2171-2176.	

Schiavi, Riccardo	Univ. of Pisa
Grioli, Giorgio	Univ. di Pisa
Sen, Soumen	The Univ. of Pisa
Bicchi, Antonio	Univ. of Pisa
14:20-14:40	ThB11.3
<i>Safe Joint Mechanism Based on Nonlinear Stiffness for Safe Human-Robot Collision</i> , pp. 2177-2182.	
Park, Jung-Jun	Korea Univ.
Song, Jae-Bok	Korea Univ.
Kim, Hong-Seok	Korea Inst. of Industrial Tech.
Lee, Yong-Ju	Korea Univ.
14:40-15:00	ThB11.4
<i>Safety for a Robot Arm Moving Amidst Humans by Using Panoramic Vision</i> , pp. 2183-2188.	
Cervera, Enric	Jaume-I Univ.
Martinez, Ester	Univ. Jaume I
Nomdedeu, Leo	Jaume-I Univ.
Pascual del Pobol, Angel	Jaume-I Univ.
Garcia, Nicolas	Univ. Miguel Hernandez de Elche
15:00-15:20	ThB11.5
<i>Investigation of Human-Robot Interaction Stability Using Lyapunov Theory</i> , pp. 2189-2194.	
Duchaine, Vincent	Univ. Laval
Gosselin, Clement	Univ. Laval
15:20-15:40	ThB11.6
<i>Evolution of Efficient Neural Controllers for Robot Multiple Task Performance – a Multiobjective Approach</i> , pp. 2195-2200.	
Capi, Genci	Univ. of Toyama
ThB12	214
Video Session II (Video Sessions)	
Chair: Tapus, Adriana	Univ. of Southern California
Co-Chair: Pollard, Nancy S	Carnegie Mellon Univ.
13:40-13:50	ThB12.1
<i>Hierarchical Two Stage Planner for Little Dog</i> , pp. 2201-2202. Attachment	
Bonnlander, Brian	Inst. for Human and Machine Cognition
Rebula, John	Univ. of Michigan
Neuhaus, Peter	Inst. for Human and Machine Cognition
Johnson, Matthew	Inst. for Human and Machine Cognition
Hill, Greg	IHMC
Perez, Carlos	IHMC
Carff, John	IHMC
Howell, William	IHMC
Pratt, Jerry	Inst. for Human and Machine Cognition
13:50-14:00	ThB12.2
<i>Injury Evaluation of Human-Robot Impacts</i> , pp. 2203-2204. Attachment	
Haddadin, Sami	German Aerospace Center (DLR)
Albu-Schäffer, Alin	DLR - German Aerospace Center
Strohmayr, Michael	German Aerospace Center
Frommberger, Mirko	German Aerospace Center (DLR)
Hirzinger, Gerd	German Aerospace Center (DLR)
14:00-14:10	ThB12.3
<i>Preliminary Report: Rescue Robot at Crandall Canyon, Utah, Mine Disaster</i> , pp. 2205-2206. Attachment	
Murphy, Robin	Univ. of South Florida
14:10-14:20	ThB12.4
<i>Learning to Dribble on a Real Robot by Success and Failure</i> , pp. 2207-2208. Attachment	
Riedmiller, Martin	Univ. of Osnabrueck
Hafner, Roland	Univ. of Osnabrueck
Lange, Sascha	Univ. of Osnabrück
Lauer, Martin	Univ. of Osnabrück
14:20-14:30	ThB12.5
<i>Bari-Bari-II: Jack-Up Rescue Robot with Debris Opening Function</i> , pp. 2209-2210. Attachment	
Tsukagoshi, Hideyuki	Tokyo Inst. of Tech.
Kitagawa, Ato	Tokyo Inst. of Tech.
14:30-14:40	ThB12.6
<i>Mixed Reality Environment for Autonomous Robot Development</i> , pp. 2211-2212. Attachment	
Nishiwaki, Koichi	National Inst. of AIST
Kobayashi, Kazuhiko	Canon Inc.
Uchiyama, Shinji	Canon Inc.
Yamamoto, Hiroyuki	Canon Inc.
Kagami, Satoshi	National Inst. of AIST
14:40-14:50	ThB12.7
<i>Autonomous Aircraft Flight Control for Constrained Environments</i> , pp. 2213-2214. Attachment	
How, Jonathan	Massachusetts Inst. of Tech.
McGrew, James	Massachusetts Inst. of Tech.

Frank, Adrian	Massachusetts Inst. of Tech.
Hines, George	Caltech
14:50-15:00	ThB12.8
<i>Handling of a Single Object by Multiple Mobile Robots Based on Caster-Like Dynamics</i> , pp. 2215-2216. Attachment	
Hirata, Yasuhisa	Tohoku Univ.
Kume, Yohei	Tohoku Univ.
Wang, Zhi Dong	Chiba Inst. of Tech.
Kosuge, Kazuhiro	Tohoku Univ.
15:00-15:10	ThB12.9
<i>Learning Terrain Cost Maps</i> , pp. 2217-2217. Attachment	
Rebula, John	Univ. of Michigan
Hill, Greg	IHMC
Bonnlander, Brian	Inst. for Human and Machine Cognition
Johnson, Matthew	Inst. for Human and Machine Cognition
Neuhaus, Peter	Inst. for Human and Machine Cognition
Perez, Carlos	IHMC
Carff, John	IHMC
Howell, William	IHMC
Pratt, Jerry	Inst. for Human and Machine Cognition
15:10-15:20	ThB12.10
<i>Control of a Fully-Actuated Airship for Satellite Emulation</i> , pp. 2218-2219. Attachment	
Sharf, Inna	McGill Univ.
Laumonier, Bryan	McGill Univ.
Persson, Mikael	McGill Univ.
Robert, Joel	McGill Univ.
15:20-15:30	ThB12.11
<i>Meso-Scale Manipulation: System, Modeling, Planning and Control</i> , pp. 2220-2221. Attachment	
Cappelleri, David	GRASP Lab. Univ. of Pennsylvania
Cheng, Peng	Univ. of Pennsylvania
Fink, Jonathan	Univ. of Pennsylvania
Gavrea, Bogdan	Univ. Babes-Bolyai Cluj-Napoca
Kumar, Vijay	Univ. of Pennsylvania
ThC1	101
Path Planning (Regular Sessions)	
Chair: Stilman, Mike	Georgia Tech.
Co-Chair: Maeda, Yusuke	Yokohama National Univ.
16:00-16:20	ThC1.1
<i>Generation of Energy-Efficient Trajectories for NIMS3D, a Three-Dimensional Cabled Robot</i> , pp. 2222-2227.	
Borgstrom, Per Henrik	UCLA
Borgstrom, Nils Peter	Univ. of California, Los Angeles
Stealey, Michael J.	UCLA
Jordan, Brett	UCLA, CENS
Sukhatme, Gaurav	Univ. of Southern California
Batalin, Maxim	CENS, UCLA
Kaiser, William	UCLA
16:20-16:40	ThC1.2
<i>GPS Denied Source Seeking for Underactuated Autonomous Vehicles in 3D</i> , pp. 2228-2233.	
Cochran, Jennie	Univ. of San Diego, CA
Siranosian, Antranik Antonio	Univ. of California, San Diego
Ghods, Nima	Univ. of California, San Diego
Krstic, Miroslav	Univ. of California, San Diego
16:40-17:00	ThC1.3
<i>Easy Robot Programming for Industrial Manipulators by Manual Volume Sweeping</i> , pp. 2234-2239. Attachment	
Maeda, Yusuke	Yokohama National Univ.
Ushioda, Tatsuya	Yokohama National Univ.
Makita, Satoshi	Yokohama National Univ.
17:00-17:20	ThC1.4
<i>Inverse versus Direct Kinematics Model Based on Flatness and Escape Lanes to Control CyCab Mobile Robot</i> , pp. 2240-2245.	
Morette, Nicolas	Lab. Vision et Robotique de Bourges
Novales, Cyril	Lab. Vision et Robotique
Vieyres, Pierre	Lab. Vision et Robotique
17:20-17:40	ThC1.5
<i>Real-Time Clothoid Approximation by Rational Bezier Curves</i> , pp. 2246-2251.	
Montés, Nicolás	Tech. Univ. of valencia
Herraez, Alvaro	Tech. Univ. of valencia
Armesto, Leopoldo	Tech. Univ. of valencia
Tornero, Josep	Tech. Univ. of valencia
17:40-18:00	ThC1.6
<i>Coordinated Motion Control of a Robot Arm and a Positioning Table with Arrangement of Multiple Goals</i> , pp. 2252-2258. Attachment	
Gueta, Lounell B.	School of Engineering, The Univ. of Tokyo

Chiba, Ryosuke
Ota, Jun
Arai, Tamio
Ueyama, Tsuyoshi

Univ. of Tokyo
The Univ. of Tokyo
Univ. of Tokyo
DENSO WAVE INCORPORATED

ThC2

102

Visual Tracking (Regular Sessions)

- Chair: Zha, Hongbin Peking Univ.
Co-Chair: Abd-Almageed, Wael Univ. of Maryland
- 16:00-16:20 ThC2.1
Fusion Tracking in Color and Infrared Images Using Sequential Belief Propagation, pp. 2259-2264.
Liu, Huaping Tsinghua Univ.
- 16:20-16:40 ThC2.2
A New Spatial-Color Mean-Shift Object Tracking Algorithm with Scale and Orientation Estimation, pp. 2265-2270.
Hu, Jwu-Sheng National Chiao Tung Univ.
Juan, Chung-Wei National Chiao Tung Univ.
- 16:40-17:00 ThC2.3
Tracking Interacting Targets with Laser Scanner Via On-Line Supervised Learning, pp. 2271-2276.
Song, Xuan Peking Univ.
Cui, Jinshi Peking Univ.
Wang, Xu-Lei Peking Univ.
Zhao, Huijing Peking Univ.
Zha, Hongbin Peking Univ.
- 17:00-17:20 ThC2.4
Multi-View 3D Vehicle Tracking with a Constrained Filter, pp. 2277-2282.
Atev, Stefan Univ. of Minnesota
Papanikolopoulos, Nikos Univ. of Minnesota
- 17:20-17:40 ThC2.5
Dynamic Visibility Checking for Vision-Based Motion Planning, pp. 2283-2288.
Leonard, Simon Univ. of Alberta
Croft, Elizabeth Univ. of British Columbia
Little, James J. UBC
- 17:40-18:00 ThC2.6
Dynamic Time Warping for Binocular Hand Tracking and Reconstruction, pp. 2289-2294.
Kragic, Danica School of Computer Science and Communication, KTH
Romero, Javier KTH
Kyrki, Ville Lappeenranta Univ. of Tech.
Argyros, Antonis FORTH

ThC3

103

Off-Road Mobile Robots (Regular Sessions)

- Chair: Shiller, Zvi Ariel Univ. Center
Co-Chair: Yoshida, Kazuya Tohoku Univ.
- 16:00-16:20 ThC3.1
Slope Traversal Experiments with Slip Compensation Control for Lunar/Planetary Exploration Rover, pp. 2295-2300.
Ishigami, Genya Tohoku Univ.
Nagatani, Keiji Tohoku Univ.
Yoshida, Kazuya Tohoku Univ.
- 16:20-16:40 ThC3.2
Dynamic Stability of Off-Road Vehicles: Quasi-3D Analysis, pp. 2301-2306.
Mann, P. The Coll. of Judea and Samaria
Shiller, Zvi Ariel Univ. Center
- 16:40-17:00 ThC3.3
Design, Simulations and Optimization of a Tracked Mobile Robot Manipulator with Hybrid Locomotion and Manipulation Capabilities, pp. 2307-2312.
Ben-Tzvi, Pinhas Univ. of Toronto
Goldenberg, Andrew Univ. of Toronto
Zu, Jean W. Univ. of Toronto
- 17:00-17:20 ThC3.4
Off-Road Robot Modeling with Dextrous Manipulation Kinematics, pp. 2313-2318. Attachment
Auchter, Joseph Florida State Univ.
Moore, Carl A. FAMU/FSU Coll. of Engineering
- 17:20-17:40 ThC3.5
Elementary Mechanical Analysis of Obstacle Crossing for Wheeled Vehicles, pp. 2319-2324.
Berkemeier, Matthew Autonomous Solutions, Inc.
Poulson, Eric Autonomous Solutions, Inc.
Groethe, Travis Autonomous Solutions, Inc.
- 17:40-18:00 ThC3.6
Design of the Mechanics and Sensor System of an Autonomous All-Terrain Robot Platform, pp. 2325-2330.
Pietikäinen, Aku Samuli Univ. of Oulu
Tikanmäki, Antti Univ. of Oulu

ThC4

104

Multi-Robot Search (Regular Sessions)

- Chair: LaValle, Steven M
Co-Chair: Parker, Lynne
Univ. of Illinois
Univ. of Tennessee
- 16:00-16:20
Tracking Hidden Agents through Shadow Information Spaces, pp. 2331-2338.
Yu, Jingjin
LaValle, Steven M
U of Illinois at Urbana Champaign
Univ. of Illinois
ThC4.1
- 16:20-16:40
Multi-Robot Perimeter Patrol in Adversarial Settings, pp. 2339-2345.
Agmon, Noa
Kraus, Sarit
Kaminka, Gal A
Bar-Ilan Univ.
Bar-Ilan Univ.
Bar-Ilan Univ.
ThC4.2
- 16:40-17:00
A Ladybug Exploration Strategy for Distributed Adaptive Coverage Control, pp. 2346-2353.
Schwager, Mac
Bullo, Francesco
Skelly, David
Rus, Daniela
Massachusetts Inst. of Tech.
UCSB
Yale Univ.
MIT
ThC4.3
- 17:00-17:20
Target Assignment for Integrated Search and Tracking by Active Robot Networks, pp. 2354-2359.
Frew, Eric W.
Elston, Jack
Univ. of Colorado
Univ. of Colorado, Boulder
ThC4.4
- 17:20-17:40
Multirobot Surveillance: An Improved Algorithm for the GRAPH-CLEAR Problem, pp. 2360-2365.
Kolling, Andreas
Carpin, Stefano
Univ. of California Merced
Univ. of California, Merced
ThC4.5
- 17:40-18:00
Active Target Search from UAVs in Urban Environments, pp. 2366-2371.
Geyer, Christopher
Carnegie Mellon Univ.
ThC4.6

ThC5

105

Vision: Image Capture and Processing (Regular Sessions)

- Chair: Daniilidis, Kostas
Co-Chair: Sanfeliu, Alberto
Univ. of Pennsylvania
Univ. Pol. de Catalunya
ThC5.1
- 16:00-16:20
Target-Directed Attention: Sequential Decision-Making for Gaze Planning, pp. 2372-2379.
Vogel, Julia
de Freitas, Nando
Univ. of British Columbia
Univ. of British Columbia
ThC5.2
- 16:20-16:40
The Complex of Lines from Successive Points and the Horopter, pp. 2380-2385.
Selig, J.M.
London South Bank Univ.
ThC5.3
- 16:40-17:00
Removal of Adherent Noises from Image Sequences by Spatio-Temporal Image Processing, pp. 2386-2391. Attachment
Yamashita, Atsushi
Fukuchi, Isao
Kaneko, Toru
T. Miura, Kenjiro
Shizuoka Univ.
Shizuoka Univ.
Shizuoka Univ.
Shizuoka Univ.
ThC5.4
- 17:00-17:20
Background Compensation Using Hough Transformation, pp. 2392-2397.
Pham, Xuan Dai
Cho, Jung Uk
Jeon, Jae Wook
Sungkyunkwan Univ.
Sungkyunkwan Univ.
Sungkyunkwan Univ.
ThC5.5
- 17:20-17:40
Visual Saliency Model for Robot Cameras, pp. 2398-2403.
Butko, Nicholas
Zhang, Lingyun
Cottrell, Garrison W.
Movellan, Javier
Univ. of California at San Diego
Univ. of California at San Diego
Univ. of California at San Diego
Univ. California San Diego
ThC5.6
- 17:40-18:00
Real Time Vision for Robotics Using a Moving Fovea Approach with Multi Resolution, pp. 2404-2409.
Gomes, Rafael Beserra
Garcia Gonçalves, Luiz Marcos
M. Carvalho, Bruno
Univ. Federal do Rio Grande do Norte
Federal Univ. of Rio Grande do Norte
UFRN

ThC6

206

Dynamics and Control of Underactuated Systems (Regular Sessions)

- Chair: Goodwine, Bill
Co-Chair: Agrawal, Sunil
Univ. of Notre Dame
Univ. of Delaware

16:00-16:20		ThC6.1
<i>Basketball Robot: Ball-On-Plate with Pure Haptic Information</i> , pp. 2410-2415. Attachment		
Lee, Kwang-Kyu	Tech. Univ. München (TUM)	
Baetz, Georg	TU Munich	
Wollherr, Dirk	Tech. Univ. München	
16:20-16:40		ThC6.2
<i>Dynamic Programming for Global Control of the Acrobot and Its Chaotic Aspect</i> , pp. 2416-2422.		
Ueda, Ryuichi	The Univ. of Tokyo	
Arai, Tamio	Univ. of Tokyo	
16:40-17:00		ThC6.3
<i>Differentially Flat Design of Under-Actuated Planar Robots: Experimental Results</i> , pp. 2423-2428.		
Sangwan, Vivek	Univ. of Delaware	
Kuebler, Helge	Univ. of Delaware	
Agrawal, Sunil	Univ. of Delaware	
17:00-17:20		ThC6.4
<i>Control of a Class of Under-Actuated Systems with Saturation Using Hierarchical Sliding Mode</i> , pp. 2429-2434.		
Qian, Dianwei	Chinese Acad. of Sciences	
Yi, Jianqiang	Inst. of Automation, Chinese Acad.	
Zhao, Dongbin	Chinese Acad. of Sciences	
17:20-17:40		ThC6.5
<i>Intrinsic Vector-Valued Symmetric Form for Simple Mechanical Control Systems in the Nonzero Velocity Setting</i> , pp. 2435-2440.		
Nightingale, Jason	Univ. of Notre Dame	
Hind, Richard	Univ. of Notre Dame	
Goodwine, Bill	Univ. of Notre Dame	
17:40-18:00		ThC6.6
<i>Underactuated Virtual Passive Dynamic Walking with an Upper Body</i> , pp. 2441-2446.		
Asano, Fumihiko	BMC RIKEN	
Luo, Zhi-Wei	The Inst. of Physical and Chemical Res. (RIKEN)	

ThC7

207

Rehabilitation Robotics II (Regular Sessions)

Chair: Sugar, Thomas	Arizona State Univ.	
Co-Chair: Van der Loos, H.F. Machiel	Univ. of British Columbia (UBC)	
16:00-16:20		ThC7.1
<i>Design of a 3D Gravity Balanced Orthosis for Upper Limb</i> , pp. 2447-2452.		
Rizk, Rani RIZK	Lirrm	
Krut, Sebastien	LIRMM (CNRS & Univ. of Montpellier)	
Dombre, Etienne	Univ. Montpellier II & CNRS	
16:20-16:40		ThC7.2
<i>Controlling Shoulder Impedance in a Rehabilitation Arm Exoskeleton</i> , pp. 2453-2458.		
Carignan, Craig	Georgetown Univ. ISIS Center	
Naylor, Michael	Univ. of Maryland	
Roderick, Stephen	Univ. of Maryland	
16:40-17:00		ThC7.3
<i>A Forearm Actuation Unit for an Upper Extremity Prosthesis</i> , pp. 2459-2464. Attachment		
Withrow, Thomas	Vanderbilt Univ.	
Shen, Xiangrong	Vanderbilt Univ.	
Mitchell, Jason	Vanderbilt Univ.	
Goldfarb, Michael	Vanderbilt Univ.	
17:00-17:20		ThC7.4
<i>Robot-Mediated Arm Rehabilitation in Virtual Environments for Chronic Stroke Patients: A Clinical Study</i> , pp. 2465-2470. Attachment		
Frisoli, Antonio	Scuola Superiore Sant'Anna	
Borelli, Luigi Federico	Scuola Superiore Sant'Anna Pisa	
Montagner, Alberto	Sant'Anna School of Advanced Studies	
Marcheschi, Simone	PERCRO - Scuola Superiore S. Anna	
Procopio, Caterina	Scuola Superiore Sant'Anna	
Salsedo, Fabio	PERCRO - Scuola Superiore S. Anna	
Bergamasco, Massimo	Scuola Superiore S. Anna	
Carboncini, Maria Chiara	Univ. degli Studi di Pisa	
Rossi, Bruno	Univ. degli Studi di Pisa	
17:20-17:40		ThC7.5
<i>ADAPT – Adaptive Automated Robotic Task Practice System for Stroke Rehabilitation</i> , pp. 2471-2476.		
Choi, Younggeun	Univ. of Southern California	
Gordon, James	Univ. of Southern California	
Schweighofer, Nicolas	USC	
17:40-18:00		ThC7.6
<i>Comparison of Robotic and Clinical Motor Function Improvement Measures for Sub-Acute Stroke Patients</i> , pp. 2477-2482.		
Celik, Ozkan	Rice Univ.	
O'Malley, Marcia	Rice Univ.	
Boake, Corwin	Univ. of Texas Health Science Center	
Levin, Harvey	Baylor Coll. of Medicine	

ThC8 208

Medical Robotics Systems for Treatment and Intervention (Regular Sessions)

- Chair: Alterovitz, Ron Univ. of California, Berkeley
Co-Chair: Fischer, Gregory Johns Hopkins Univ. - CISST ERC
- 16:00-16:20 ThC8.1
Screw-Based Motion Planning for Bevel-Tip Flexible Needles in 3D Environments with Obstacles, pp. 2483-2488.
Duindam, Vincent Univ. of California, Berkeley
Alterovitz, Ron Univ. of California, Berkeley
Sastry, Shankar Univ. of California, Berkeley
Goldberg, Ken UC Berkeley
- 16:20-16:40 ThC8.2
Pneumatically Operated MRI-Compatible Needle Placement Robot for Prostate Interventions, pp. 2489-2495.
Fischer, Gregory Johns Hopkins Univ. - CISST ERC
Iordachita, Iulian Johns Hopkins Univ.
Csoma, Csaba Johns Hopkins Univ.
Tokuda, Junichi Brigham and Women's Hospital and Harvard Medical School
Mewes, Philip Walter Brigham and Women's Hospital
Tempany, Clare Brigham & Women's hospital, Harvard MEDICAL sCHOOL
Hata, Nobuhiko Brigham and Women's Hospital
Fichtinger, Gabor Queen's Univ.
- 16:40-17:00 ThC8.3
Dynamics-Based Decentralized Control of Robotic Couch and Multi-Leaf Collimators for Tracking Tumor Motion, pp. 2496-2502.
Podder, Tarun Thomas Jefferson Univ.
Buzurovic, Ivan Thomas Jefferson Univ.
Galvin, James Thomas Jefferson Univ. Hospital
Yu, Yan Thomas Jefferson Univ. Hospital
- 17:00-17:20 ThC8.4
The Experimental Study of a Precision Parallel Manipulator with Binary Actuation: With Application to MRI Cancer Treatment, pp. 2503-2508.
Tadakuma, Kenjiro Massachusetts Inst. of Tech.
Devita, Lauren MIT
Plante, Jean-Sebastien Univ. de Sherbrooke
Yan, Shaoze MIT
Dubowsky, Steven MIT
- 17:20-17:40 ThC8.5
Towards a Needle Driver Robot for Radiofrequency Ablation of Tumors under Continuous MRI, pp. 2509-2514.
Kokes, Rebecca Univ. of Maryland
Lister, Kevin Univ. of Maryland
Gullapalli, Rao Univ. of Maryland School of Medicine
Zhang, Bao Univ. of Maryland School of Medicine
Richard, Howard Univ. of Maryland School of Medicine
Desai, Jaydev P. Univ. of Maryland
- 17:40-18:00 ThC8.6
Robot Assisted Real-Time Tumor Manipulation for Breast Biopsy, pp. 2515-2520.
Mallapragada, Vishnu Vanderbilt Univ.
Sarkar, Nilanjan vanderbilt Univ.
Podder, Tarun Thomas Jefferson Univ.

ThC9 209

Non-Holonomic Mobile Robot Control (Regular Sessions)

- Chair: Guo, Yi Stevens Inst. of Tech.
Co-Chair: Bidaud, Philippe Univ. Pierre et Marie Curie - Paris 6
- 16:00-16:20 ThC9.1
Human-Friendly Motion Control of a Wheeled Inverted Pendulum by Reduced-Order Disturbance Observer, pp. 2521-2526.
Choi, Dongil Korea Advanced Inst. of Science and Tech. (KAIST)
Oh, Jun-Ho Korea Advanced Inst. of Sci. and Tech.
- 16:20-16:40 ThC9.2
Kinematic Motion Control of Wheeled Mobile Robots Considering Curvature Constraints, pp. 2527-2532.
Kim, Youngshik Univ. of Utah
Minor, Mark Univ. of Utah
- 16:40-17:00 ThC9.3
Generalizing the Dubins and Reeds-Shepp Cars: Fastest Paths for Bounded-Velocity Mobile Robots, pp. 2533-2539.
Furtuna, Andrei Dartmouth Coll.
Balkcom, Devin Dartmouth Coll.
Chitsaz, Hamidreza Univ. of Illinois at Urbana-Champaign
Kavathekar, Paritosh Dartmouth Coll.
- 17:00-17:20 ThC9.4
Stabilization Algorithm for a High Speed Car-Like Robot Achieving Steering Maneuver, pp. 2540-2545.

Lucet, Eric	Robosoft, Univ. Pierre et Marie Curie - Paris6
Grand, Christophe	Univ. Pierre et Marie Curie - Paris6
Sallé, Damien	ROBOSOFT
Bidaud, Philippe	Univ. Pierre et Marie Curie - Paris 6
17:20-17:40	ThC9.5
<i>Calibration of Kinematic Parameters of a Car-Like Mobile Robot to Improve Odometry Accuracy</i> , pp. 2546-2551.	
Lee, Kooktae	Korea Univ.
Chung, Woojin	Korea Univ.
17:40-18:00	ThC9.6
<i>Optimal Trajectory Generation for Nonholonomic Robots in Dynamic Environments</i> , pp. 2552-2557.	
Guo, Yi	Stevens Inst. of Tech.
Tang, Tang	Stevens Inst. of Tech.

ThC10 211

Human-Robot Interaction: Systems and Algorithms (Regular Sessions)

Chair: Christensen, Henrik Iskov	Georgia Inst. of Tech.
Co-Chair: Thomaz, Andrea Lockerd	Georgia Inst. of Tech.
16:00-16:20	ThC10.1
<i>Field Trial of Asynchronous Communication Using Network-Based Interactive Child Watch System for the Participation of Parents in Day-Care Activities</i> , pp. 2558-2563.	
Kawata, Hiroaki	Nippon Telegraph and Telephone Corp.
Takano, Yosuke	NEC Corp.
Iwata, Yoshiyuki	Nippon Telegraph and Telephone Corp.
Kanamaru, Naoyoshi	NTT Cyber Solutiions Lab.
Shimokura, Ken-ichiro	Advanced Tele. Res. Inst.
Fujita, Yoshihiro	NEC Corp.
16:20-16:40	ThC10.2
<i>Detecting Structural Ambiguities and Transitions During a Guided Tour</i> , pp. 2564-2570.	
Topp, Elin Anna	Royal Inst. of Tech. (KTH), Stockholm
Christensen, Henrik Iskov	Georgia Inst. of Tech.
16:40-17:00	ThC10.3
<i>Driving Skill Characterization: A Feasibility Study</i> , pp. 2571-2576.	
Zhang, Yilu	General Motors R&D Center
17:00-17:20	ThC10.4
<i>Person Tracking on a Mobile Robot with Heterogeneous Inter-Characteristic Feedback</i> , pp. 2577-2582.	
Lee, Juhyun	The Univ. of Texas at Austin
Stone, Peter	Univ. of Texas at Austin
17:20-17:40	ThC10.5
<i>Dismantling Interior Facilities in Buildings by Human Robot Collaboration</i> , pp. 2583-2590.	
Cruz Ramirez, Sergio Rolando	Osaka Univ.
Ishizuka, Yuusuke	Osaka Univ.
Mae, Yasushi	Osaka Univ.
Takubo, Tomohito	Osaka Univ.
Arai, Tatsuo	Graduate School of Engineering Science, Osaka Univ.
17:40-18:00	ThC10.6
<i>Combining Automated On-Line Segmentation and Incremental Clustering for Whole Body Motions</i> , pp. 2591-2598.	
Kulic, Dana	Univ. of Tokyo
Takano, Wataru	Tokyo Univ.
Nakamura, Yoshihiko	Univ. of Tokyo

ThC11 212

Position, Force, and Impedance Control (Regular Sessions)

Chair: Featherstone, Roy	The Australian National Univ.
Co-Chair: de Mathelin, Michel	Univ. of Strasbourg
16:00-16:20	ThC11.1
<i>Position and Force Control of the Grasping Function for a Hyperredundant Arm</i> , pp. 2599-2604.	
Ivanescu, Mircea	Univ. of Craiova
Florescu, Mihaela Cecilia	Univ. of Craiova
Popescu, Nirvana	Univ. Pol. BUCURESTI
Popescu, Decebal	Univ. Pol. BUCURESTI
16:20-16:40	ThC11.2
<i>Grasping Force Control of Multi-Fingered Robot Hand Based on Slip Detection Using Tactile Sensor</i> , pp. 2605-2610. Attachment	
Gunji, Daisuke	NSK Ltd.
Mizoguchi, Yoshitomo	The Univ. of Electro-Communications
Teshigawara, Seiichi	The Univ. of Electro-Communications
Ming, Aiguo	The Univ. of Electro-Communications
Namiki, Akio	Univ. of Tokyo
Ishikawa, Masatoshi	Univ. of Tokyo
Shimojo, Makoto	Univ. of Electro-COMMUNICATIONS
16:40-17:00	ThC11.3

On Iterative Learning Control for Simultaneous Force/Position Trajectory Tracking by Using 5 D.O.F. Robotic Thumb under Non-Holonomic Rolling Constraints, pp. 2611-2616. Attachment

Tahara, Kenji
Arimoto, Suguru
Sekimoto, Masahiro
Yoshida, Morio
Luo, Zhi-Wei

Kyushu Univ.
Ritsumeikan Univ.
Ritsumeikan Univ.
RIKEN
The Inst. of Physical and Chemical Res. (RIKEN)

17:00-17:20 ThC11.4

Improving Force Control Performance by Computational Elimination of Non-Contact Forces/Torques, pp. 2617-2622.

Kubus, Daniel
Kroeger, Torsten
Wahl, Friedrich M.

Tech. Univ. of Braunschweig
Tech. Univ. of Braunschweig
Tech. Univ. of Braunschweig

17:20-17:40 ThC11.5

An IMC Based Enhancement of Accuracy and Robustness of Impedance Control, pp. 2623-2628.

Kang, Sang Hoon
Jin, Maolin
Chang, Pyung Hun

Korea Advanced Inst. of Science and Tech.
Korea Advanced Inst. of Science and Tech.
KAIST

17:40-18:00 ThC11.6

New Aspects of Input Shaping Control to Damp Oscillations of a Compliant Force Sensor, pp. 2629-2635.

Kamel, Amine
Lange, Friedrich
Hirzinger, Gerd

German Aerospace (DLR)
German Aerospace Center (DLR)
German Aerospace Center (DLR)

ThC12 214

Pursuit-Evasion (Regular Sessions)

Chair: Hsu, David
Co-Chair: Murrieta-Cid, Rafael

National Univ. of Singapore
Center for Mathematical Res. (CIMAT)

16:00-16:20 ThC12.1

Hybrid Laser and Vision Based Object Search and Localization, pp. 2636-2643.

Galvez Lopez, Dorian
Sjö, Kristoffer
Paul, Chandana
Jensfelt, Patric

Royal Inst. of Tech.
Royal Inst. of Tech.
Royal Inst. of Tech.
Royal Inst. of Tech.

16:20-16:40 ThC12.2

A Point-Based POMDP Planner for Target Tracking, pp. 2644-2650.

Hsu, David
Lee, Wee Sun
Rong, Nan

National Univ. of Singapore
National Univ. of Singapore
Cornell Univ.

16:40-17:00 ThC12.3

Information Value-Driven Approach to Path Clearance with Multiple Scout Robots, pp. 2651-2656.

Likhachev, Maxim
Stentz, Anthony

Carnegie Mellon Univ.
Carnegie Mellon Univ.

17:00-17:20 ThC12.4

A Complexity Result for the Pursuit-Evasion Game of Maintaining Visibility of a Moving Evader, pp. 2657-2664.

Murrieta-Cid, Rafael
Monroy, Raúl
Hutchinson, Seth
Laumond, Jean-Paul

Center for Mathematical Res. (CIMAT)
Tecnológico de Monterrey, Campus Estado de México
Univ. of Illinois
LAAS-CNRS

17:20-17:40 ThC12.5

Bearing-Only Pursuit, pp. 2665-2670.

Karnad, Nikhil
Isler, Volkan

Rensselaer Pol. Inst. (RPI)
Rensselaer Pol. Inst.

17:40-18:00 ThC12.6

Partial Barrier Coverage: Using Game Theory to Optimize Probability of Undetected Intrusion in Polygonal Environments, pp. 2671-2676.

Kloder, Stephen
Hutchinson, Seth

Univ. of Illinois at Urbana-Champaign
Univ. of Illinois

FrA1 101

Humanoid Robot Locomotion (Regular Sessions)

Chair: Laumond, Jean-Paul
Co-Chair: Berkemeier, Matthew

LAAS-CNRS
Autonomous Solutions, Inc.

08:40-09:00 FrA1.1

Whole Body Humanoid Control from Human Motion Descriptors, pp. 2677-2684.

Dariush, Behzad

Honda Res. Inst. USA

Gienger, Michael	Honda Res. Inst. Europe
Jian, Bing	Univ. of Florida
Goerick, Christian	Honda Res. Inst. Europe GmbH
Fujimura, Kikuo	Honda Res. Inst.
09:00-09:20	FrA1.2
<i>On the Implementation of Model Predictive Control for On-Line Walking Pattern Generation</i> , pp. 2685-2690.	
Dimitrov, Dimitar	INRIA, 38331 St Ismier Cedex, France
Wieber, Pierre-Brice	INRIA Rhône-Alpes
Ferreau, Hans Joachim	K.U. Leuven
Diehl, Moritz	Univ. of Heidelberg
09:20-09:40	FrA1.3
<i>Homogeneous Matric Approach for the Operational Space Control of Bipedal Robots with Flexible Feet</i> , pp. 2691-2696.	
Bruneau, Olivier	UVSQ / LISV
Gravez, Fabrice	CEA LIST
Ouezdou, Fathi	Univ. de Versailles
09:40-10:00	FrA1.4
<i>On Human Motion Imitation by Humanoid Robot</i> , pp. 2697-2704. Attachment	
Suleiman, Wael	LAAS - CNRS
Yoshida, Eiichi	National Inst. of AIST
Kanehiro, Fumio	National Inst. of AIST
Laumond, Jean-Paul	LAAS-CNRS
Monin, Andre	LAAS-CNRS
10:00-10:20	FrA1.5
<i>Hierarchical Motor Learning and Synthesis with Passivity-Based Controller and Phase Oscillator</i> , pp. 2705-2710. Attachment	
Hyon, Sang-Ho	JST-ICORP / ATR Computational Neuroscience Lab.
Morimoto, Jun	ICORP-JST/ATR-CNS
Cheng, Gordon	ATR Computational Neuroscience Lab.
10:20-10:40	FrA1.6
<i>Low-Dimensional Feature Extraction for Humanoid Locomotion Using Kernel Dimension Reduction</i> , pp. 2711-2716.	
Morimoto, Jun	ICORP-JST/ATR-CNS
Hyon, Sang-Ho	JST-ICORP / ATR Computational Neuroscience Lab.
Atkeson, Christopher	CMU
Cheng, Gordon	ATR Computational Neuroscience Lab.

FrA2 102

Vision for Outdoor Navigation (Regular Sessions)

Chair: Johnson, Andrew	Jet Propulsion Lab. - California Institute of Technology
Co-Chair: Kodagoda, Sarath	Univ. of Tech. Sydney
08:40-09:00	FrA2.1
<i>Autonomous Image-Based Exploration for Mobile Robot Navigation</i> , pp. 2717-2722. Attachment	
D., Santosh	Carnegie Mellon Univ.
Achar, Supreeth	IIIT, Hyderabad
Jawahar, C.V.	IIIT, Hyderabad
09:00-09:20	FrA2.2
<i>Image-Based Path Planning for Outdoor Mobile Robots</i> , pp. 2723-2728. Attachment	
Ollis, Mark	Applied Perception, Inc.
Huang, Wes	Applied Perception
Happold, Michael	Applied Perception, Inc.
Stancil, Brian Alan	Foster-Miller
09:20-09:40	FrA2.3
<i>A Single Camera Terrain Slope Estimation Technique for Natural Arctic Environments</i> , pp. 2729-2734. Attachment	
Williams, Stephen	Georgia Inst. of Tech.
Howard, Ayanna	Georgia Inst. of Tech.
09:40-10:00	FrA2.4
<i>Stereo Vision and Shadow Analysis for Landing Hazard Detection</i> , pp. 2735-2742.	
Matthies, Larry	Jet Propulsion Lab.
Huertas, Andres	JPL
Cheng, Yang	JPL
Johnson, Andrew	Jet Propulsion Lab. - California Inst. of Tech.
10:00-10:20	FrA2.5
<i>UAV Attitude Estimation by Vanishing Points in Catadioptric Images</i> , pp. 2743-2749.	
Bazin, Jean-Charles	RCV Lab. KAIST
Kweon, In So	KAIST
Demonceaux, Cedric	Univ. of Picardie - Jules Verne
Vasseur, Pascal	Univ. of Picardie - Jules Verne
10:20-10:40	FrA2.6
<i>Online, Self-Supervised Terrain Classification Via Discriminatively Trained Submodular Markov Random Fields</i> , pp. 2750-2757. Attachment	
Vernaza, Paul	Univ. of Pennsylvania
Taskar, Ben	Univ. of Pennsylvania
Lee, Daniel D.	Univ. of Pennsylvania

Particle Filtering (Regular Sessions)

Chair: Burgard, Wolfram	Univ. of Freiburg
Co-Chair: Bennewitz, Maren	Univ. of Freiburg
08:40-09:00	FrA3.1
<i>Efficient Active Global Localization for Mobile Robots Operating in Large and Cooperative Environments</i> , pp. 2758-2763.	
Corominas Murtra, Andreu	Inst. de Robòtica i Informàtica Industrial
Mirats Tur, Josep M.	CSIC-UPC
Sanfeliu, Alberto	Univ. Pol. de Catalunya
09:00-09:20	FrA3.2
<i>Negative Information and Line Observations for Monte Carlo Localization</i> , pp. 2764-2769.	
Hester, Todd	Univ. of Texas at Austin
Stone, Peter	Univ. of Texas at Austin
09:20-09:40	FrA3.3
<i>Hyper-Particle Filtering for Stochastic Systems</i> , pp. 2770-2777.	
Davidson, James	The Beckman Inst. at the Univ. of Illinois
Hutchinson, Seth	Univ. of Illinois
09:40-10:00	FrA3.4
<i>Lazy Localization Using the Frozen-Time Smoother</i> , pp. 2778-2783.	
Censi, Andrea	California Inst. of Tech.
Tipaldi, Gian Diego	Univ. of Rome
10:00-10:20	FrA3.5
<i>A Scalable Algorithm for Monte Carlo Localization Using an Incremental E2LSH-Database of High Dimensional Features</i> , pp. 2784-2791.	
Tanaka, Kanji	Kyushu Univ.
Kondo, Eiji	Kyushu Univ.
10:20-10:40	FrA3.6
<i>Using Incomplete Online Metric Maps for Topological Exploration with the Gap Navigation Tree</i> , pp. 2792-2797.	
Murphy, Elizabeth	Oxford Univ.
Newman, Paul	Oxford Univ.

FrA4**Multi-Robot Searching and Exploring** (Regular Sessions)

Chair: Andersson, Lars A. A.	Linköping Univ.
Co-Chair: Stachniss, Cyrill	Univ. of Freiburg
08:40-09:00	FrA4.1
<i>C-SAM: Multi-Robot SLAM Using Square Root Information Smoothing</i> , pp. 2798-2805.	
Andersson, Lars A. A.	Linköping Univ.
Nygards, Per Eric Jonas	Swedish Defence Res. Agency
09:00-09:20	FrA4.2
<i>A Bacterial Colony Growth Framework for Collaborative Multi-Robot Localization</i> , pp. 2806-2811.	
Gasparri, Andrea	Univ. degli Studi Roma Tre
Prosperi, Mattia CF	Univ. of Roma TRE
09:20-09:40	FrA4.3
<i>Balancing Exploration and Exploitation in Motion Planning</i> , pp. 2812-2817.	
Rickert, Markus	Tech. Univ. München
Brock, Oliver	Univ. of Massachusetts Amherst
Knoll, Alois	TU Munich
09:40-10:00	FrA4.4
<i>Experimental Evaluation of Some Exploration Strategies for Mobile Robots</i> , pp. 2818-2823.	
Amigoni, Francesco	Pol. di Milano
10:00-10:20	FrA4.5
<i>Robot-Assisted Discovery of Evacuation Routes in Emergency Scenarios</i> , pp. 2824-2830. Attachment	
Ferranti, Ettore	Univ. of Oxford
Trigoni, Niki	Univ. of Oxford
10:20-10:40	FrA4.6
<i>Estimation and Control for Cooperative Autonomous Searching in Crowded Urban Emergencies</i> , pp. 2831-2836.	
Lavis, Benjamin	Univ. of New South Wales
Yokokohji, Yasuyoshi	Kyoto Univ.
Furukawa, Tomonari	Univ. of New South Wales

FrA5**Learning** (Regular Sessions)

Chair: Ramamoorthy, Subramanian	The Univ. of Edinburgh
Co-Chair: Burschka, Darius	Tech. Univ. München
08:40-09:00	FrA5.1
<i>Towards Schema-Based, Constructivist Robot Learning: Validating an Evolutionary Search Algorithm for Schema Chunking</i> , pp. 2837-2844.	
Tang, Yifan	Univ. of Tennessee, Knoxville
Parker, Lynne	Univ. of Tennessee
09:00-09:20	FrA5.2
<i>Bayesian Reinforcement Learning in Continuous POMDPs with Application to Robot Navigation</i> , pp. 2845-2851.	

Ross, Stephane Chaib-draa, Brahim Pineau, Joelle	McGill Univ. Laval Univ. McGill Univ.
09:20-09:40 <i>Anticipatory Robot Control for a Partially Observable Environment Using Episodic Memories</i> , pp. 2852-2859. Endo, Yoichiro	FrA5.3 Georgia Tech. Mobile Robot Lab.
09:40-10:00 <i>A Bayesian Approach to Empirical Local Linearization for Robotics</i> , pp. 2860-2865. Ting, Jo-Anne D'Souza, Aaron Vijayakumar, Sethu Schaal, Stefan	FrA5.4 Univ. of Southern California Google Univ. of Edinburgh Univ. of Southern California
10:00-10:20 <i>Human-Machine Skill Transfer Extended by a Scaffolding Framework</i> , pp. 2866-2871. Attachment Mayer, Hermann Georg Burschka, Darius Knoll, Alois Braun, Eva U. Bauernschmitt, Robert Lange, Rudiger	FrA5.5 TU Munich Tech. Univ. München TU Munich German Heart Center Munich German Heart Center Munich German Heart Center Munich
10:20-10:40 <i>Real-Time Learning of Resolved Velocity Control on a Mitsubishi PA-10</i> , pp. 2872-2877. Peters, Jan Nguyen-Tuong, Duy	FrA5.6 Max-Planck Inst. for Biological Cybernetics Max Planck Inst.

FrA6 206

Robot Control and Dynamics (Regular Sessions)

Chair: Luecke, Greg R. Co-Chair: Hamel, William R.	Iowa State Univ. Univ. of Tennessee
08:40-09:00 <i>Virtual Interactions Using Under-Actuated Robots</i> , pp. 2878-2883. Luecke, Greg R. Beckman, John	FrA6.1 Iowa State Univ. Iowa State Univ.
09:00-09:20 <i>Influence of Internal Vibration Modes on the Stability of Haptic Rendering</i> , pp. 2884-2889. Attachment Díaz, Iñaki Gil, Jorge Juan	FrA6.2 CEIT CEIT
09:20-09:40 <i>Continuous Impulsive Force Controller for Forbidden-Region Virtual Fixtures</i> , pp. 2890-2895. Hennekens, Daan Constantinescu, Daniela Steinbuch, Maarten	FrA6.3 Tech. Univ. of Eindhoven Univ. of Victoria Eindhoven Univ. of Tech.
09:40-10:00 <i>Experimental Verification on Vibration Suppression of a Flexible Manipulator Using MPID Controller</i> , pp. 2896-2901. Mansour, Tamer Jiang, Xin Konno, Atsushi Uchiyama, Masaru	FrA6.4 Tohoku Univ. Tohoku Univ. Tohoku Univ. Tohoku Univ.
10:00-10:20 <i>Expanding the Twin Pulse Swing Free Profile</i> , pp. 2902-2909. Attachment Bowling, David Starr, Greg Wood, John Lumia, Ron	FrA6.5 MicroDexterity Systems Univ. of New Mexico Univ. of New Mexico Univ. of New Mexico
10:20-10:40 <i>Collision Avoidance Techniques for Tele-Operated and Autonomous Manipulators in Overlapping Workspaces</i> , pp. 2910-2915. Spencer, Andrew Pryor, Mitch Kapoor, Chetan Tesar, Delbert	FrA6.6 Univ. of Texas at Austin Univ. of Texas at Austin Univ. of Texas at Austin UT Austin

FrA7 207

Sensing for Medical Robots (Regular Sessions)

Chair: Cavusoglu, M. Cenk Co-Chair: Webster, III, Robert James	Case Western Res. Univ. Vanderbilt Univ.
08:40-09:00 <i>Prediction of Heartbeat Motion with a Generalized Adaptive Filter</i> , pp. 2916-2921. Franke, Timothy Bebek, Ozkan Cavusoglu, M. Cenk	FrA7.1 Case Western Res. Univ. Case Western Res. Univ. Case Western Res. Univ.
09:00-09:20	FrA7.2

<i>Swimming Capsule Endoscope Using Static and RF Magnetic Field of MRI for Propulsion</i> , pp. 2922-2927.	
Kosa, Gabor	ETH Zurich
Jakab, Peter	Brigham and Women's Hospital, Harvard Medical School
Jolesz, Ferenc	Brigham and Women's Hospital, Harvard Medical School
Hata, Nobuhiko	Brigham and Women's Hospital
09:20-09:40	FrA7.3
<i>Physiological Motion Rejection in Flexible Endoscopy Using Visual Servoing</i> , pp. 2928-2933. Attachment	
Ott, Laurent	LSIIT - AVR - Univ. of Strasbourg
Zanne, Philippe	Univ. of Strasbourg
Nageotte, Florent	LSIIT, UMR 7005 CNRS - ULP, Univ. of Strasbourg
de Mathelin, Michel	Univ. of Strasbourg
Gangloff, Jacques	Strasbourg I Univ.
09:40-10:00	FrA7.4
<i>Optical Fiber Sensor for Soft Tissue Investigation During Minimally Invasive Surgery</i> , pp. 2934-2939.	
Puangmali, Pinyo	King's Coll. London
Liu, Hongbin	King's Coll. London
Althoefer, Kaspar	Kings Coll. London
Seneviratne, Lakmal	Kings Coll. London
10:00-10:20	FrA7.5
<i>Vision Based 3-D Shape Sensing of Flexible Manipulators</i> , pp. 2940-2947.	
Camarillo, David B.	Stanford Univ.
Loewke, Kevin	Stanford Univ.
Carlson, Christopher	Hansen Medical Inc
Salisbury, Kenneth	Stanford Univ.
10:20-10:40	FrA7.6
<i>Insertable Surgical Imaging Device with Pan, Tilt, Zoom, and Lighting</i> , pp. 2948-2953.	
Hu, Tie	Columbia Univ.
Allen, Peter	Columbia Univ.
Hogle, Nancy	NYPH
Fowler, Dennis	Columbia Univ.

FrA8 208

Applications of Medical Robotics Technologies (Regular Sessions)

Chair: Salcudean, Septimiu E.	Univ. of British Columbia
Co-Chair: Farritor, Shane	Univ. of Nebraska Lincoln
08:40-09:00	FrA8.1
<i>Postural Kyphosis Detection Using Intelligent Shoes</i> , pp. 2954-2958.	
Chen, Meng	The Chinese Univ. of Hong Kong
Huang, Bufu	The Chinese Univ. of Hong Kong
Xu, Yangsheng	The Chinese Univ. of Hong Kong
09:00-09:20	FrA8.2
<i>Integrated System for Robot-Assisted in Prostate Biopsy in Closed MRI Scanner</i> , pp. 2959-2962.	
Mewes, Philip Walter	Brigham and Women's Hospital
Hata, Nobuhiko	Brigham and Women's Hospital
Tokuda, Junichi	Brigham and Women's Hospital and Harvard Medical School
Tempany, Clare	Brigham & Women's hospital, Harvard MEDICAL sCHOOL
Csoma, Csaba	Johns Hopkins Univ.
DiMaio, Simon P.	Intuitive Surgical Inc.
Fichtinger, Gabor	Queen's Univ.
Fischer, Gregory	Johns Hopkins Univ. - CISST ERC
Gobbi, David G.	Queen's Univ.
09:20-09:40	FrA8.3
<i>Development of a Skincare Robot</i> , pp. 2963-2968. Attachment	
Tsumaki, Yuichi	Hirosaki Univ.
Kon, Takayuki	MITSUBISHI ELECTRIC Corp.
Suginuma, Asami	MEC Information Development Co., Ltd.
Imada, Kei	Vuteq Corp.
Sekiguchi, Akinori	Hirosaki Univ.
Nenchev, Dragomir	Musashi Inst. of Tech.
Nakano, Hajime	Hirosaki Univ. Graduate School of Mdicine
Hanada, Katsumi	Hirosaki Univ. Hospital
09:40-10:00	FrA8.4
<i>Robotic Natural Orifice Translumenal Endoscopic Surgery</i> , pp. 2969-2974.	
Lehman, Amy C.	Univ. of Nebraska-Lincoln
Dumpert, Jason	Univ. of Nebraska-Lincoln
Wood, Nathan A.	Univ. of Nebraska-Lincoln
Oleynikov, Dmitry	Univ. of Nebraska Medical Center
Farritor, Shane	Univ. of Nebraska Lincoln
10:00-10:20	FrA8.5
<i>A Robotic Needle Guide for Prostate Brachytherapy</i> , pp. 2975-2981. Attachment	
Salcudean, Septimiu E.	Univ. of British Columbia

Prananta, Thomas D.	Univ. of British Columbia
Morris, William J.	BC Cancer Agency
Spadinger, Ingrid	BC Cancer Agency
10:20-10:40	FrA8.6
<i>MIRA V: An Integrated System for Minimally Invasive Robot-Assisted Lung Brachytherapy</i> , pp. 2982-2987.	
Trejos, Ana Luisa	London Health Sciences Centre
Lin, Amy Wei	Univ. of Western Ontario
Mohan, Shiva	The Univ. of Western Ontario
Bassan, Harmanpreet	The Univ. of Western Ontario
Edirisinghe, Chandima	Univ. of Western Ontario
Patel, Rajni	The Univ. of Western Ontario
Lewis, Craig	London Health Sciences Centre
Yu, Edward	Univ. of Western Ontario
Fenster, Aaron	Robarts Res. Inst.
Malthaner, Richard	Univ. of Western Ontario

FrA9 209

Range Sensing (Regular Sessions)

Chair: Ikeuchi, Katsushi	The Univ. of Tokyo
Co-Chair: Howard, Andrew	JPL
08:40-09:00	FrA9.1
<i>4D Scan Registration with the SR-3000 LIDAR</i> , pp. 2988-2993.	
Stipes, Jason	JHU/APL
Cole, John	JHU/APL
09:00-09:20	FrA9.2
<i>Rigorously Bayesian Range Finder Sensor Model for Dynamic Environments</i> , pp. 2994-3001.	
De Laet, Tinne	Katholieke Univ. Leuven
De Schutter, Joris	Katholieke Univ. Leuven
Bruyninckx, Herman	Katholieke Univ. Leuven
09:20-09:40	FrA9.3
<i>A Low-Cost Laser Distance Sensor</i> , pp. 3002-3008.	
Konolige, Kurt	SRI International
Augenbraun, Joseph	Neato Robotics
Donaldson, Nick	Neato Robotics
Fiebig, Charles	Neato Robotics
Shah, Pankaj	Neato Robotics
09:40-10:00	FrA9.4
<i>Dealing with Laser Scanner Failure: Mirrors and Windows</i> , pp. 3009-3015. Attachment	
Yang, Shao-Wen	National Taiwan Univ.
Wang, Chieh-Chih	National Taiwan Univ.
10:00-10:20	FrA9.5
<i>Antipodal Gray Codes for Structured Light</i> , pp. 3016-3021.	
Kim, Daesik	Sungkyunkwan Univ.
Ryu, Moonwook	Sungkyunkwan Univ.
Lee, Sukhan	Sungkyunkwan Univ.
10:20-10:40	FrA9.6
<i>A 200Hz Small Range Image Sensor Using a Multi-Spot Laser Projector</i> , pp. 3022-3027.	
Tateishi, Masateru	Chuo Univ.
Ishiyama, Hidetoshi	Chuo Univ.
Umeda, Kazunori	Chuo Univ.

FrA10 211

Climbing Robots (Regular Sessions)

Chair: Provancher, William	Univ. of Utah
Co-Chair: Hirose, Shigeo	Tokyo Inst. of Tech.
08:40-09:00	FrA10.1
<i>Electroadhesive Robots — Wall Climbing Robots Enabled by a Novel, Robust, and Electrically Controllable Adhesion Technology</i> , pp. 3028-3033. Attachment	
Prahlad, Harsha	SRI International
Pelrine, Ron	SRI International
Stanford, Scott	SRI International
Marlow, John	SRI International
Kornbluh, Roy	SRI International
09:00-09:20	FrA10.2
<i>Basic Systematic Experiments and New Type Child Unit of Anchor Climber: Swarm Type Wall Climbing Robot System</i> , pp. 3034-3039. Attachment	
Suzuki, Masataka	Tokyo Inst. of Tech.
Kitai, Shinya	Tokyo Inst. of Tech.
Hirose, Shigeo	Tokyo Inst. of Tech.
09:20-09:40	FrA10.3
<i>ROCR: Dynamic Vertical Wall Climbing with a Pendular Two-Link Mass-Shifting Robot</i> , pp. 3040-3045.	

Jensen-Segal, Samuel	Univ.
Virost, Steven	Univ.
Provancher, William	Univ. of Utah
09:40-10:00	FrA10.4
<i>A Body Joint Improves Vertical to Horizontal Transitions of a Wall-Climbing Robot</i> , pp. 3046-3051.	
Daltorio, Kathryn A	Case Western Res. Univ.
Witushynsky, Timothy	Case Western Res. Univ.
Wile, Gregory	Case Western Res. Univ.
Palmer, Luther	Case Western Res. Univ.
Malek, Anas	Case Western Res. Univ.
Ahmad, Mohd Rasyid	Case Western Res. Univ.
Southard, Lori	Case Western Res. Univ. Biologically Inspired
Gorb, Stanislav N	Max-Planck-Inst. for Metals Res.
Ritzmann, Roy Earl	Case Western Res. Univ.
Quinn, Roger, D.	Case Western Res. Univ.
10:00-10:20	FrA10.5
<i>Ladder Climbing Control for Limb Mechanism Robot "ASTERISK"</i> , pp. 3052-3057.	
Fujii, Shota	Osaka Univ.
Inoue, Kenji	Yamagata Univ.
Takubo, Tomohito	Osaka Univ.
Mae, Yasushi	Osaka Univ.
Arai, Tatsuo	Graduate School of Engineering Science, Osaka Univ.
10:20-10:40	FrA10.6
<i>Gecko Inspired Micro-Fibrillar Adhesives for Wall Climbing Robots on Micro/Nanoscale Rough Surfaces</i> , pp. 3058-3063.	
Aksak, Burak	Carnegie Mellon Univ.
Murphy, Michael	Carnegie Mellon Univ.
Sitti, Metin	Carnegie Mellon Univ.

FrA11

212

Motion and Action Recognition (Regular Sessions)

Chair: Su, Jianbo	Shanghai Jiao Tong Univ.
Co-Chair: Prassler, Erwin	Univ. Bonn-Rhein-Sieg
08:40-09:00	FrA11.1
<i>Ubiquitous Robotics in Physical Human Action Recognition: A Comparison between Dynamic ANNs and GP</i> , pp. 3064-3069.	
Theodoridis, Theodoros	Uni. of Essex
09:00-09:20	FrA11.2
<i>A Hierarchical Motion Trajectory Signature Descriptor</i> , pp. 3070-3075.	
Wu, Shandong	City Univ. of Hong Kong
Li, Y.F.	City Univ. of Hong Kong
Zhang, Jianwei	Univ. of Hamburg
09:20-09:40	FrA11.3
<i>Motion Estimation Using Multiple Non-Overlapping Cameras for Small Unmanned Aerial Vehicles</i> , pp. 3076-3081.	
Kim, Jun-Sik	Carnegie Mellon Univ.
Hwangbo, Myung	Carnegie Mellon Univ.
Kanade, Takeo	Carnegie Mellon Univ.
09:40-10:00	FrA11.4
<i>Trajectory Specification Via Sparse Waypoints for Eye-In-Hand Robots Requiring Continuous Target Visibility</i> , pp. 3082-3087.	
Chan, Ambrose	Univ. of British Columbia
Croft, Elizabeth	Univ. of British Columbia
Little, James J.	UBC
10:00-10:20	FrA11.5
<i>Natural Hand Posture Recognition Based on Zernike Moments and Hierarchical Classifier</i> , pp. 3088-3093.	
Gu, Lizhong	Shanghai Jiaotong Univ.
Su, Jianbo	Shanghai Jiao Tong Univ.
10:20-10:40	FrA11.6
<i>Basic Behavior Acquisition Based on Multisensor Integration of a Robot Head</i> , pp. 3094-3099.	
Liu, Chenggang	Shanghai Jiaotong Univ.
Su, Jianbo	Shanghai Jiao Tong Univ.

FrA12

214

Actuation, Sensing, and Manipulation for Micro-Robots (Regular Sessions)

Chair: Sun, Yu	Univ. of Toronto
Co-Chair: van West, Ewoud Frank	The Univ. of Tokyo
08:40-09:00	FrA12.1
<i>MicroNewton Force-Controlled Manipulation of Biomaterials Using a Monolithic MEMS Microgripper with Two-Axis Force Feedback</i> , pp. 3100-3105.	
Kim, Keekyoung	Univ. of Toronto
Liu, Xinyu	Univ. of Toronto
Zhang, Yong	Univ. of Toronto
Sun, Yu	Univ. of Toronto
09:00-09:20	FrA12.2

<i>Development of a Compact Vision System for "Automated Nuclear Transplantation Project", pp. 3106-3111.</i>		
Uvet, Huseyin		Osaka Univ.
Arai, Tatsuo	Graduate School of Engineering Science,	Osaka Univ.
Mae, Yasushi		Osaka Univ.
Takubo, Tomohito		Osaka Univ.
09:20-09:40		FrA12.3
<i>Optimum Design and Development of a XY Flexure Micromanipulator for Micro Scale Positioning, pp. 3112-3117.</i>		
Li, Yangmin		Univ. of Macau
Xu, Qingsong		Univ. of Macau
09:40-10:00		FrA12.4
<i>Simulation and Experimental Evaluation of Laser-Structured Actuators for a Mobile Microrobot, pp. 3118-3123.</i>		
Edeler, Christoph		Univ. of Oldenburg
Fatikow, Sergej		Univ. of Oldenburg
10:00-10:20		FrA12.5
<i>Serial Algorithm for High-Speed Autofocusing of Cells Using Depth from Diffraction (DFDi) Method, pp. 3124-3129. Attachment</i>		
Makise, Soshiro		Univ. of Tokyo
Oku, Hiromasa		Univ. of Tokyo
Ishikawa, Masatoshi		Univ. of Tokyo
10:20-10:40		FrA12.6
<i>Mobile Microscope: A New Concept for Hand-Held Microscopes with Image Stabilization, pp. 3130-3134. Attachment</i>		
Ishikawa, Takahiko		Univ. of Tokyo
Oku, Hiromasa		Univ. of Tokyo
Ishikawa, Masatoshi		Univ. of Tokyo

FrA13 210

Modular and Distributed Robotics Programming (Regular Sessions)

Chair: Campbell, Jason		Intel Americas, Inc.
Co-Chair: Mostofi, Yasamin		Univ. of New Mexico
08:40-09:00		FrA13.1
<i>Distributed, Dynamic, and Autonomous Reconfiguration Planning for Chain-Type Self-Reconfigurable Robots, pp. 3135-3140.</i>		
Hou, Feili		Univ. of Southern California
Shen, Wei-Min		USC Information Science Inst.
09:00-09:20		FrA13.2
<i>Anatomy-Based Organization of Modular Robots, pp. 3141-3148. Attachment</i>		
Christensen, David Johan		Univ. of Southern Denmark
Campbell, Jason		Intel Americas, Inc.
09:20-09:40		FrA13.3
<i>EM-Cube: Cube-Shaped, Self-Reconfigurable Robots Sliding on Structure Surfaces, pp. 3149-3155. Attachment</i>		
An, Byoung Kwon		Dran Computer Science Lab.
09:40-10:00		FrA13.4
<i>Programming Modular Robots with Locally Distributed Predicates, pp. 3156-3162.</i>		
De Rosa, Michael		Carnegie Mellon Univ.
Campbell, Jason		Intel Americas, Inc.
Pillai, Padmanabhan		Intel Res. Pittsburgh
Goldstein, Seth		Carnegie Mellon Univ.
Lee, Peter		Carnegie Mellon Univ.
10:00-10:20		FrA13.5
<i>S+T: An Algorithm for Distributed Multirobot Task Allocation Based on Services for Improving Robot Cooperation, pp. 3163-3168.</i>		
Viguria, Antidio		Georgia Inst. of Tech.
Maza, Ivan		Univ. of Seville
Ollero, Anibal		Univ. of Seville
10:20-10:40		FrA13.6
<i>Communication-Aware Motion Planning in Fading Environments (I), pp. 3169-3174.</i>		
Mostofi, Yasamin		Univ. of New Mexico

FrPP Pavilion

Plenary Session III (Plenary Sessions)

Chair: Sukhatme, Gaurav		Univ. of Southern California
Co-Chair: Schaal, Stefan		Univ. of Southern California
11:00-12:00		FrPP.1
<i>Brain-Controlled Robots*.</i>		
Kawato, Mitsuo		ATR

FrB1 101

Humanoid Robot Manipulation (Regular Sessions)

Chair: Yoshida, Eiichi		National Inst. of AIST
Co-Chair: Little, James J.		UBC
13:40-14:00		FrB1.1
<i>Humanoid Teleoperation for Whole Body Manipulation, pp. 3175-3180.</i>		
Stilman, Mike		Carnegie Mellon Univ.
Nishiwaki, Koichi		National Inst. of AIST

Kagami, Satoshi	National Inst. of AIST
14:00-14:20	FrB1.2
<i>Whole-Body Motion Planning for Pivoting Based Manipulation by Humanoids</i> , pp. 3181-3186.	
Yoshida, Eiichi	National Inst. of AIST
Poirier, Mathieu	LAAS-CNRS
Laumond, Jean-Paul	LAAS-CNRS
Kanoun, Oussama	LAAS-CNRS
Lamiroux, Florent	CNRS
Alami, Rachid	CNRS
Yokoi, Kazuhito	National Inst. of AIST
14:20-14:40	FrB1.3
<i>Robust Balance Optimization Control of Humanoid Robots with Multiple Non Coplanar Grasps and Frictional Contacts.</i> , pp. 3187-3193.	
Attachment	
Collette, Cyrille	Commissariat à l'Energie Atomique
Micaelli, Alain	Commissariat à l'Energie Atomique
Lemerle, Pierre	Inst. National de Recherche et de Sécurité
Andriot, Claude	Lab. de Simulation Interactives
14:40-15:00	FrB1.4
<i>How to Learn Accurate Grid Maps with a Humanoid</i> , pp. 3194-3199.	
Stachniss, Cyrill	Univ. of Freiburg
Bennewitz, Maren	Univ. of Freiburg
Grisetti, Giorgio	Univ. of Freiburg
Behnke, Sven	Univ. of Freiburg
Burgard, Wolfram	Univ. of Freiburg
15:00-15:20	FrB1.5
<i>Real-Time (self)-Collision Avoidance Task on a HRP-2 Humanoid Robot</i> , pp. 3200-3205. Attachment	
Stasse, Olivier	CNRS/AIST
Escande, Adrien	CNRS/AIST
Mansard, Nicolas	AIST/CNRS JRL-Japan
Miossec, Sylvain	National Inst. of Advance Industrial Science and
Evrard, Paul	CNRS/AIST
Kheddar, Abderrahmane	AIST/CNRS
15:20-15:40	FrB1.6
<i>Coordination between Oscillators: An Important Feature for Robust Bipedal Walking</i> , pp. 3206-3212.	
Huang, Weiwei	National Univ. of Singapore
Chew, Chee Meng	National Univ. of Singapore
Hong, Geok Soon	National Univ. of Singapore

FrB2

102

Visual Servoing Systems (Regular Sessions)

Chair: De Luca, Alessandro	Univ. di Roma La Sapienza
Co-Chair: Hashimoto, Koichi	Tohoku Univ.
13:40-14:00	FrB2.1
<i>On the Efficient Second Order Minimization and Image-Based Visual Servoing</i> , pp. 3213-3218.	
Tahri, Tahri	Blaise Pascal
Mezouar, Youcef	Blaise Pascal Univ.
14:00-14:20	FrB2.2
<i>Efficient Visual Servoing with the ABCshift Tracking Algorithm</i> , pp. 3219-3224. Attachment	
Stolkin, Rustam	Stevens Inst. of Tech.
Florescu, Ionut	Stevens Inst. of Tech.
Baron, Morgan	Stevens Inst. of Tech.
Harrier, Colin	Stevens Inst. of Tech.
Kocherov, Boris	Stevens Inst. of Tech.
14:20-14:40	FrB2.3
<i>Visual Servoing Based on Gaussian Mixture Models</i> , pp. 3225-3230.	
Abdul Hafez, A. H.	Osmania University
Achar, Supreeth	IIIT, Hyderabad
Jawahar, C.V.	IIIT, Hyderabad
14:40-15:00	FrB2.4
<i>Visual Servoing with Exploitation of Redundancy: An Experimental Study</i> , pp. 3231-3237. Attachment	
De Luca, Alessandro	Univ. di Roma La Sapienza
Ferri, Massimo	Univ. di Roma "La Sapienza"
Oriolo, Giuseppe	Univ. di Roma
Robuffo Giordano, Paolo	Univ. di Roma "La Sapienza"
15:00-15:20	FrB2.5
<i>New Decoupled Visual Servoing Scheme Based on Invariants from Projection Onto a Sphere</i> , pp. 3238-3243.	
Tahri, Tahri	Blaise Pascal
Chaumette, Francois	INRIA
Mezouar, Youcef	Blaise Pascal Univ.
15:20-15:40	FrB2.6
<i>Analysis of Classical and New Visual Servoing Control Laws</i> , pp. 3244-3249.	

FrB3	103
Filtering and Classification (Regular Sessions)	
Chair: Roberts, Rodney	Florida State Univ.
Co-Chair: Riviere, Cameron	Carnegie Mellon Univ.
13:40-14:00	FrB3.1
<i>Kalman Filtering of Accelerometer and Electromyography (EMG) Data in Pathological Tremor Sensing System</i> , pp. 3250-3255.	
Widjaja, Ferdinan	Nanyang Tech. Univ. Singapore
Shee, Cheng Yap	Nanyang Tech. Univ. Singapore
Tun Latt, Win	Nanyang Tech. Univ.
Au, Wing Lok	National Neuroscience Inst.
Poignet, Philippe	LIRMM UMR 5506 CNRS UM2
Ang, Wei Tech	Nanyang Tech. Univ.
14:00-14:20	FrB3.2
<i>A State Estimator for Rejecting Noise and Tracking Bias in Inertial Sensors</i> , pp. 3256-3263.	
Johnson, Eric Allen	Univ. of Utah
Bamberg, Stacy	Univ. of Utah
Minor, Mark	Univ. of Utah
14:20-14:40	FrB3.3
<i>Human Detection Using Multimodal and Multidimensional Features</i> , pp. 3264-3269.	
Spinello, Luciano	ETH Zurich
Siegwart, Roland	ETH Zurich
14:40-15:00	FrB3.4
<i>A Boosting Approach for Object Classification in Biosonar Based Robot Navigation</i> , pp. 3270-3275.	
Beigi, Majid	Univ. of Tuebingen
Zell, Andreas	Univ. of Tuebingen
15:00-15:20	FrB3.5
<i>Vibration-Based Terrain Classification Using Surface Profile Input Frequency Responses</i> , pp. 3276-3283.	
Collins, Emmanuel	FAMU-FSU Coll. of Engineering
Coyle, Eric Joe	Florida State Univ. Florida A&M Univ.
15:20-15:40	FrB3.6
<i>Terrain Classification for Mobile Robots Traveling at Various Speeds: An Eigenspace Manifold Approach</i> , pp. 3284-3289.	
DuPont, Edmond	FAMU-FSU Coll. of Engineering
Moore, Carl A.	FAMU/FSU Coll. of Engineering
Roberts, Rodney	Florida State Univ.
FrB4	104
Swarms and Networks (Regular Sessions)	
Chair: Pappas, George J.	Univ. of Pennsylvania
Co-Chair: Poduri, Sameera	USC
13:40-14:00	FrB4.1
<i>Exploration of an Incremental Suite of Microscopic Models for Acoustic Event Monitoring Using a Robotic Sensor Network</i> , pp. 3290-3295.	
Cianci, Christopher M.	Ec. Pol. Federale de Lausanne
Pugh, Jim	EPFL
Martinoli, Alcherio	EPFL
14:00-14:20	FrB4.2
<i>Two Distributed Algorithms for Heterogeneous Sensor Network Deployment towards Maximum Coverage</i> , pp. 3296-3301.	
Lam, Miu-ling	The Chinese Univ. of Hong Kong
Liu, Yunhui	Chinese Univ. of Hong Kong
14:20-14:40	FrB4.3
<i>Parameter Estimation and Optimal Control of Swarm-Robotic Systems: A Case Study in Distributed Task Allocation</i> , pp. 3302-3307.	
Correll, Nikolaus	Massachusetts Inst. of Tech.
14:40-15:00	FrB4.4
<i>Cooperative Anchoring in Heterogeneous Multi-Robot Systems</i> , pp. 3308-3314.	
LeBlanc, Kevin	Orebro Univ.
Saffiotti, Alessandro	Orebro Univ.
FrB5	105
Learning Systems (Regular Sessions)	
Chair: Jenkins, Odest Chadwicke	Brown Univ.
Co-Chair: Lopez de Mantaras, Ramon	Spanish National Res. Council
13:40-14:00	FrB5.1
<i>Sparse Incremental Learning for Interactive Robot Control Policy Estimation</i> , pp. 3315-3320.	
Grollman, Daniel	Brown Univ.
Jenkins, Odest Chadwicke	Brown Univ.
14:00-14:20	FrB5.2
<i>Reinforcement Learning with Function Approximation for Cooperative Navigation Tasks</i> , pp. 3321-3327.	
Melo, Francisco S.	Inst. for Systems and Robotics, Inst. Superior
Ribeiro, Isabel	Inst. Superior Technico

14:20-14:40		FrB5.3
<i>Unsupervised Body Scheme Learning through Self-Perception</i> , pp. 3328-3333. Attachment		
Sturm, Jürgen		Univ. of Freiburg
Plagemann, Christian		Univ. of Freiburg
Burgard, Wolfram		Univ. of Freiburg
14:40-15:00		FrB5.4
<i>Human-Inspired Robot Task Learning from Human Teaching</i> , pp. 3334-3339.		
Wu, Xianghai		Univ. of Waterloo
Kofman, Jonathan		Univ. of Waterloo
15:00-15:20		FrB5.5
<i>Learning Tactic-Based Motion Models with Fast Particle Smoothing</i> , pp. 3340-3345.		
Gu, Yang		Carnegie Mellon Univ.
Veloso, Manuela		Carnegie Mellon Univ.
15:20-15:40		FrB5.6
<i>An Approximate Algorithm for Solving Oracular POMDPs</i> , pp. 3346-3352.		
Armstrong-Crews, Nicholas		Carnegie Mellon Univ.
Veloso, Manuela		Carnegie Mellon Univ.

FrB6 206

Robot Manipulator Control (Regular Sessions)

Chair: Scott, Nicholas		National Inst. of Standards and Tech.
Co-Chair: Carreira-Perpinan, Miguel		Univ. of California, Merced
13:40-14:00		FrB6.1
<i>A Line-Based Obstacle Avoidance Technique for Dexterous Manipulator Operations</i> , pp. 3353-3358.		
Scott, Nicholas		National Inst. of Standards and Tech.
Carignan, Craig		Georgetown Univ. ISIS Center
14:00-14:20		FrB6.2
<i>Continuous Control Law from Unilateral Constraints</i> , pp. 3359-3364.		
Mansard, Nicolas		AIST/CNRS JRL-Japan
Khatib, Oussama		Stanford Univ.
14:20-14:40		FrB6.3
<i>A Velocity Observer Based on Friction Adaptation</i> , pp. 3365-3370.		
Lenain, Roland		Cemagref
Robertsson, Anders		LTH, Lund Univ.
Johansson, Rolf		LTH, Lund Univ.
Shiriaev, Anton		Umea Univ.
Berducat, Michel		Cemagref
14:40-15:00		FrB6.4
<i>Adaptive Neural Network Tracking Control of Manipulators Using Quaternion Feedback</i> , pp. 3371-3376.		
Cheng, Long		Inst. of Automation, Chinese Acad. of Sciences
Hou, Zeng-Guang		Inst. of Automation, Chinese Acad. of Science
Tan, Min		Inst. of Automation, Chinese Acad. of Sciences
15:00-15:20		FrB6.5
<i>Practical Robust Control for Flexible Joint Robot Manipulator</i> , pp. 3377-3382.		
Yeon, Je Sung		Hanyang Univ.
Park, Jong Hyeon		Hanyang Univ.
15:20-15:40		FrB6.6
<i>Global Continuous Finite-Time Output Feedback Regulation of Robot Manipulators</i> , pp. 3383-3388.		
Su, Yuxin		Xidian Univ.
Zheng, Chunhong		Xidian Univ.
Muller, Peter C.		Univ. of Wuppertal

FrB7 207

Medical Robots and Systems (Regular Sessions)

Chair: Kumar, Rajesh		Johns Hopkins Univ.
Co-Chair: Sarkar, Nilanjan		Vanderbilt Univ.
13:40-14:00		FrB7.1
<i>Deformation Analysis and Active Compensation of Surgical Milling Robot Based on System Error Evaluation</i> , pp. 3389-3394.		
Sugita, Naohiko		The Univ. of Tokyo
Osa, Takayuki		The Univ. of Tokyo
Nakajima, Yoshikazu		The Univ. of Tokyo
Mitsuishi, Mamoru		The Univ. of Tokyo
14:00-14:20		FrB7.2
<i>Methods for End-Effector Coupling in Robot Assisted Interventions</i> , pp. 3395-3400.		
Burgner, Jessica		Univ. Karlsruhe (TH)
Zhang, Yaokun		Univ. Karlsruhe (TH)
Raczkowski, Joerg		Univ. of Karlsruhe (TH)
Eggers, Georg		Univ. Heidelberg
Muehling, Joachim		Univ. Heidelberg
Woern, Heinz		Univ. Karlsruhe

14:20-14:40		FrB7.3
<i>A Constrained Optimization Approach to Virtual Fixtures for Multi-Handed Tasks</i> , pp. 3401-3406. Attachment		
Kapoor, Ankur		Johns Hopkins Univ.
Taylor, Russell H.		The Johns Hopkins Univ.
14:40-15:00		FrB7.4
<i>Modeling of a Closed Loop Cable-Conduit Transmission System</i> , pp. 3407-3412.		
Agrawal, Varun		Purdue Univ.
Peine, William		Purdue Univ.
Yao, Bin		Purdue Univ.
15:00-15:20		FrB7.5
<i>Integrated Vision and Force Control in Suspended Cell Injection System: Towards Automatic Batch Biomanipulation</i> , pp. 3413-3418.		
Huang, Haibo		City Univ. of Hong Kong
Sun, Dong		City Univ. of Hong Kong
Mills, James K.		Univ. of Toronto
Cheng, Shuk Han		City Univ. of Hong Kong
15:20-15:40		FrB7.6
<i>Modeling and Analysis of DNA Hybridization Dynamics at Microarray Surface in Moving Fluid</i> , pp. 3419-3424.		
Hogg, Tad		HP Lab.
Zhang, Mingjun		Agilent
Yang, Ruoting		Washington Univ. in St. Louis

FrB8		208
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Force and Tactile Sensing (Regular Sessions)	
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Chair: Cutkosky, Mark		Stanford Univ.
Co-Chair: Ott, Christian		Univ. of Tokyo
13:40-14:00		FrB8.1
<i>A Robotic Finger Equipped with an Optical Three-Axis Tactile Sensor</i> , pp. 3425-3430.		
Ohka, Masahiro		Nagoya Univ. Graduate School of Information Science
Morisawa, Nobuyuki		Nagoya Univ. Graduate School of Engineering
Suzuki, Hirofumi		Nagoya Univ. Graduate School of Engineering
Takata, Jumpei		Olympus Corp.
Kobayashi, Hiroaki		Toyota Industries Company
Yussof, Hanafiah		Nagoya Univ.
14:00-14:20		FrB8.2
<i>Fingertip Force Control with Embedded Fiber Bragg Grating Sensors</i> , pp. 3431-3436.		
Park, Yong-Lae		Stanford Univ.
Ryu, Seok Chang		Stanford Univ.
Black, Richard J.		Intelligent Fiber Optic Systems Corp.
Moslehi, Behzad		Intelligent Fiber Optics Systems Corp.
Cutkosky, Mark		Stanford Univ.
14:20-14:40		FrB8.3
<i>Nonlinear Modeling of Low Cost Force Sensors</i> , pp. 3437-3442.		
Lebossé, Cyrille		LSIIT
Bayle, Bernard		Univ. of Strasbourg
Renaud, Pierre		INSA Strasbourg
de Mathelin, Michel		Univ. of Strasbourg
14:40-15:00		FrB8.4
<i>Low Force Control Scheme for Object Hardness Distinction in Robot Manipulation Based on Tactile Sensing</i> , pp. 3443-3448.		
Yussof, Hanafiah		Nagoya Univ.
Ohka, Masahiro		Nagoya Univ. Graduate School of Information Science
Takata, Jumpei		Olympus Corp.
Nasu, Yasuo		Yamagata Univ.
Yamano, Mitsuhiro		Yamagata Univ.
15:00-15:20		FrB8.5
<i>A Wrench-Sensitive Touch Pad Based on a Parallel Structure</i> , pp. 3449-3454.		
Frigola, Roger		UPC-CSIC
Ros, Lluís		UPC-CSIC
Roure, Francesc		UPC
Thomas, Federico		CSIC-UPC
15:20-15:40		FrB8.6
<i>12D Force and Acceleration Sensing: A Helpful Experience Report on Sensor Characteristics</i> , pp. 3455-3462.		
Kroeger, Torsten		Tech. Univ. of Braunschweig
Kubus, Daniel		Tech. Univ. of Braunschweig
Wahl, Friedrich M.		Tech. Univ. of Braunschweig

FrB9		209
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Human Robot Auditory Interaction (Regular Sessions)	
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Chair: Lee, Ju-Jang		KAIST
13:40-14:00		FrB9.1
<i>Embedded Auditory System for Small Mobile Robots</i> , pp. 3463-3468.		
Bričre, Simon		Univ. de Sherbrooke

Valin, Jean Marc Michaud, Francois Létourneau, Dominic	CSIRO Univ. de Sherbrooke Univ. de Sherbrooke
14:00-14:20 <i>A Robot Referee for Rock-Paper-Scissors Sound Games</i> , pp. 3469-3474.	FrB9.2
Nakadai, Kazuhiro Yamamoto, Shunichi Okuno, Hiroshi G. Nakajima, Hirofumi Hasegawa, Yuji Tsuji, Hiroshi	Honda Res. Inst. Japan Co., Ltd. Graduate School of Informatics, Kyoto Univ. Kyoto Univ. Honda Res. Inst. Japan Co., Ltd. Honda Res. Inst. Japan Co., Ltd. Honda Res. Inst. Japan Co., Ltd.
14:20-14:40 <i>Robust Estimation of Sound Direction for Robot Interface</i> , pp. 3475-3480.	FrB9.3
Kim, Cheol-Taek Choi, Tae-Yong Choi, ByoungSuk Lee, Ju-Jang	Korea Advanced Inst. of Science & Tech. Korea Advanced Inst. of Science and Tech. Pusan National Univ. KAIST
14:40-15:00 <i>Try Something Else! When Users Change Their Discursive Behavior in Human-Robot Interaction</i> , pp. 3481-3486.	FrB9.4
Lohse, Manja Rohlfing, Katharina Wrede, Britta Sagerer, Gerhard	Bielefeld Univ. Bielefeld Univ. Bielefeld Univ. Univ. of Bielefeld, Faculty of Tech.
15:00-15:20 <i>Experimental Examination in Simulated Interactive Situation between People and Mobile Robot with Preliminary-Announcement and Indication Function of Upcoming Operation</i> , pp. 3487-3494.	FrB9.5
Matsumaru, Takafumi	Shizuoka Univ.
15:20-15:40 <i>Two-Channel-Based Voice Activity Detection for Humanoid Robots in Noisy Home Environments</i> , pp. 3495-3501.	FrB9.6
Kim, Hyun-Don Komatani, Kazunori Ogata, Tetsuya Okuno, Hiroshi G.	Kyoto Univ. Kyoto Univ. Kyoto Univ. Kyoto Univ.
FrB10	211
Modular Robotics Design (Regular Sessions)	
Chair: Sproewitz, Alexander Co-Chair: Yim, Mark	EPFL Univ. of Pennsylvania
13:40-14:00 <i>Development of Modular and Reconfigurable Robot Development of Modular and Reconfigurable Robot with Multiple Working Modes</i> , pp. 3502-3507.	FrB10.1
Liu, Guangjun He, Xiaojia Yuan, Jing Abdul, Sajan Goldenberg, Andrew	Ryerson Univ. Ryerson Univ. Ryerson Univ. Ryerson Univ. Univ. of Toronto
14:00-14:20 <i>An Active Connection Mechanism for Modular Self-Reconfigurable Robotic Systems Based on Physical Latching</i> , pp. 3508-3513.	FrB10.2
Sproewitz, Alexander Asadpour, Masoud Bourquin, Yvan Ijspeert, Auke	EPFL EPFL Swiss Federal Inst. of Tech. (EPFL) EPFL
14:20-14:40 <i>From Crystals to Lattice Robots</i> , pp. 3514-3519.	FrB10.3
Brener, Nicolas Ben Amar, Faiz Bidaud, Philippe	Univ. Pierre et Marie Curie Paris VI, Lab. Univ. Pierre et Marie Curie, Paris 6 Univ. Pierre et Marie Curie - Paris 6
14:40-15:00 <i>Decentralised Fault Tolerance and Fault Detection of Modular and Reconfigurable Robots with Joint Torque Sensing</i> , pp. 3520-3526.	FrB10.4
Abdul, Sajan Liu, Guangjun	Ryerson Univ. Ryerson Univ.
15:00-15:20 <i>Adaptive Reconfiguration of a Modular Robot through Heterogeneous Inter-Module Connections</i> , pp. 3527-3532. Attachment	FrB10.5
Shimizu, Masahiro Kato, Takuma Lungarella, Max Ishiguro, Akio	Tohoku Univ. Tohoku Univ. Artificial Intelligence Lab. Tohoku Univ.
15:20-15:40 <i>How Morphology Affects Self-Assembly in a Stochastic Modular Robot</i> , pp. 3533-3538. Attachment	FrB10.6
Miyashita, Shuhei Lungarella, Max	Univ. of Zurich Artificial Intelligence Lab.

FrB11		212
Social Robots and Gesture Recognition (Regular Sessions)		
Chair: Breazeal, Cynthia		MIT
Co-Chair: Dudek, Gregory		McGill Univ.
13:40-14:00		FrB11.1
<i>Learning from Human Teachers with Socially Guided Exploration</i> , pp. 3539-3544. Attachment		
Breazeal, Cynthia		MIT
Thomaz, Andrea Lockerd		Georgia Inst. of Tech.
14:00-14:20		FrB11.2
<i>Toward Designing a Robot That Learns Actions from Parental Demonstrations</i> , pp. 3545-3550.		
Nagai, Yukie		Bielefeld Univ.
Muhl, Claudia		Bielefeld Univ.
Rohlfing, Katharina		Bielefeld Univ.
14:20-14:40		FrB11.3
<i>Auditory Mood Detection for Social and Educational Robots</i> , pp. 3551-3556.		
Ruvolo, Paul		UCSD
Fasel, Ian		Univ. of Texas at Austin
Movellan, Javier		Univ. California San Diego
14:40-15:00		FrB11.4
<i>A Natural Gesture Interface for Operating Robotic Systems</i> , pp. 3557-3563.		
Xu, Anqi		McGill Univ.
Dudek, Gregory		McGill Univ.
Sattar, Junaed		McGill Univ.
15:00-15:20		FrB11.5
<i>Can I Be of Assistance? the Intelligence behind an Assistive Robot</i> , pp. 3564-3569.		
Nejat, Goldie		SUNY at Stony Brook
Ficocelli, Maurizio		State Univ. of New York (SUNY) at Stony Brook
15:20-15:40		FrB11.6
<i>An Intuitive Interface for a Cognitive Programming by Demonstration System</i> , pp. 3570-3575.		
Brageul, David		The Univ. of Auckland
Vukanovic, Slobodan		Univ. of Auckland
MacDonald, Bruce		Univ. of Auckland
FrB12		214
Novel Actuators for Manipulation (Regular Sessions)		
Chair: Asada, Harry		MIT
Co-Chair: Wood, Robert		Harvard Univ.
13:40-14:00		FrB12.1
<i>Smart Manipulator Actuated by Ultra-Sonic Motors for Lunar Exploration</i> , pp. 3576-3581.		
Kubota, Takashi		JAXA ISAS
Tada, Kouhei		Chuo Univ.
Kunii, Yasuharu		Chuo Univ.
14:00-14:20		FrB12.2
<i>Static Lumped Parameter Model for Nested PZT Cellular Actuators with Exponential Strain Amplification Mechanisms</i> , pp. 3582-3587.		
Attachment		
Ueda, Jun		Nara Inst. of Science and Tech.
Secord, Thomas		Massachusetts Inst. of Tech.
Asada, Harry		MIT
14:20-14:40		FrB12.3
<i>A Linked Manipulator with Ion-Polymer Metal Composite (IPMC) Joints for Soft and Micromanipulation</i> , pp. 3588-3593.		
Kruusmaa, Maarja		Tartu Univ.
Hunt, Andres		Tartu Univ.
Punning, Andres		Tartu Univ.
Anton, Mart		Tartu Univ.
Aabloo, Alvo		Tartu Univ.
14:40-15:00		FrB12.4
<i>Development of a New Linear Actuator for Androids</i> , pp. 3594-3599.		
Mishima, Masayuki		Osaka Univ.
Ishiguro, Hiroshi		Osaka Univ.
Hirata, Katsuhiro		Osaka Univ.
15:00-15:20		FrB12.5
<i>Micro Rotary-Linear Ultrasonic Motor for Endovascular Diagnosis and Surgery</i> , pp. 3600-3605.		
Mashimo, Tomoaki		TUAT
Toyama, Shigeki		TUAT
15:20-15:40		FrB12.6
<i>Differential Elastic Actuator for Robotic Interaction Tasks</i> , pp. 3606-3611.		
Lauria, Michel		Univ. de Sherbrooke
Legault, Marc-Antoine		Univ. de Sherbrooke
Lavoie, Marc-André		Univ. de Sherbrooke

FrB13

210

Assembly and Manufacturing (Regular Sessions)

- Chair: Suarez, Raul
Co-Chair: Tornero, Josep
Tech. Univ. of Catalonia
Tech. Univ. of Valencia
- 13:40-14:00
A Novel Optimal Assembly Algorithm for the Haptic Interface Application of a Virtual Maintenance System, pp. 3612-3617.
Christiand
Yoon, Jungwon
Gyeongsang National Univ.
Gyeongsang National Univ.
FrB13.1
- 14:00-14:20
Modeling and Analysis of Bernoulli Production Systems with Split and Merge, pp. 3618-3623.
Liu, Yang
Li, Jingshan
Univ. of Kentucky
Univ. of Kentucky
FrB13.2
- 14:20-14:40
Quantitative Evaluation of Physical Assembly Support in Human Supporting Production System "Attentive Workbench", pp. 3624-3629.
Sugi, Masao
Matsumura, Ipppei
Tamura, Yusuke
Ota, Jun
Arai, Tamio
The Univ. of Tokyo
The Univ. of Tokyo
The Univ. of Tokyo
Univ. of Tokyo
FrB13.3
- 14:40-15:00
Development of a Dual-Stage Virtual Metrology Architecture for TFT-LCD Manufacturing, pp. 3630-3635.
Su, Yu-Chuan
Tsai, Wen-Huang
Cheng, Fan-Tien
Wu, Wei-Ming
Far East Univ.
National Cheng Kung Univ.
National Cheng Kung Univ.
National Cheng Kung Univ.
FrB13.4
- 15:00-15:20
A Novel Key-Variable Sifting Algorithm for Virtual Metrology, pp. 3636-3641.
Lin, Tung-Ho
Cheng, Fan-Tien
Ye, Aeo-Juo
Wu, Wei-Ming
Hung, Min-Hsiung
National Cheng Kung Univ.
National Cheng Kung Univ.
National Cheng Kung Univ.
National Cheng Kung Univ.
Chung Cheng Inst. of Tech. National Defense
FrB13.5
- 15:20-15:40
Demonstrating the Safety and Performance of a Velocity Sourced Series Elastic Actuator, pp. 3642-3647.
Wyeth, Gordon Fraser
Univ. of Queensland
FrB13.6

FrC1

101

Humanoid Robots (Regular Sessions)

- Chair: Kiguchi, Kazuo
Co-Chair: Peters, Jan
Saga Univ.
Max-Planck Inst. for Biological Cybernetics
- 16:00-16:20
Control Methods Based on Neural Network Forward and Inverse Models for a Biomechanical Structured Vocal Cord Model on an Anthropomorphic Talking Robot, pp. 3648-3653.
Fukui, Kotaro
Shintaku, Eiji
Shimomura, Akihiro
Sakakibara, Nana
Ishikawa, Yuma
Honda, Masaaki
Takanishi, Atsuo
Waseda Univ.
Waseda Univ.
Waseda University
Waseda Univ.
Waseda Univ.
Waseda Univ.
Waseda Univ.
FrC1.1
- 16:20-16:40
Development of Waseda Flutist Robot WF-4RIV: Implementation of Auditory Feedback System, pp. 3654-3659.
Solis, Jorge
Taniguchi, Koichi
Ninomiya, Takeshi
Yamamoto, Tetsuro
Takanishi, Atsuo
Waseda Univ.
Waseda Univ.
Waseda Univ.
Waseda Univ.
Waseda Univ.
FrC1.2
- 16:40-17:00
Who Am I Talking with? a Face Memory for Social Robots, pp. 3660-3665.
Hanheide, Marc
Wrede, Sebastian
Lang, Christian
Sagerer, Gerhard
Faculty of Tech. Bielefeld Univ.
Bielefeld Univ.
Bielefeld Univ.
Univ. of Bielefeld, Faculty of Tech.
FrC1.3
- 17:00-17:20
A Study of a 4DOF Upper-Limb Power-Assist Intelligent Exoskeleton with Visual Information for Perception-Assist, pp. 3666-3671.
Kiguchi, Kazuo
Liyanage, Manoj
Saga Univ.
Univ. of Saga, Japan
FrC1.4
- 17:20-17:40
Biomechanical Energy Harvesting: Apparatus and Method, pp. 3672-3677.
FrC1.5

Li, Qingguo	simon fraser Univ.
Naing, Veronica	simon fraser Univ.
Hoffer, Andy	simon fraser Univ.
Weber, Doug	Univ. of Pittsburgh
Kuo, Arthur	Univ. of Michigan
Donelan, Max	simon fraser Univ.
17:40-18:00	FrC1.6
<i>Smooth and Continuous Human Gait Phase Detection Based on Foot Pressure Patterns</i> , pp. 3678-3683.	
Kong, Kyoungchul	Univ. of California, Berkeley
Tomizuka, Masayoshi	Univ. of California

FrC2 102

Visual SLAM (Regular Sessions)

Chair: Wyeth, Gordon Fraser	Univ. of Queensland
Co-Chair: Mourikis, Anastasios	Univ. of Minnesota
16:00-16:20	FrC2.1
<i>Single Camera Vision-Only SLAM on a Suburban Road Network</i> , pp. 3684-3689. Attachment	
Milford, Michael	The Univ. of Queensland
Wyeth, Gordon Fraser	Univ. of Queensland
16:20-16:40	FrC2.2
<i>Active Gaze Control for Attentional Visual SLAM</i> , pp. 3690-3697. Attachment	
Frintrop, Simone	Univ. of Bonn
Jensfelt, Patric	Royal Inst. of Tech.
16:40-17:00	FrC2.3
<i>Removing Scale Biases and Ambiguity from 6DoF Monocular SLAM Using Inertial</i> , pp. 3698-3703.	
Lupton, Todd	Univ. of Sydney
Sukkarieh, Salah	Univ. of Sydney
17:00-17:20	FrC2.4
<i>Interacting Multiple Model Monocular SLAM</i> , pp. 3704-3709. Attachment	
Civera, Javier	Univ. de Zaragoza
Davison, Andrew J	Imperial Coll. London
Montiel, J.M.M	Univ. de Zaragoza
17:20-17:40	FrC2.5
<i>A Square Root Unscented Kalman Filter for Visual Monoslam</i> , pp. 3710-3716.	
Holmes, Steven	Univ. of Oxford
Klein, Georg	Univ. of Oxford
Murray, David	Univ. of Oxford
17:40-18:00	FrC2.6
<i>Gamma-SLAM: Using Stereo Vision and Variance Grid Maps for SLAM in Unstructured Environments</i> , pp. 3717-3724. Attachment	
Marks, Tim K.	Univ. of California San Diego
Howard, Andrew	JPL
Bajracharya, Max	JPL
Cottrell, Garrison W.	Univ. of California at San Diego
Matthies, Larry	California Inst. of Tech.

FrC3 103

Motion and Path Planning (Regular Sessions)

Chair: Kuffner, James	Carnegie Mellon Univ.
Co-Chair: Kobilarov, Marin	Univ. of Southern California
16:00-16:20	FrC3.1
<i>Towards Locally Computable Polynomial Navigation Functions for Convex Obstacle Workspaces</i> , pp. 3725-3730.	
Lionis, Grigoris	National Tech. Univ. of Athens
Papageorgiou, Xanthi	National Tech. Univ. of Athens
Kyriakopoulos, Kostas	National Tech. Univ. of Athens
16:20-16:40	FrC3.2
<i>Artificial Potential Functions for Highway Driving with Collision Avoidance</i> , pp. 3731-3736. Attachment	
Wolf, Michael	California Inst. of Tech.
Burdick, Joel	California Inst. of Tech.
16:40-17:00	FrC3.3
<i>Efficient Path Planning for Mobile Robots in Environments with Deformable Objects</i> , pp. 3737-3742.	
Frank, Barbara	Univ. of Freiburg
Becker, Markus	Univ. of Freiburg
Stachniss, Cyrill	Univ. of Freiburg
Burgard, Wolfram	Univ. of Freiburg
Teschner, Matthias	Univ. of Freiburg
17:00-17:20	FrC3.4
<i>An Efficient Retraction-Based RRT Planner</i> , pp. 3743-3750.	
Zhang, Liangjun	Univ. of North Carolina at Chapel Hill
Manocha, Dinesh	Univ. of north carolina at chapel hill
17:20-17:40	FrC3.5
<i>Impact of Workspace Decompositions on Discrete Search Leading Continuous Exploration (DSLX) Motion Planning</i> , pp. 3751-3756.	

Plaku, Erion	Rice Univ.
Kavraki, Lydia	Rice Univ.
Moshe, Vardi	Rice Univ.
17:40-18:00	FrC3.6
<i>Adaptive Workspace Biasing for Sampling-Based Planners</i> , pp. 3757-3762.	
Zucker, Matthew	Carnegie Mellon Univ.
Kuffner, James	Carnegie Mellon Univ.
Bagnell, James	Carnegie Mellon Univ.

FrC4 104

Formation Control (Regular Sessions)

Chair: Gu, Dongbing	Univ. of Essex
Co-Chair: Cheah, C. C.	Nanyang Tech. Univ.
16:00-16:20	FrC4.1
<i>Cluster Space Specification and Control of a 3-Robot Mobile System</i> , pp. 3763-3768.	
Mas, Ignacio	Santa Clara Univ.
Petrovic, Ognjen	Santa Clara Univ.
Kitts, Christopher	Santa Clara Univ.
16:20-16:40	FrC4.2
<i>Robot Formations: Robots Allocation and Leader-Follower Pairs</i> , pp. 3769-3775.	
Monteiro, Sergio	Univ. of Minho
Bicho, Estela	Univ. of Minho
16:40-17:00	FrC4.3
<i>Non-Collision Conditions in Multi-Agent Robots Formation Using Local Potential Functions</i> , pp. 3776-3781.	
Hernández Martínez, Eduardo Gamaliel	CINVESTAV
Aranda-Bricaire, Eduardo	CINVESTAV
17:00-17:20	FrC4.4
<i>Using Dynamic Processing Windows for Robot Group Control</i> , pp. 3782-3789. Attachment	
Qadi, Ala' Qadi	Univ. of Nebraska-Lincoln
Goddard, Steve Goddar	Univ. of Nebraska-Lincoln
Huang, Jiayang Huang	Itron, Inc
Farritor, Shane	Univ. of Nebraska Lincoln
17:20-17:40	FrC4.5
<i>A Local Sensor Based Leader-Follower Flocking System</i> , pp. 3790-3795. Attachment	
Wang, Zongyao	Univ. of Essex
Gu, Dongbing	Univ. of Essex
17:40-18:00	FrC4.6
<i>Region Following Formation Control for Multi-Robot Systems</i> , pp. 3796-3801.	
Cheah, C. C.	Nanyang Tech. Univ.
Hou, Saing Paul	Nanyang Tech. Univ.
Slotine, Jean-Jacques E.	Massachusetts Inst. of Tech.

FrC5 105

Task and Behavioral Learning (Regular Sessions)

Chair: Grupen, Rod	Univ. of Massachusetts
Co-Chair: Melo, Francisco S.	Carnegie Mellon Univ.
16:00-16:20	FrC5.1
<i>Using Learned Affordances for Robotic Behavior Development</i> , pp. 3802-3807.	
Dogar, Mehmet Remzi	DIST- Univ. of Genoa and Italian Institute of Tech.
Ugur, Emre	Middle East Tech. Univ.
Sahin, Erol	Middle East Tech. Univ.
Cakmak, Maya	Georgia Inst. of Tech.
16:20-16:40	FrC5.2
<i>Pushing Using Learned Manipulation Maps</i> , pp. 3808-3813.	
Walker, Sean	Stanford Univ.
Salisbury, Kenneth	Stanford Univ.
16:40-17:00	FrC5.3
<i>Intrinsically Motivated Hierarchical Manipulation</i> , pp. 3814-3819.	
Hart, Stephen	Univ. of Massachusetts Amherst
Sen, Shiraj	Univ. of Massachusetts
Grupen, Rod	Univ. of Massachusetts
17:00-17:20	FrC5.4
<i>Skill Decomposition by Self-Categorizing Stimulus-Response Units</i> , pp. 3820-3825.	
Lin, Hsien-I	Purdue Univ.
Lee, C. S. George	National Science Foundation
17:20-17:40	FrC5.5
<i>An Efficient Decentralized Learning by Exploiting Biarticular Muscles</i> , pp. 3826-3831.	
Watanabe, Wataru	Tohoku Univ.
Sato, Takahide	Tohoku Univ.
Ishiguro, Akio	Tohoku Univ.

17:40-18:00		FrC5.6
<i>Learning Robot Stiffness for Contact Tasks Using the Natural Actor-Critic</i> , pp. 3832-3837.		
Kim, Byungchan		Korea Univ.
Kang, Byungduk		Korea Univ.
Park, Shinsuk		Korea Univ.
Kang, Sung-Chul		Korea Inst. of Sci. and Tech.

FrC6		206
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Kinematics and Statics of Parallel Manipulators (Regular Sessions)	
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Chair: Merlet, Jean-Pierre		INRIA
Co-Chair: Selig, J.M.		London South Bank Univ.
16:00-16:20		FrC6.1
<i>Certified Workspace Analysis of 3RRR Planar Parallel Flexure Mechanism</i> , pp. 3838-3843.		
Oetomo, Denny		INRIA Sophia Antipolis
Daney, David		INRIA Sophia Antipolis
Shirinazadeh, Bijan		Monash Univ.
Merlet, Jean-Pierre		INRIA
16:20-16:40		FrC6.2
<i>Architecture Singularities in Flagged Parallel Manipulators</i> , pp. 3844-3850.		
Borrás Sol, Júlia		Inst. de Robòtica i Informàtica Industrial (CSIC-UPC)
Thomas, Federico		CSIC-UPC
Torras, Carme		CSIC - UPC
16:40-17:00		FrC6.3
<i>Direct Kinematics of Zero-Torsion Parallel Mechanisms</i> , pp. 3851-3856.		
Bonev, Ilian		École de Tech. supérieure
17:00-17:20		FrC6.4
<i>Kinematics of the Wire-Driven Parallel Robot MARIONET Using Linear Actuators</i> , pp. 3857-3862.		
Merlet, Jean-Pierre		INRIA
17:20-17:40		FrC6.5
<i>Improving the Pose Accuracy of a Planar 3RRR Parallel Manipulator Using Kinematic Redundancy and Optimized Switching Patterns</i> , pp. 3863-3868.		
Kotlarski, Jens		Leibniz Univ. Hannover
Abdellatif, Houssein		Univ. of Hannover, Germany
Heimann, Bodo		Univ. of Hannover, Germany
17:40-18:00		FrC6.6
<i>A Real-Time Capable Force Calculation Algorithm for Redundant Tendon-Based Parallel Manipulators</i> , pp. 3869-3874.		
Mikelsons, Lars		Univ. of Duisburg-Essen
Bruckmann, Tobias		Univ. of Duisburg-Essen
Schramm, Dieter		Univ. Duisburg-Essen
Hiller, Manfred		Univ. of Duisburg-Essen

FrC7		207
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Medical Robots for Surgeries (Regular Sessions)	
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Chair: Howe, Robert D.		Harvard Univ.
Co-Chair: Podder, Tarun		Medical Coll. of Thomas Jefferson Univ.
16:00-16:20		FrC7.1
<i>Quasiperiodic Predictive Filtering for Robot-Assisted Beating Heart Surgery</i> , pp. 3875-3880.		
Yuen, Shelten		Harvard Univ.
Novotny, Paul		Harvard Univ.
Howe, Robert D.		Harvard Univ.
16:20-16:40		FrC7.2
<i>Human-Guided Surgical Robot System for Spinal Fusion Surgery: CoRASS</i> , pp. 3881-3887.		
Lee, Jongwon		POSTECH
Kim, Keehoon		Northwestern Univ.
Chung, Wan Kyun		POSTECH
Choi, Seungmoon		POSTECH
Kim, Young Soo		School of Medicine, Hanyang Univ.
16:40-17:00		FrC7.3
<i>Kinematics and Calibration of Active Cannulas</i> , pp. 3888-3895.		
Webster, III, Robert James		Vanderbilt Univ.
Romano, Joseph M.		Univ. of Pennsylvania
Cowan, Noah J.		Johns Hopkins Univ.
17:00-17:20		FrC7.4
<i>Assemblable Three Fingered Five-DOF Hand for Laparoscopic Surgery</i> , pp. 3896-3901. Attachment		
Ohshima, Ritsuya		Tokyo Inst. of Tech.
Takayama, Toshio		Tokyo Inst. of Tech.
Omata, Toru		Tokyo Inst. of Tech.
Ohya, Toshiki		Tokyo Medical and Dental Univ.
Kojima, Kazuyuki		Tokyo Medical and Dental Univ. Graduate School Of Medicine
Takase, Kozo		Tokyo Medical and Dental Univ.
Tanaka, Naofumi		Tokyo Medical and Dental Univ.

17:20-17:40 FrC7.5
Master Manipulator with Higher Operability Designed for Micro Neuro Surgical System, pp. 3902-3907. Attachment
 Takahashi, Hiroki The Univ. of Tokyo
 Yonemura, Tsubasa The Univ. of Tokyo
 Sugita, Naohiko The Univ. of Tokyo
 Mitsuishi, Mamoru The Univ. of Tokyo
 Sora, Shigeo Kanto Medical Center NTT Ec.
 Morita, Akio Kanto Medical Center NTT Ec.
 Mochizuki, Ryo NHK Engineering Service Inc.

17:40-18:00 FrC7.6
Assemblable Pursestring Suture Instrument for Laparoscopic Surgery, pp. 3908-3913. Attachment
 Takayama, Toshio Tokyo Inst. of Tech.
 Omata, Toru Tokyo Inst. of Tech.
 Kojima, Kazuyuki Tokyo Medical and Dental Univ. Graduate School OfMedicine
 Tanaka, Naofumi Tokyo Medical and Dental Univ.

FrC8 208

Robotic Wheelchairs (Regular Sessions)

Chair: Valls Miro, Jaime Univ. of Tech. Sydney (UTS)
 Co-Chair: Tsui, Katherine Univ. of Massachusetts, Lowell

16:00-16:20 FrC8.1

Real-Time Analog Input Device Using Breath Pressure for the Operation of Powered Wheelchair, pp. 3914-3919.
 Yamamoto, Motoji Kyushu Univ.
 Ikeda, Takeshi Kyushu Univ.
 Sasaki, Yoshinobu, Yoshinobu Kyushu Univ.

16:20-16:40 FrC8.2

POMDP-Based Long-Term User Intention Prediction for Wheelchair Navigation, pp. 3920-3925.
 Taha, Tarek Centre of Excellence Centre of Excellence for Autonomous Systems
 Valls Miro, Jaime Univ. of Tech. Sydney (UTS)
 Dissanayake, Gamini Univ. of Tech. Sydney (UTS)

16:40-17:00 FrC8.3

Human-Wheelchair Collaboration through Prediction of Intention and Adaptive Assistance, pp. 3926-3931.
 Carlson, Tom Imperial Coll. London
 Demiris, Yiannis Imperial Coll. London

17:00-17:20 FrC8.4

High Performance Control for Graceful Motion of an Intelligent Wheelchair., pp. 3932-3938.
 Gulati, Shiipa Univ. of Texas at Austin
 Kuipers, Benjamin The Univ. of Texas at Austin

FrC9 209

Intelligent and Flexible Systems (Regular Sessions)

Chair: Xi, Ning Michigan State Univ.
 Co-Chair: Ishikawa, Masatoshi Univ. of Tokyo

16:00-16:20 FrC9.1

Automated Data Processing for a Rapid 3D Surface Inspection System, pp. 3939-3944.
 Shi, Quan Michigan State Univ.
 Xi, Ning Michigan State Univ.

16:20-16:40 FrC9.2

Acquiring Change Models for Sensor-Based Robot Manipulation, pp. 3945-3951.
 Deiterding, Jan Univ. of Bayreuth
 Henrich, Dominik Univ. of Bayreuth

16:40-17:00 FrC9.3

Intuitive and Model-Based On-Line Programming of Industrial Robots: A Modular On-Line Programming Environment, pp. 3952-3957.
 Hein, Björn Univ. Karlsruhe (TH)
 Hensel, Martin Univ. Karlsruhe (TH)
 Woern, Heinz Univ. Karlsruhe

17:00-17:20 FrC9.4

Workspace Characterization of a Robotic System Using Reliability-Based Design Optimization, pp. 3958-3963.
 Newkirk, Jeremy Univ. of Notre Dame
 Bowling, Alan Univ. of Notre Dame
 Renaud, John Univ. of Notre Dame

17:20-17:40 FrC9.5

A New Framework for Microrobotic Control of Motile Cells Based on High-Speed Tracking and Focusing, pp. 3964-3969. Attachment
 Hasegawa, Takeshi Univ. of Tokyo
 Ogawa, Naoko Univ. of Tokyo
 Oku, Hiromasa Univ. of Tokyo
 Ishikawa, Masatoshi Univ. of Tokyo

FrC10 211

Inspection Robots (Regular Sessions)

Chair: Kelly, Alonzo Carnegie Mellon Univ.

Co-Chair: Stroupe, Ashley W.	Jet Propulsion Lab.
16:00-16:20	FrC10.1
<i>Geometric Design of the LineScout, a Teleoperated Robot for Power Line Inspection and Maintenance</i> , pp. 3970-3977.	
Pouliot, Nicolas	Hydro-Québec Res. Inst.
Montambault, Serge	Hydro-Québec Res. Inst.
16:20-16:40	FrC10.2
<i>Expliner – Robot for Inspection of Transmission Lines</i> , pp. 3978-3984.	
Debenest, Paulo	Tokyo Inst. of Tech.
Guarnieri, Michele	Tokyo Inst. of Tech.
Takita, Kensuke	HiBot Corp.
Fukushima, Edwardo F.	Tokyo Inst. of Tech.
Hirose, Shigeo	Tokyo Inst. of Tech.
Tamura, Kiyoshi	Kansai Electric Power Company
Kimura, Akihiro	Kansai Electric Power Company
Kubokawa, Hiroshi	J-Power Systems
Iwama, Narumi	J-Power Systems
Shiga, Fuminori	J-Power Systems
16:40-17:00	FrC10.3
<i>Development and Application of a Novel Rail Runner Mechanism for Double Hull Structures of Ships</i> , pp. 3985-3991.	
Lee, Donghun	Seoul National Univ.
Lee, Sungcheul	Seoul National Univ.
Ku, Namkuk	the Department of the Naval Architecture and Ocean Engineering
Lim, Chaemook	Seoul National Univ.
Lee, Kyu-Yeul	Seoul National Univ.
Kim, Taewan	Seoul National Univ.
Kim, Jongwon	Seoul National Univ.
17:00-17:20	FrC10.4
<i>Design of a Mobile Mechanism Possessing Driving Ability and Detecting Function for In-Pipe Inspection</i> , pp. 3992-3997. Attachment	
Li, Peng	Shenyang Inst. of Automation, Chinese Acad. of Sciences
Ma, Shugen	Shenyang Inst. of Automation, Chinese Acad. of Sciences
Li, Bin	Shenyang Inst. of Automation
Wang, Yuechao	Shenyang Inst. of Automation
17:20-17:40	FrC10.5
<i>Design and Motion Planning of a Two-Moduled Indoor Pipeline Inspection Robot</i> , pp. 3998-4004. Attachment	
Kwon, Young-Sik	Hanyang Univ.
Lim, Hoon	Hanyang Univ.
Jung, Eui-jung	Hanyang Univ.
Yi, Byung-Ju	Hanyang Univ.
17:40-18:00	FrC10.6
<i>SLAM in Indoor Pipelines with 15mm Diameter</i> , pp. 4005-4011. Attachment	
Lim, Hoon	Hanyang Univ.
Jae Yeon, Choi	Hanyang Univ.
Jung, Eui-jung	Hanyang Univ.
Kwon, Young-Sik	Hanyang Univ.
Yi, Byung-Ju	Hanyang Univ.

FrC11

212

Range Data Processing for Detection and Classification (Regular Sessions)

Chair: Lee, Sukhan	Sungkyunkwan Univ.
Co-Chair: Carpin, Stefano	Univ. of California, Merced
16:00-16:20	FrC11.1
<i>Integrated Laser-Camera Sensor for the Detection and Localization of Landmarks for Robotic Applications</i> , pp. 4012-4017. Attachment	
Amarasinghe, Dilan	Memorial Univ. of Newfoundland
Mann, George K. I.	Memorial Univ. of Newfoundland
Gosine, Raymond G.	Memorial Univ. of Newfoundland
16:20-16:40	FrC11.2
<i>Learning Long-Range Terrain Classification for Autonomous Navigation</i> , pp. 4018-4024.	
Bajracharya, Max	JPL
Tang, Benyang	JPL
Howard, Andrew	JPL
Turmon, Michael	JPL
Matthies, Larry	Jet Propulsion Lab.
16:40-17:00	FrC11.3
<i>Registration of Colored 3D Point Clouds with a Kernel-Based Extension to the Normal Distributions Transform</i> , pp. 4025-4030.	
Huhle, Benjamin	Univ. of Tuebingen
Magnusson, Martin	Örebro Univ.
Strasser, Wolfgang	Univ. of Tuebingen
Lilienthal, Achim, J.	Örebro Univ.
17:00-17:20	FrC11.4
<i>Obstacle Detection and Localization Method Based on 3D Model: Distance Validation with Ladar</i> , pp. 4031-4036.	
Cappelle, Cindy	LAGIS

El Badaoui El Najjar, Maan	LAGIS
Charpillat, Francois	INRIA, Loria
Pomorski, Denis	LAGIS
17:20-17:40	FrC11.5
<i>Incremental Object Part Detection Toward Object Classification in a Sequence of Noisy Range Images</i> , pp. 4037-4042.	
Gachter, Stefan	Swiss Federal Inst. of Tech. (ETHZ)
Harati, Ahad	ETHZ
Sieglwart, Roland	ETH Zurich
17:40-18:00	FrC11.6
<i>A Clustering Method for Efficient Segmentation of 3D Laser Data</i> , pp. 4043-4048.	
Klasing, Klaas	Tech. Univ. Muenchen
Wollherr, Dirk	Tech. Univ. München
Buss, Martin	Tech. Univ. Muenchen
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FrC12	214
Robot Applications (Regular Sessions)	
Chair: Roberts, Jonathan	CSIRO ICT Centre
Co-Chair: Song, Dezhen	Texas A&M Univ.
16:00-16:20	FrC12.1
<i>Virtual Environment Teleoperation of a Hydraulic Forestry Crane</i> , pp. 4049-4054. Attachment	
Westerberg, Simon	Umeå Univ.
Manchester, Ian	Umeå Univ.
Mettin, Uwe	Umeå Univ.
La Hera, Pedro	Umeå Univ.
Shiriaev, Anton	Umea Univ.
16:20-16:40	FrC12.2
<i>Piercing Based Grasping by Using Self-Tightening Effect</i> , pp. 4055-4060. Attachment	
Sakamoto, Naoki	Mayekawa Mfg. Co., Ltd.
Higashimori, Mitsuru	Osaka Univ.
Tsuji, Toshio	Hiroshima Univ.
Kaneko, Makoto	Osaka Univ.
16:40-17:00	FrC12.3
<i>Concurrent Multi-Link Deployment of a Gravity-Assisted Underactuated Snake Robot for Aircraft Assembly</i> , pp. 4061-4067. Attachment	
Roy, Binayak	MIT
Asada, Harry	MIT
17:00-17:20	FrC12.4
<i>Generating Robust Assembly Plans in Constrained Environments</i> , pp. 4068-4073.	
Heger, Frederik W.	Carnegie Mellon Univ. The Robotics Inst.
17:20-17:40	FrC12.5
<i>CMDragons: Dynamic Passing and Strategy on a Champion Robot Soccer Team</i> , pp. 4074-4079.	
Bruce, James Robert	Carnegie Mellon Univ.
Veloso, Manuela	Carnegie Mellon Univ.
Zickler, Stefan	Carnegie Mellon Univ.
Licitra, Michael	Carnegie Mellon Univ.
17:40-18:00	FrC12.6
<i>A Novel Real-Time Control Architecture for Internet-Based Thin-Client Robot; Simulacrum-Based Approach</i> , pp. 4080-4085.	
Kim, Kyung Jin	ROBOMATION
Suh, Il Hong	Hanyang Univ.
Kim, Sunghoon	ETRI
Oh, Sang-Rok	MIC