

2014 IEEE International Conference on Robotics and Automation

(ICRA 2014)

**Hong Kong, China
31 May – 7 June 2014**

Pages 1-853



**IEEE Catalog Number: CFP14RAA-POD
ISBN: 978-1-4799-3686-1**

TABLE OF CONTENTS

VOLUME 1

OPENGV: A UNIFIED AND GENERALIZED APPROACH TO REAL-TIME CALIBRATED GEOMETRIC VISION	1
<i>Laurent Kneip, Paul Timothy Furgale</i>	
TOWARD FEATURELESS VISUAL NAVIGATION: SIMULTANEOUS LOCALIZATION AND PLANAR SURFACE EXTRACTION USING MOTION VECTORS IN VIDEO STREAMS	9
<i>Wen Li, Dezhen Song</i>	
SVO: FAST SEMI-DIRECT MONOCULAR VISUAL ODOMETRY	15
<i>Christian Forster, Mattia Pizzoli, Davide Scaramuzza</i>	
MONOCULAR SIMULTANEOUS MULTI-BODY MOTION SEGMENTATION AND RECONSTRUCTION FROM PERSPECTIVE VIEWS	23
<i>Reza Sabzevari, Davide Scaramuzza</i>	
ATTITUDE-GUIDED ROBUST ADAPTIVE PATH FOLLOWING CONTROL FOR DUCTED FAN UAV	31
<i>Hongzhe Jin, Yanhe Zhu, Ge Li, Jie Zhao</i>	
SINGLE-LOOP CONTROL AND TRAJECTORY FOLLOWING OF A FLAPPING-WING MICROROBOT	37
<i>Pakpong Chirarattananon, Kevin Ma, Robert Wood</i>	
STABILITY AND CONTROL OF A QUADROPTER DESPITE THE COMPLETE LOSS OF ONE, TWO, OR THREE PROPELLERS	45
<i>Mark Wilfried Mueller, Raffaello D'Andrea</i>	
HYBRID PREDICTIVE CONTROL FOR AERIAL ROBOTIC PHYSICAL INTERACTION TOWARDS INSPECTION OPERATIONS	53
<i>Georgios Darivianakis, Kostas Alexis, Michael Burri, Roland Siegwart</i>	
TRUST MODELING IN MULTI-ROBOT PATROLLING	59
<i>Charles Pippin, Henrik Iskov Christensen</i>	
MULTI-ROBOT COOPERATIVE CONTROL FOR MONITORING AND TRACKING DYNAMIC PLUMES	67
<i>Shuai Li, Yi Guo, Brian Bingham</i>	
STATISTICAL ANALYSIS OF STOCHASTIC MULTI-ROBOT BOUNDARY COVERAGE	74
<i>Ganesh Kumar, Spring Berman</i>	
REVISITING COVERAGE CONTROL IN NONCONVEX ENVIRONMENTS USING VISIBILITY SETS	82
<i>Lukas Klodt, A. Dominik Haumann, Volker Willert</i>	
MARRT: MEDIAL AXIS BIASED RAPIDLY-EXPLORING RANDOM TREES	90
<i>Jory Denny, Evan Greco, Shawna Thomas, Nancy Amato</i>	
A REPRESENTATION OF DEFORMABLE OBJECTS FOR MOTION PLANNING WITH NO PHYSICAL SIMULATION	98
<i>Calder Phillips-Grafflin, Dmitry Berenson</i>	
THE BENCH MOVER'S PROBLEM: MINIMUM-TIME TRAJECTORIES, WITH COST FOR SWITCHING BETWEEN CONTROLS	106
<i>Yu-Han Lyu, Andrei Furtuna, Weifu Wang, Devin Balkcom</i>	
MOTION PLANNING WITH SATISFIABILITY MODULO THEORIES	113
<i>William Hung, Xiaoyu Song, Xiaojuan Li, Jie Zhang, Rui Wang, Peng Gao</i>	
A ROBOT ON THE SHOULDER: COORDINATED HUMAN-WEARABLE ROBOT CONTROL USING COLOURED PETRI NETS AND PARTIAL LEAST SQUARES PREDICTIONS	119
<i>Baldin Llorens, Harry Asada</i>	
END-POINT IMPEDANCE MEASUREMENTS AT HUMAN HAND DURING INTERACTIVE MANUAL WELDING WITH ROBOT	126
<i>Mustafa Suphi Erden, Aude Billard</i>	
ROBOTIC FORCE AMPLIFICATION WITH FREE SPACE MOTION CAPABILITY	134
<i>Pascal Labrecque, Clement Gosselin</i>	
BRACING THE HUMAN BODY WITH SUPERNUMERARY ROBOTIC LIMBS FOR PHYSICAL ASSISTANCE AND LOAD REDUCTION	141
<i>Federico Parietti, Harry Asada</i>	
ROBUST ONLINE BELIEF SPACE PLANNING IN CHANGING ENVIRONMENTS: APPLICATION TO PHYSICAL MOBILE ROBOTS	149
<i>Ali-Akbar Agha-Mohammadi, Saurav Agarwal, Aditya Mahadevan, Sunan Chakravorty, Daniel Tomkins, Jory Denny, Nancy Amato</i>	
SEQUENTIAL ALLOCATION OF SAMPLING BUDGETS IN UNKNOWN ENVIRONMENTS	157
<i>Michael Furlong, David Wettergreen</i>	
USING QUALITATIVE SPATIAL RELATIONS FOR INDIRECT OBJECT SEARCH	163
<i>Lars Kunze, Keerthi Kumar Doreswamy, Nick Hawes</i>	
OCCLUDED OBJECT SEARCH BY RELATIONAL AFFORDANCES	169
<i>Bogdan Moldovan, Luc De Raedt</i>	
FILLING THE GAP BETWEEN LOW FREQUENCY MEASUREMENTS WITH THEIR ESTIMATES	175
<i>Yuquan Wang, Dragan Kostic, Sven Theodorus Henricus Jansen, Hendrik Nijmeijer</i>	

GEOMETRY-AIDED INVERSION OF MANIPULATOR TELESCOPIC LINK LENGTH FROM MEMS ACCELEROMETER AND RATE GYRO READINGS	181
<i>Juho Vihonen, Janne Honkakorpi, Jouni Mattila, Ari Visa</i>	
HEAD TRACKING FOR THE OCULUS RIFT	187
<i>Steven M Lavalle, Max Katsev, Anna Yershova, Michael Antonov</i>	
DECOUPLED STATE ESTIMATION FOR HUMANOIDS USING FULL-BODY DYNAMICS	195
<i>X Xinjilefu, Siyuan Feng, Weiwei Huang, Christopher Atkeson</i>	
A DISTRIBUTED MODEL PREDICTIVE CONTROL APPROACH FOR ROBUST POSTURAL STABILITY OF A HUMANOID ROBOT	202
<i>Aurelien Ibanez, Philippe Bidaud, Vincent Padois</i>	
DYNAMICALLY TRANSITIONING BETWEEN SURFACES OF VARYING INCLINATIONS TO ACHIEVE UNEVEN-TERRAIN WALKING	210
<i>Luca Colasanto, Nicolas Yves Perrin, Nikolaos Tsagarakis, Darwin G. Caldwell</i>	
VISION-DRIVEN WALKING PATTERN GENERATION FOR HUMANOID REACTIVE WALKING	216
<i>Mauricio Josafat Garcia Vazquez, Olivier Stasse, Jean-Bernard Hayet</i>	
DEVELOPMENT OF HIGH-SPAN RUNNING LONG JUMPS FOR HUMANOIDS	222
<i>Patrick Wensing, David Orin</i>	
VI-RABT: VIRTUALLY INTERFACED ROBOTIC ANKLE AND BALANCE TRAINER	228
<i>Amir Bahador Farjadian, Sean Suri, Ally Bugliari, Paul Doucot, Nate Lavins, Alex Mazzotta, Jp Valenzuela, Patrick Murphy, Qingchao Kong, Maureen Holden, Constantinos Mavroidis</i>	
A CHASE-GAME TO TEACH CHILDREN ON A ROBOT TO FOLLOW MOVING OBJECTS	234
<i>Jiyeon Kang, Samuel Logan, James Galloway, Sunil Agrawal</i>	
HUMAN LEVEL WALKING GAIT MODELING AND ANALYSIS BASED ON SEMI-MARKOV PROCESS	240
<i>Hao Ma, Wei-Hsin Liao</i>	
FUNCTIONAL TASK BASED ASSISTANCE DURING WALKING FOR A LOWER EXTREMITY ASSISTIVE DEVICE	246
<i>Bingquan Shen, Jinfu Li, Chee Meng Chew</i>	
THE APPLICATION OF SERVICE-ORIENTED ARCHITECTURES IN DISTRIBUTED AUTOMATION SYSTEMS	252
<i>Wenbin Dai, Valeriy Vyatkin, James H. Christensen</i>	
MIRA: ENABLER OF MASS CUSTOMIZATION THROUGH AGENT-BASED DEVELOPMENT OF INTELLIGENT MANUFACTURING SYSTEMS	258
<i>Majid Sorouri, Valeriy Vyatkin, Zoran Salcic</i>	
MODEL AND CONTROL OF A FLAP SYSTEM MITIGATING WIND IMPACT ON STRUCTURES	264
<i>Maria Boberg, Glauco Feltrin, Alcherio Martinoli</i>	
IN-HAND PRECISE TWISTING AND POSITIONING BY A NOVEL DEXTEROUS ROBOTIC GRIPPER FOR INDUSTRIAL HIGH-SPEED ASSEMBLY	270
<i>Fei Chen, Ferdinando Cannella, Carlo Canali, Traveler Hauptman, Giuseppe Softa, Darwin G. Caldwell</i>	
IMPLICIT ACTIVE CONSTRAINTS FOR A COMPLIANT SURGICAL MANIPULATOR	276
<i>Konrad Leibbrandt, Hani Marcus, Ka-Wai Kwok, Guang-Zhong Yang</i>	
HAND-HELD MICROSURGICAL FORCEPS WITH FORCE-FEEDBACK FOR MICROMANIPULATION	284
<i>Christopher Payne, Hedyeh Rafii-Tari, Hani Marcus, Guang-Zhong Yang</i>	
AUTONOMOUS PENETRATION DETECTION FOR BONE-CUTTING TOOL USING DEMONSTRATION-BASED LEARNING	290
<i>Takayuki Osa, Christian Abawi, Naohiko Sugita, Hirotaka Chikuda, Shurei Sugita, Hideya Ito, Toru Moro, Yoshio Takatori, Sakae Tanaka, Mamoru Mitsubishi</i>	
FORCE-BASED FLEXIBLE PATH PLANS FOR ROBOTIC ELECTRODE INSERTION	297
<i>Jason Pile, George Wanna, Nabil Simaan</i>	
THE BIO-INSPIRED CHAOTIC ROBOT	304
<i>Inaki Rano</i>	
REALIZATION OF SPRING LOADED INVERTED PENDULUM DYNAMICS WITH A TWO-LINK MANIPULATOR BASED ON THE BIO-INSPIRED COORDINATE SYSTEM	310
<i>Sehoon Oh, Kyoungchul Kong</i>	
ACOUSTIC FLOW FOR ROBOT MOTION CONTROL	316
<i>Herbert Peremans, Jan Steckel</i>	
ISPLASH-I: HIGH PERFORMANCE SWIMMING MOTION OF A CARANGIFORM ROBOTIC FISH WITH FULL-BODY COORDINATION	322
<i>Richard James Clapham, Huosheng Hu</i>	
A BODY WEIGHT SUPPORT SYSTEM EXTENSION TO CONTROL LATERAL FORCES: REALIZATION AND EVALUATION	328
<i>Dario Wyss, Volker Bartenbach, Andrew Pennycott, Robert Riener, Heike Vallery</i>	
SLIP MITIGATION CONTROL FOR AN ELECTRIC POWERED WHEELCHAIR	333
<i>Oscar Jr. Chuy, Emmanuel Collins, Camilo Ordonez, Jorge Candiotti, Hongwu Wang, Rory Cooper</i>	
COOPERATIVE CONTROL OF A COMPLIANT MANIPULATOR FOR ROBOTIC-ASSISTED PHYSIOTHERAPY	339
<i>Gauthier Gras, Valentina Vitiello, Guang-Zhong Yang</i>	
CPG-BASED LOCOMOTION CONTROL OF A SNAKE-LIKE ROBOT FOR OBSTACLE AVOIDANCE	347
<i>Norzalilah Mohamad Nor, Shugen Ma</i>	
AN EFFICIENT INDEX FOR VISUAL SEARCH IN APPEARANCE-BASED SLAM	353
<i>Kiana Hajebi, Hong Zhang</i>	

EVENT-BASED 3D SLAM WITH A DEPTH-AUGMENTED DYNAMIC VISION SENSOR	359
<i>David Weikersdorfer, David Benjamin Adrian, Daniel Cremers, Jorg Conrad</i>	
USING SUPERPIXELS IN MONOCULAR SLAM	365
<i>Alejo Concha, Javier Civera</i>	
A HIERARCHICAL WAVELET DECOMPOSITION FOR CONTINUOUS-TIME SLAM	373
<i>Sean Anderson, Frank Dellaert, Timothy Barfoot</i>	
COMBINATORIAL OPTIMIZATION FOR HIERARCHICAL CONTACT-LEVEL GRASPING	381
<i>Kaiyu Hang, Johannes Andreas Stork, Florian T. Pokorny, Danica Kragic</i>	
GRASP MODULI SPACES AND SPHERICAL HARMONICS	389
<i>Florian T. Pokorny, Yasemin Bekiroglu, Danica Kragic</i>	
CONSTRAINT AND SYNERGY-BASED SPECIFICATION OF MANIPULATION TASKS	397
<i>Gianni Borghesan, Erwin Aertbelien, Joris De Schutter</i>	
CHARACTERISTICS ANALYSIS AND MECHANICAL IMPLEMENTATION OF HUMAN FINGER MOVEMENTS	403
<i>Wenrui Chen, Caihua Xiong, Mingjin Liu, Liu Mao</i>	
HIGH-FIDELITY SENSOR MODELING AND SELF-CALIBRATION IN VISION-AIDED INERTIAL NAVIGATION	409
<i>Mingyang Li, Hongsheng Yu, Xing Zheng, Anastasios Mourikis</i>	
W-RGB-D: FLOOR-PLAN-BASED INDOOR GLOBAL LOCALIZATION USING A DEPTH CAMERA AND WIFI	417
<i>Seigo Ito, Felix Endres, Markus Kuderer, Gian Diego Tipaldi, Cyrill Stachniss, Wolfram Burgard</i>	
NONPARAMETRIC COOPERATIVE TRACKING IN MOBILE AD-HOC NETWORKS	423
<i>Mao Shan, Stewart Worrall, Eduardo Nebot</i>	
A SYNCHRONIZED VISUAL-INERTIAL SENSOR SYSTEM WITH FPGA PRE-PROCESSING FOR ACCURATE REAL-TIME SLAM	431
<i>Janosch Nkollic, Joern Rehder, Michael Burri, Pascal Gohl, Stefan Leutenegger, Paul Timothy Furgale, Roland Siegwart</i>	
ROBOTIC CONSTRUCTION OF ARBITRARY SHAPES WITH AMORPHOUS MATERIALS	438
<i>Nils Napp, Radhika Nagpal</i>	
GEOMETRIC REARRANGEMENT OF MULTIPLE MOVEABLE OBJECTS ON CLUTTERED SURFACES: A HYBRID REASONING APPROACH	445
<i>Giray Havur, Guchan Ozbilgin, Esra Erdem, Volkan Patoglu</i>	
MOTION PLANNING FOR SMOOTH PICKUP OF MOVING OBJECTS	453
<i>Arjun Menon, Benjamin Cohen, Maxim Likhachev</i>	
MOTION PLANNING FOR ROBOTIC MANIPULATORS WITH INDEPENDENT WRIST JOINTS	461
<i>Kalin Gochev, Venkatraman Narayanan, Benjamin Cohen, Alla Safonova, Maxim Likhachev</i>	
AUTOMATED MICROBOTIC CHARACTERIZATION OF CELL-CELL COMMUNICATION	469
<i>Jun Liu, Vinayakumar Siragam, Zheng Gong, Jun Chen, Clement Leung, Zhe Lu, Changhai Ru, Shaorong Xie, Jun Luo, Robert Hamilton, Yu Sun</i>	
PNEUMATIC BIG-HAND GRIPPER WITH SLIP-IN TIP AIMED FOR THE TRANSFER SUPPORT OF THE HUMAN BODY	475
<i>Chiun Tai Loh, Hideyuki Tsukagoshi</i>	
HIDDEN MARKOV MODELING OF HUMAN NORMAL GAIT USING LASER RANGE FINDER FOR A MOBILITY ASSISTANCE ROBOT	482
<i>Xanthe Papageorgiou, Georgia Chalvatzaki, Costas S. Tzafestas, Petros Maragos</i>	
3D SPIHT FOR MULTILEAD ECG COMPRESSION	488
<i>Sani Muhammad Isa, Wisnu Jatmiko, Aniat Murni Arymurthy</i>	
MARKOV RANDOM FIELD BASED SMALL OBSTACLE DISCOVERY OVER IMAGES	494
<i>Suryansh Kumar, Siva Karthik Mustikovela, Madhava Krishna</i>	
LEARNING SPATIAL RELATIONSHIPS FROM 3D VISION USING HISTOGRAMS	501
<i>Severin Andreas Thomas-Morus Fichtl, Andrew McManus, Wail Mustafa, Dirk Kraft, Norbert Kruger, Frank Guerin</i>	
BIGBIRD: A LARGE-SCALE 3D DATABASE OF OBJECT INSTANCES	509
<i>Arjun Singh, James Sha, Karthik Narayan, Tudor Achim, Pieter Abbeel</i>	
A HIERARCHICAL APPROACH FOR ROAD DETECTION	517
<i>Keyu Lu, Jian Li, Xiangjing An, Hangen He</i>	
A ROBUST LANDING AND SLIDING MANEUVER CONTROLLER FOR A QUADROTOR VEHICLE ON A SLOPED INCLINE	523
<i>David Cabecinhas, Rita Cunha, Carlos Silvestre</i>	
AERODYNAMIC POWER CONTROL FOR MULTIROTOR AERIAL VEHICLES	529
<i>Moses Bangura, Hyon Lim, H. Jin Kim, Robert Mahony</i>	
ROBUST STABILIZATION CONTROL OF UNKNOWN SMALL-SCALE HELICOPTERS	537
<i>Panos Marantos, Charalampos Bechlioulis, Kostas Kyriakopoulos</i>	
BILATERAL TELEOPERATION CONTROL OF A QUADROTOR SYSTEM WITH A HAPTIC DEVICE : EXPERIMENTAL STUDIES	543
<i>Seungho Jeong, Seul Jung</i>	
STOCHASTIC MODELING, CONTROL, AND VERIFICATION OF WILD BODIES	549
<i>Daniel Gierl, Leonardo Bobadilla, Oscar Sanchez Plazas, Steven M Lavalle</i>	
DISTRIBUTED ROBOTIC SAMPLING OF NON-HOMOGENEOUS SPATIO-TEMPORAL FIELDS VIA RECURSIVE GEOMETRIC SUB-DIVISION	557
<i>Young-Ho Kim, Dylan Shell</i>	

ANY-COM COLLISION CHECKING: SHARING CERTIFICATES IN DECENTRALIZED MULTI-ROBOT TEAMS	563
<i>Michael W. Orte, Joshua J Bialkowski, Emilio Frazzoli</i>	
THE ROLE OF ENVIRONMENTAL AND CONTROLLER COMPLEXITY IN THE DISTRIBUTED OPTIMIZATION OF MULTI-ROBOT OBSTACLE AVOIDANCE	571
<i>Ezequiel Di Mario, Inaki Navarro, Alcherio Martinoli</i>	
CURIOSITY BASED EXPLORATION FOR LEARNING TERRAIN MODELS	578
<i>Yogesh Girdhar, David Whitney, Gregory Dudek</i>	
ICP STEREO VISUAL ODOMETRY FOR WHEELED VEHICLES BASED ON A 1DOF MOTION PRIOR	585
<i>Yanhua Jiang, Huiyan Chen, Guangming Xiong, Davide Scaramuzza</i>	
MULTI-ROBOT POSE GRAPH LOCALIZATION AND DATA ASSOCIATION FROM UNKNOWN INITIAL RELATIVE POSES VIA EXPECTATION MAXIMIZATION	593
<i>Vadim Indelman, Erik Nelson, Nathan Michael, Frank Dellaert</i>	
REAL-TIME MOSAICING WITH TWO-DIMENSIONAL FORWARD-LOOKING SONAR	601
<i>Natalia Hurtos, Sharad Nagappa, Narcis Palomeras, Joaquim Salvi</i>	
COLLABORATIVE HUMAN-HUMANOID CARRYING USING VISION AND HAPTIC SENSING	607
<i>Don Joven Agravante, Andrea Cherubini, Antoine Bussy, Pierre Gergondet, Abderrahmane Kheddar</i>	
POWER STEERING AND FORCE DISPLAY CONTROLS FOR A CYCLING WHEELCHAIR USING SERVO BRAKES	613
<i>Yasuhisa Hirata, Kazuhiro Kosuge, Eric Monacelli</i>	
DEVELOPMENT OF HIGH PERFORMANCE INTRINSICALLY SAFE 3-DOF ROBOT	619
<i>Alex Shafer, Mehrdad R. Kermani</i>	
MODELING USER'S DRIVING-CHARACTERISTICS IN A STEERING TASK TO CUSTOMIZE A VIRTUAL FIXTURE BASED ON TASK-PERFORMANCE	625
<i>Han Yoon, Ranxiao Wang, Seth Hutchinson</i>	
DECENTRALIZED NEAR-TO-NEAR APPROACH FOR VEHICLE PLATOONING BASED ON MEMORIZATION AND HEURISTIC SEARCH	631
<i>Jano Yazbeck, Alexis Scheuer, Francois Charpillet</i>	
COMBINED TASK AND MOTION PLANNING THROUGH AN EXTENSIBLE PLANNER-INDEPENDENT INTERFACE LAYER	639
<i>Siddharth Srivastava, Eugene Fang, Lorenzo Riano, Rohan Chitnis, Stuart Jonathan Russell, Pieter Abbeel</i>	
MORE KNOWLEDGE ON THE TABLE: PLANNING WITH SPACE, TIME AND RESOURCES FOR ROBOTS	647
<i>Masoumeh Mansouri, Federico Pecora</i>	
SMT-BASED SYNTHESIS OF INTEGRATED TASK AND MOTION PLANS FROM PLAN OUTLINES	655
<i>Srinivas Nedunuri, Sailesh Prabhu, Mark Moll, Swarat Chaudhuri, Lydia Kavraki</i>	
CONSTRAINED OPTIMAL SELECTION FOR MULTI-SENSOR ROBOT NAVIGATION USING PLUG-AND-PLAY FACTOR GRAPHS	663
<i>Han-Pang Chiu, Xun Zhou, Luca Carlone, Frank Dellaert, Supun Samarasekera, Rakesh Kumar</i>	
A REAL-TIME INERTIAL MOTION BLUR METRIC: APPLICATION TO FRAME TRIGGERING BASED MOTION BLUR MINIMIZATION	671
<i>Mehmet Mutlu, Afsar Saranli, Uluc Saranli</i>	
MAPPING SOUND EMITTING STRUCTURES IN 3D	677
<i>Jani Even, Luis Yoichi Morales Saiki, Nagasrikanth Kallakuri, Jonas Furrer, Carlos Toshinori Ishi, Norihiro Hagita</i>	
LEARNING SPATIAL CORRELATIONS FOR BAYESIAN FUSION IN PIPE THICKNESS MAPPING	683
<i>Teresa A. Vidal-Calleja, Daobilige Su, Freek De Bruijn, Jaime Valls Miro</i>	
ROBUST VEHICLE DETECTION USING 3D LIDAR UNDER COMPLEX URBAN ENVIRONMENT	691
<i>Jian Cheng, Zhiyu Xiang, Teng Cao, Jilin Liu</i>	
RELIABLE TOPOLOGICAL PLACE DETECTION IN BUBBLE SPACE	697
<i>Hakan Karaoguz, H. Isil Bozma</i>	
LOW-LATENCY EVENT-BASED VISUAL ODOMETRY	703
<i>Andrea Censi, Davide Scaramuzza</i>	
TOWARDS TRAINING-FREE APPEARANCE-BASED LOCALIZATION: PROBABILISTIC MODELS FOR WHOLE-IMAGE DESCRIPTORS	711
<i>Stephanie Lowry, Gordon Wyeth, Michael J Milford</i>	
ACTIVE TETHERED PELVIC ASSIST DEVICE (A-TPAD) TO STUDY FORCE ADAPTATION IN HUMAN WALKING	718
<i>Vineet Vashista, Xin Jin, Sunil Agrawal</i>	
ADAPTIVE ASSIST-AS-NEEDED CONTROLLER TO IMPROVE GAIT SYMMETRY IN ROBOT-ASSISTED GAIT TRAINING	724
<i>Damiano Zanotto, Paul Stegall, Sunil Agrawal</i>	
GENERATION OF HUMAN STANDING-UP MOTION WITH MUSCLE SYNERGIES USING FORWARD DYNAMIC SIMULATION	730
<i>Qi An, Yuki Ishikawa, Tetsuro Funato, Shinya Aoi, Hiroyuki Oka, Hiroshi Yamakawa, Atsushi Yamashita, Hajime Asama</i>	
ON THE DESIGN OF A ROBOT-ASSISTED REHABILITATION SYSTEM FOR ANKLE JOINT WITH CONTRACTURE AND/OR SPASTICITY BASED ON PROPRIOCEPTIVE NEUROMUSCULAR FACILITATION	736
<i>Zhihao Zhou, Yuan Zhou, Ninghua Wang, Fan Gao, Kunlin Wei, Qining Wang</i>	
NEW MARKER FOR REAL-TIME INDUSTRIAL ROBOT PROGRAMMING BY MOTION IMITATION	742
<i>Marcos Ferreira, Paulo Costa, Luis Rocha, Antonio Paulo Moreira, Norberto Pires</i>	

INDUSTRY-ACADEMIA COLLABORATIONS IN ROBOTICS: COMPARING ASIA, EUROPE AND NORTH-AMERICA	748
<i>Sascha Griffiths, Laura Voss, Florian Roehrbein</i>	
PREDICTIVE PATH-ACCURATE SCALING OF A SENSOR-BASED DEFINED TRAJECTORY	754
<i>Friedrich Lange, Michael Suppa</i>	
FORCE-TRACKING IMEDANCE CONTROL FOR MANIPULATORS MOUNTED ON COMPLIANT BASES	760
<i>Loris Roveda, Federico Vicentini, Nicola Pedrocchi, Lorenzo Molinari Tosatti</i>	
DYNAMIC MOVEMENT PRIMITIVES FOR COOPERATIVE MANIPULATION AND SYNCHRONIZED MOTIONS	766
<i>Jonas Umlauf, Dominik Sieber, Sandra Hirche</i>	
TOWARD HYBRID POSITION/FORCE CONTROL FOR AN ACTIVE HANDHELD MICROMANIPULATOR	772
<i>Trent Wells, Robert A. Maclachlan, Cameron N. Riviere</i>	
TOWARD PARALLEL CONTINUUM MANIPULATORS	778
<i>Caroline Bryson, Caleb Rucker</i>	
ROBOTIC IMPLANT TO APPLY TISSUE TRACTION FORCES IN THE TREATMENT OF ESOPHAGEAL ATRESIA	786
<i>Dana Damian, Veaceslav Arabagi, Assunta Fabozzo, Peter Ngo, Russell Jennings, Michael Manfredi, Pierre Dupont</i>	
RAPID ACCELERATION AND BRAKING: INSPIRATIONS FROM THE CHEETAH'S TAIL	793
<i>Amir Patel, Martin Braae</i>	
MODELING OF A CARANGIFORM-LIKE ROBOTIC FISH FOR BOTH FORWARD AND BACKWARD SWIMMING: BASED ON THE FIXED POINT	800
<i>Liang Li, Chen Wang, Guangming Xie</i>	
BLADE-TYPE CRAWLER VEHICLE BIO-INSPIRED BY A WHARF ROACH	806
<i>Yasuyuki Yamada, Gen Endo, Edvardo F. Fukushima</i>	
DEVELOPMENT AND CPG-BASED CONTROL OF A BIOMIMETIC ROBOTIC FISH WITH ADVANCED UNDERWATER MOBILITY	813
<i>Yonghui Hu, Shuai Zhang, Jianhong Liang, Tianmiao Wang</i>	
AN ADMITTANCE CONTROL SCHEME FOR HAPTIC INTERFACES BASED ON CABLE-DRIVEN PARALLEL MECHANISMS	819
<i>Alexis Fortin-Cote, Philippe Cardou, Clement Gosselin</i>	
SOFTNESS DISPLAY BY A MULTI-FINGERED HAPTIC INTERFACE ROBOT	826
<i>Takahiro Endo, Satoshi Tanimura, Yuta Kazama, Haruhisa Kawasaki</i>	
APPLICATION OF MAGNETO-RHEOLOGICAL FLUID BASED CLUTCHES FOR IMPROVED PERFORMANCE IN HAPTIC INTERFACES	832
<i>Nima Najmaei, Peyman Yadmellat, Mehrdad R. Kermani, Rajnikant V. Patel</i>	
AN INTUITIVE MULTIMODAL HAPTIC INTERFACE FOR TELEOPERATION OF AERIAL ROBOTS	838
<i>Xiaolei Hou, Robert Mahony</i>	
FAST RELOCALISATION AND LOOP CLOSING IN KEYFRAME-BASED SLAM	846
<i>Raul Mur-Artal, Juan D. Tardos</i>	

VOLUME 2

CONSERVATIVE EDGE SPARSIFICATION FOR GRAPH SLAM NODE REMOVAL	854
<i>Nicholas Carlevaris-Bianco, Ryan Eustice</i>	
AN EFFICIENT VISUAL LOOP CLOSURE DETECTION METHOD IN A MAP OF 20 MILLION KEY LOCATIONS	861
<i>Junjun Wu, Hong Zhang, Yisheng Guan</i>	
HYBRID VISION-BASED SLAM COUPLED WITH MOVING OBJECT TRACKING	867
<i>Jihong Min, Jungho Kim, Hyeongwoo Kim, Kiho Kwak, In So Kweon</i>	
COMBINING VISUAL AND INERTIAL FEATURES FOR EFFICIENT GRASPING AND BIN-PICKING	875
<i>Dirk Buchholz, Daniel Kubus, Ingo Weidauer, Friedrich M. Wahl, Alexander Scholz</i>	
STABILITY OF SOFT-FINGER GRASP UNDER GRAVITY	883
<i>Kensuke Harada, Tokuo Tsuji, Soichiro Uto, Natsuki Yamanobe, Kazuyuki Nagata, Kosei Kitagaki</i>	
EXPERIMENTAL INVESTIGATION OF EFFECT OF FINGERTIP STIFFNESS ON FRICTION WHILE GRASPING AN OBJECT	889
<i>Tetsuyou Watanabe, Yoshinori Fujihira</i>	
A HAND/ARM CONTROLLER THAT SIMULTANEOUSLY REGULATES INTERNAL GRASP FORCES AND THE IMPEDANCE OF CONTACTS WITH THE ENVIRONMENT	895
<i>Giuseppe Muscio, Francesco Pierri, Jeff Trinkle</i>	
SHADY DEALINGS: ROBUST, LONG-TERM VISUAL LOCALISATION USING ILLUMINATION INVARIANCE	901
<i>Colin McManus, Winston Churchill, Will Maddern, Alex Stewart, Paul Newman</i>	
A MONOCULAR POSE ESTIMATION SYSTEM BASED ON INFRARED LEDS	907
<i>Mathias Faessler, Elias Mueggler, Karl Stefan Schwabe, Davide Scaramuzza</i>	
ON THE USE OF IMUS IN THE PNP PROBLEM	914
<i>Luigi D'Alfonso, Emanuele Garone, Pietro Muraca, Paolo Pugliese</i>	

MICRO AIR VEHICLE LOCALIZATION AND POSITION TRACKING FROM TEXTURED 3D CADASTRAL MODELS	920
<i>Andras Majdik, Damiano Verda, Yves Albers-Schoenberg, Davide Scaramuzza</i>	
A MANIPULATION MOTION PLANNER FOR DUAL-ARM INDUSTRIAL MANIPULATORS	928
<i>Kensuke Harada, Tokuo Tsuji, Jean-Paul Laumond</i>	
RELATIONAL OBJECT TRACKING AND LEARNING	935
<i>Davide Nitti, Tinne De Laet, Luc De Raedt</i>	
RESONANCE-DRIVEN DYNAMIC MANIPULATION: DRIBBLING AND JUGGLING WITH ELASTIC BEAM	943
<i>Alexander Pekarovskiy, Kunal Saluja, Rohan Sarkar, Martin Buss</i>	
OPEN LOOP STABLE CONTROL IN REPETITIVE MANIPULATION TASKS	949
<i>Michiel Plooi, Wouter Wolfslag, Martijn Wisse</i>	
ROBOT-AIDED OPTICAL MANIPULATION OF CELLS WITH A UNIFIED CONTROLLER	957
<i>Xiangpeng Li, Dong Sun</i>	
DEVELOPMENT OF A HIGH THROUGHPUT ROBOT-AIDED CELL INJECTION SYSTEM FOR HUMAN CELLS	963
<i>Yu Ting Chow, Dong Sun, Shuxun Chen, Chong Liu, Ronald A. Li, Shuk Han Cheng</i>	
A PROBABILISTIC APPROACH TO LEARN ACTIVITIES OF DAILY LIVING OF A MOBILITY AID DEVICE USER	969
<i>Mitesh Patel, Jaime Valls Miro, Gamini Dissanayake</i>	
CONTROL OF POSTURE AND TRAJECTORY FOR A RAT-LIKE ROBOT INTERACTING WITH MULTIPLE REAL RATS	975
<i>Qing Shi, Hiroyuki Ishii, Yusuke Sugahara, Atsuo Takanishi, Qiang Huang, Satoshi Okabayashi, Toshio Fukuda</i>	
VISUAL SERVOING SCHEMES FOR AUTOMATIC NANOPositionING UNDER SCANNING ELECTRON MICROSCOPE	981
<i>Naresh Marturi, Brahim Tamadazte, Soukalo Dembele, Nadine Lefort-Piat</i>	
AUTONOMOUS ACTIVE RECOGNITION AND UNFOLDING OF CLOTHES USING RANDOM DECISION FORESTS AND PROBABILISTIC PLANNING	987
<i>Andreas Doumanoglou, Andreas Kargakos, Tae-Kyun Kim, Sotiris Malassiotis</i>	
EFFICIENT DEFORMABLE REGISTRATION OF MULTI-RESOLUTION SURFEL MAPS FOR OBJECT MANIPULATION SKILL TRANSFER	994
<i>Joerg Stueckler, Sven Behnke</i>	
AMBIENT MOTION ESTIMATION IN DYNAMIC SCENES USING WEARABLE VISUAL-INERTIAL SENSORS	1002
<i>Hongsheng He, Jindong Tan</i>	
ROAD SCENE SEGMENTATION VIA FUSING CAMERA AND LIDAR DATA	1008
<i>Wenqi Huang, Xiaojin Gong, Zhiyu Xiang</i>	
POLYGON GUARDING WITH ORIENTATION	1014
<i>Pratap Tokekar, Volkan Isler</i>	
VISUAL-INERTIAL STRUCTURE FROM MOTION: OBSERVABILITY VS MINIMUM NUMBER OF SENSORS	1020
<i>Agostino Martinelli</i>	
COMBINING MOTION AND APPEARANCE FOR SCENE SEGMENTATION	1028
<i>Paulo Vinicius Koerich Borges, Peyman Moghadam</i>	
A NEW FLEXIBLE CONTROLLER FOR A HUMANOID ROBOT THAT CONSIDERS VISUAL AND FORCE INFORMATION INTERACTION	1036
<i>Gan Ma, Qiang Huang, Zhangguo Yu, Xuechao Chen, Weimin Zhang, Junyao Gao, Libo Meng, Yunhui Liu</i>	
A TWO-POINT ALGORITHM FOR STEREO VISUAL ODOMETRY IN OPEN OUTDOOR ENVIRONMENTS	1042
<i>Kyohei Otsu, Takashi Kubota</i>	
LEARNING LATENT STRUCTURE FOR ACTIVITY RECOGNITION	1048
<i>Ninghang Hu, Gwenn Englebienne, Zhongyu Lou, Ben Krose</i>	
THE PARTIAL VIEW HEAT KERNEL DESCRIPTOR FOR 3D OBJECT REPRESENTATION	1054
<i>Susana, D Brandao, Joao Paulo Costeira, Manuela Veloso</i>	
LINEAR TORQUE ACTUATION USING FPGA-CONTROLLED MAGNETO-RHEOLOGICAL ACTUATORS	1060
<i>Wenjun Li, Peyman Yadmellat, Mehrdad R. Kermani</i>	
PHYSICAL INTERACTION DETECTION AND CONTROL OF COMPLIANT MANIPULATORS EQUIPPED WITH FRICTION CLUTCHES	1066
<i>Navvab Kashiri, Matteo Laffranchi, Nikolaos Tsagarakis, Alessio Margan, Darwin G. Caldwell</i>	
REAL-TIME DAMPING ESTIMATION FOR VARIABLE IMPEDANCE ACTUATORS	1072
<i>Navvab Kashiri, Matteo Laffranchi, Jinoh Lee, Nikolaos Tsagarakis, Lisha Chen, Darwin G. Caldwell</i>	
DEVELOPMENT OF A HYBRID ACTUATOR WITH CONTROLLABLE MECHANICAL DAMPING	1078
<i>Ioannis Sarakoglou, Nikolaos Tsagarakis, Darwin G. Caldwell</i>	
STUDY OF LIMIT CYCLE IN ANTAGONISTICALLY COUPLED MAGNETO-RHEOLOGICAL ACTUATORS	1084
<i>Peyman Yadmellat, Mehrdad R. Kermani</i>	
COALITION COORDINATION FOR TIGHTLY COUPLED MULTIROBOT TASKS WITH SENSOR CONSTRAINTS	1090
<i>Yu (Tony) Zhang, Lynne Parker, Subbarao Kambhampati</i>	

DISTANCE OPTIMAL TARGET ASSIGNMENT IN ROBOTIC NETWORKS UNDER COMMUNICATION AND SENSING CONSTRAINTS	1098
<i>Jingjin Yu, Soon-Jo Chung, Petros G. Voulgaris</i>	
COOPERATIVE POSITIONING/ORIENTATION CONTROL OF MOBILE HETEROGENEOUS ANISOTROPIC SENSOR NETWORKS FOR AREA COVERAGE	1106
<i>Yiannis Stergiopoulos, Anthony Tzes</i>	
SEGREGATION OF MULTIPLE HETEROGENEOUS UNITS IN A ROBOTIC SWARM	1112
<i>Vinicius Graciano Santos, Luciano Pimenta, Luiz Chaimowicz</i>	
DECENTRALIZED FORMATION OF ARBITRARY MULTI-ROBOT LATTICES	1118
<i>Yang Song, Jason O'Kane</i>	
VISIBILITY-ORIENTED COVERAGE CONTROL OF MOBILE ROBOTIC NETWORKS ON NON-CONVEX REGIONS	1126
<i>Yiannis Kantaros, Michalis Thanou, Anthony Tzes</i>	
PATH PLANNING FOR A TETHERED MOBILE ROBOT	1132
<i>Soonkyum Kim, Subhrajit Bhattacharya, Vijay Kumar</i>	
UNCERTAINTY-CONSTRAINED ROBOT EXPLORATION: A MIXED-INTEGER LINEAR PROGRAMMING APPROACH	1140
<i>Luca Carlone, Daniel Lyons</i>	
CONVEX RELAXATIONS OF SE(2) AND SE(3) FOR VISUAL POSE ESTIMATION	1148
<i>Matanya Horowitz, Nikolai Matni, Joel Burdick</i>	
THE SPEED GRAPH METHOD: TIME OPTIMAL NAVIGATION AMONG OBSTACLES SUBJECT TO SAFE BRAKING CONSTRAINT	1155
<i>Gil Manor, Elon Rimon</i>	
HUMAN AWARE UAS PATH PLANNING IN URBAN ENVIRONMENTS USING NONSTATIONARY MDPS	1161
<i>Rakshit Allamraju, Hassan Kingravi, Allan Axelrod, Girish Chowdhary, Robert Grande, Christopher Crick, Weihua Sheng, Jonathan How</i>	
CONTROL-LIMITED DIFFERENTIAL DYNAMIC PROGRAMMING	1168
<i>Yuval Tassa, Nicolas Mansard, Emanuel Todorov</i>	
SUPERNUMERARY ROBOTIC LIMBS FOR AIRCRAFT FUSELAGE ASSEMBLY: BODY STABILIZATION AND GUIDANCE BY BRACING	1176
<i>Federico Parietti, Harry Asada</i>	
MANUAL GUIDANCE OF HUMANOID ROBOTS WITHOUT FORCE SENSORS: PRELIMINARY EXPERIMENTS WITH NAO	1184
<i>Marco Bellaccini, Leonardo Lanari, Antonio Paolillo, Marilena Vendittelli</i>	
IMPLEMENTATION OF A ROBOT-HUMAN OBJECT HANDOVER CONTROLLER ON A COMPLIANT UNDERACTUATED HAND USING JOINT POSITION ERROR MEASUREMENTS FOR GRIP FORCE AND LOAD FORCE ESTIMATIONS	1190
<i>Wesley Patrick Chan, Iori Kumagai, Shunichi Nozawa, Yohei Kakiuchi, Kei Okada, Masayuki Inaba</i>	
INTEGRATION OF PERCEPTION, CONTROL AND INJURY KNOWLEDGE FOR SAFE HUMAN-ROBOT INTERACTION	1196
<i>Matteo Ragaglia, Luca Bascetta, Paolo Rocco, Andrea Maria Zanchettin</i>	
INFERRING WHAT TO IMITATE IN MANIPULATION ACTIONS BY USING A RECOMMENDER SYSTEM	1203
<i>Nichola Abdo, Luciano Spinello, Wolfram Burgard, Cyrill Stachniss</i>	
COMBINING ENERGY AND POWER BASED SAFETY METRICS IN CONTROLLER DESIGN FOR DOMESTIC ROBOTS	1209
<i>Tadele Shiferaw Tadele, Theo De Vries, Stefano Stramigioli</i>	
FAST ON-BOARD MOTION PLANNING FOR MODULAR ROBOTS	1215
<i>Vojtech Vonasek, Lutz Winkler, Jens Liedke, Martin Saska, Karel Kosnar, Libor Preucil</i>	
AUTOMATIC REAL-WORLD ASSEMBLY OF MACHINE-DESIGNED STRUCTURES	1221
<i>Luzius Brodbeck, Fumiya Iida</i>	
AREA OF ACCEPTANCE FOR 3D SELF-ALIGNING ROBOTIC CONNECTORS: CONCEPTS, METRICS, AND DESIGNS	1227
<i>Nick Eckenstein, Mark Yim</i>	
SELF-ASSEMBLY OF A SWARM OF AUTONOMOUS BOATS INTO FLOATING STRUCTURES	1234
<i>Ian O'Hara, James Paulos, Jay Davey, Nick Eckenstein, Neel Doshi, Tarik Tosun, Jonathan Greco, Jungwon Seo, Matthew Turpin, Vijay Kumar, Mark Yim</i>	
SIMPLE, SCALABLE ACTIVE CELLS FOR ARTICULATED ROBOT STRUCTURES	1241
<i>John Swensen, Ahsan Nawroj, Paul Pounds, Aaron Dollar</i>	
A NOVEL APPROACH TO MOTION TRACKING WITH WEARABLE SENSORS BASED ON PROBABILISTIC GRAPHICAL MODELS	1247
<i>Emanuele Ruffaldi, Lorenzo Peppoloni, Alessandro Filippeschi, Carlo Alberto Avizzano</i>	
NOT SEEING IS ALSO BELIEVING: COMBINING OBJECT AND METRIC SPATIAL INFORMATION	1253
<i>Lawson L. S. Wong, Leslie Kaelbling, Tomas Lozano-Perez</i>	
INFERENCE OVER HETEROGENEOUS FINITE-/INFINITE-DIMENSIONAL SYSTEMS USING FACTOR GRAPHS AND GAUSSIAN PROCESSES	1261
<i>David Rosen, Guoquan Huang, John Leonard</i>	
POSITION TRACKING AND SENSORS SELF-CALIBRATION IN AUTONOMOUS MOBILE ROBOTS BY GAUSS-NEWTON OPTIMIZATION	1269
<i>Davide A. Cucci, Matteo Matteucci</i>	

INTELLIGENT MOBILITY ASSISTED MOBILE SENSOR NETWORK LOCALIZATION	1276
<i>Xin Ma, Mingang Zhou, Yibin Li, Jindong Tan</i>	
INTERACTIVE ADAPTATION OF REAL-TIME OBJECT DETECTORS	1282
<i>Daniel Goehring, Judy Hoffman, Erik Rodner, Kate Saenko, Trevor Darrell</i>	
GEOMETRY CONSTRAINED SPARSE EMBEDDING FOR MULTI-DIMENSIONAL TRANSFER FUNCTION DESIGN IN DIRECT VOLUME RENDERING	1290
<i>Zhenzhou Shao, Yong Guan, Hongsheng He, Jindong Tan</i>	
ONLINE SELF-SUPERVISED MULTI-INSTANCE SEGMENTATION OF DYNAMIC OBJECTS	1296
<i>Alex Bewley, Vitor Guizilini, Fabio Ramos, Ben Ugcroft</i>	
VISUAL PRECIS GENERATION USING CORESETS	1304
<i>Rohan Paul, Dan Feldman, Daniela Rus, Paul Newman</i>	
INCREMENTAL UNSUPERVISED TOPOLOGICAL PLACE DISCOVERY	1312
<i>Elizabeth Murphy, Gabe Sibley</i>	
EFFICIENT ROBOT-SENSOR NETWORK DISTRIBUTED SEIF RANGE-ONLY SLAM	1319
<i>Arturo Torres-Gonzalez, J. R. Martinez-De Dios, Anibal Ollero</i>	
MULTI-JOINT ACTUATION PLATFORM FOR LOWER EXTREMITY SOFT EXOSUITS	1327
<i>Ye Ding, Ignacio Galiana, Alan Asbeck, Brendan Quinlivan, Stefano Marco Maria De Rossi, Conor James Walsh</i>	
DESIGN AND EVALUATION OF A PARALLEL-SERIES ELASTIC ACTUATOR FOR LOWER LIMB EXOSKELETONS	1335
<i>Yanhe Zhu, Hongzhe Jin, Jie Zhao</i>	
QUADRATIC PROGRAMMING AND IMPEDANCE CONTROL FOR TRANSFEMORAL PROSTHESIS	1341
<i>Zhao Huihua, Shishir Kolathaya, Aaron Ames</i>	
MECHANICAL IMPLEMENTATION OF POSTURAL SYNERGIES USING A SIMPLE CONTINUUM MECHANISM	1348
<i>Kai Xu, Huan Liu, Yuheng Du, Xinjun Sheng, Xiangyang Zhu</i>	
LOWER BODY EXOSKELETON-SUPPORTED COMPLIANT BIPEDAL WALKING FOR PARAPLEGICS: HOW TO REDUCE UPPER BODY EFFORT?	1354
<i>Barkan Ugurlu, Hironori Oshima, Tatsuo Narikiyo</i>	
IDENTIFIABILITY AND IMPROVEMENT OF ADJOINT ERROR APPROACH FOR SERIAL ROBOT CALIBRATION	1361
<i>Cheng Li, Yuanqing Wu, Zexiang Li</i>	
LCM CYCLE BASED OPTIMAL SCHEDULING IN ROBOTIC CELL WITH PARALLEL WORKSTATIONS	1367
<i>Jiafan Zhang, Xinyu Fang, Liwei Qi</i>	
A METHOD FOR CAPTURING THE TACIT KNOWLEDGE IN THE SURFACE FINISHING SKILL BY DEMONSTRATION FOR PROGRAMMING A ROBOT	1374
<i>Wu Xin Charles Ng, I-Ming Chen, Kelvin Hau-Kong Chan, Wee Kin Teo</i>	
FORMAL VERIFICATION OF A COLLISION-FREE ALGORITHM FOR A DUAL-ARM ROBOT IN HOL4	1380
<i>Liming Li, Zhiping Shi, Yong Guan, Chunnna Zhao, Jie Zhang, Hongxing Wei</i>	
IDENTIFYING THE DYNAMIC MODEL USED BY THE KUKA LWR: A REVERSE ENGINEERING APPROACH	1386
<i>Claudio Roberto Gaz, Fabrizio Flacco, Alessandro De Luca</i>	
COMPARATIVE STUDY OF ROBOT KINEMATIC CALIBRATION ALGORITHMS USING A UNIFIED GEOMETRIC FRAMEWORK	1393
<i>Yuanqing Wu, Cheng Li, Jing Li, Zexiang Li</i>	
TOWARDS ROBOT-ASSISTED VITREORETINAL SURGERY: FORCE-SENSING MICRO-FORCEPS INTEGRATED WITH A HANDHELD MICROMANIPULATOR	1399
<i>Berk Gonenc, Ellen Feldman, Peter Gehlbach, James Handa, Russell H. Taylor, Iulian Iordachita</i>	
NOVEL UNIAXIAL FORCE SENSOR BASED ON VISUAL INFORMATION FOR MINIMALLY INVASIVE SURGERY	1405
<i>Angela Faragasso, Joao Binbo, Yohan Noh, Helge Arne Wurdemann, Sina Sareh, Hongbin Liu, Thrishantha Nanayakkara, Kaspar Althoefer, Allen Jiang</i>	
A MULTI-FUNCTION FORCE SENSING INSTRUMENT FOR VARIABLE ADMITTANCE ROBOT CONTROL IN RETINAL MICROSURGERY	1411
<i>Xingchi He, Marcin Balicki, Peter Gehlbach, James Handa, Russell H. Taylor, Iulian Iordachita</i>	
A MONOLITHIC APPROACH TO FABRICATING LOW-COST, MILLIMETER-SCALE MULTI-AXIS FORCE SENSORS FOR MINIMALLY-INVASIVE SURGERY	1419
<i>Joshua Gafford, Samuel B. Kesner, Alperen Degirmenci, Robert Wood, Robert D. Howe, Conor James Walsh</i>	
ESTIMATION OF TISSUE STIFFNESS USING A PROTOTYPE OF AIR-FLOAT STIFFNESS PROBE	1426
<i>Indika Bandara Wanninayake, Kaspar Althoefer, Lakmal Seneviratne</i>	
AUTONOMOUS MULTILATERAL SURGICAL DEBRIDEMENT WITH THE RAVEN SURGICAL ROBOT	1432
<i>Ben Kehoe, Gregory Kahn, Jeffrey Mahler, Jonathan Wonwook Kim, Alex Xavier Lee, Anna Lee, Keisuke Nakagawa, Sachin Patil, Walter Douglas Boyd, Pieter Abbeel, Ken Goldberg</i>	
SIMPLE PASSIVE VALVES FOR ADDRESSABLE PNEUMATIC ACTUATION	1440
<i>Nils Napp, Brandon Araki, Michael Thomas Tolley, Radhika Nagpal, Robert Wood</i>	
SELF-FOLDING PRINTABLE ELASTIC ELECTRIC DEVICES: RESISTOR, CAPACITOR, AND INDUCTOR	1446
<i>Shuhei Miyashita, Laura Meeker, Maurice Goldi, Yoshihiro Kawahara, Daniela Rus</i>	
BIO-INSPIRED TACTILE SENSOR SLEEVE FOR SURGICAL SOFT MANIPULATORS	1454
<i>Sina Sareh, Allen Jiang, Angela Faragasso, Yohan Noh, Thrishantha Nanayakkara, Prokar Dasgupta, Lakmal Seneviratne, Helge Arne Wurdemann, Kaspar Althoefer</i>	

AN END-TO-END SYSTEM FOR DESIGNING MECHANICAL STRUCTURES FOR PRINT-AND-FOLD ROBOTS	1460
<i>Ankur Mehta, Daniela Rus</i>	
AN END-TO-END APPROACH TO MAKING SELF-FOLDED 3D SURFACE SHAPES BY UNIFORM HEATING	1466
<i>Byoungkwon An, Shuhei Miyashita, Michael Thomas Tolley, Daniel Aukes, Laura Meeker, Erik Demaine, Martin Demaine, Robert Wood, Daniela Rus</i>	
DYNAMIC ANALYSIS AND OPTIMIZATION OF SOFT ROBOTIC FISH USING FLUID-STRUCTURE COUPLING METHOD	1474
<i>Wenjing Zhao, Aiguo Ming, Makoto Shimojo</i>	
NATURAL REDUNDANCY RESOLUTION IN DUAL-ARM MANIPULATION USING CONFIGURATION DEPENDENT STIFFNESS (CDS) CONTROL	1480
<i>Arash Ajoudani, Nikolaos Tsagarakis, Jinh Lee, Marco Gabiccini, Antonio Bicchi</i>	
A PASSIVITY BASED COMPLIANCE STABILIZER FOR HUMANOID ROBOTS	1487
<i>Chengxu Zhou, Zhibin Li, Juan Alejandro Castano, Houman Dallali, Nikolaos Tsagarakis, Darwin G. Caldwell</i>	
POWER-CONTINUOUS SYNCHRONISATION OF OSCILLATORS: A NOVEL, ENERGY-FREE WAY TO SYNCHRONISE DYNAMICAL SYSTEMS	1493
<i>Gerrit Adriaan Folkertsma, Arjan J. Van Der Schaft, Stefano Stramigioli</i>	
CONTACT DYNAMICS OF MESSAGE COMPLIANT ROBOTIC ARM AND ITS COUPLED STABILITY	1499
<i>Yuanfan Huang, Philippe Soueres, Jian Li</i>	
A GENERALIZED CONTROL FRAMEWORK OF ASSISTIVE CONTROLLERS FOR LOWER LIMB EXOSKELETONS	1505
<i>Eunyoung Baek, Seok-Ki Song, Sehoon Oh, Samer Mohammed, Doyoung Jeon, Kyoungchul Kong</i>	
UNSUPERVISED LEARNING OF THRESHOLD FOR GEOMETRIC VERIFICATION IN VISUAL-BASED LOOP-CLOSURE	1510
<i>Gim Hee Lee, Marc Pollefeys</i>	
LINEAR MONOSLAM: A LINEAR APPROACH TO LARGE-SCALE MONOCULAR SLAM PROBLEMS	1517
<i>Liang Zhao, Shoudong Huang, Gamini Dissanayake</i>	
A BENCHMARK FOR RGB-D VISUAL ODOMETRY, 3D RECONSTRUCTION AND SLAM	1524
<i>Ankur Handa, Thomas Whelan, John McDonald, Andrew J Davison</i>	
REAL-TIME 6-DOF MONOCULAR VISUAL SLAM IN A LARGE-SCALE ENVIRONMENT	1532
<i>Hyon Lim, Jongwoo Lim, H. Jin Kim</i>	
HIGH LEVEL LANDMARK-BASED VISUAL NAVIGATION USING UNSUPERVISED GEOMETRIC CONSTRAINTS IN LOCAL BUNDLE ADJUSTMENT	1540
<i>Yan Lu, Dezheng Song, Jingang Yi</i>	
SALIENT REGION DETECTION BASED ON LOCAL AND GLOBAL SALIENCY	1546
<i>Peng Wang, Zhou Zhi, Liu Wei, Hong Qiao</i>	
A FAST, GPU-BASED GEOMETRICAL PLACEMENT PLANNER FOR UNKNOWN SENSOR-MODELLED OBJECTS AND PLACEMENT AREAS	1552
<i>Johannes Baumgartl, Tim Werner, Per Kaminsky, Dominik Henrich</i>	
DEXTEROUS MANIPULATION USING BOTH PALM AND FINGERS	1560
<i>Yunfei Bai, Karen Liu</i>	
IMPROVING EFFICIENCY OF INTRICATE MANIPULATION PLANNING THROUGH MAPPING OF GRASP FEASIBILITY ZONES	1566
<i>Mihai Pomarlan, Ioan Alexandru Sucan</i>	
FORAGE RRT - AN EFFICIENT APPROACH TO TASK-SPACE GOAL PLANNING FOR HIGH DIMENSIONAL SYSTEMS	1572
<i>Leo Keselman, Erik Verriest, Patricio Vela</i>	
EXTRINSIC DEXTERITY: IN-HAND MANIPULATION WITH EXTERNAL FORCES	1578
<i>Nikhil Chavan Dafle, Alberto Rodriguez, Robert Paolini, Bowei Tang, Siddhartha Srinivasa, Michael Erdmann, Matthew T. Mason, Ivan Lundberg, Harald Staab, Thomas Fuhlbrigge</i>	
CHECKING THE CABLE CONFIGURATION OF CABLE-DRIVEN PARALLEL ROBOTS ON A TRAJECTORY	1586
<i>Jean-Pierre Merlet</i>	
INSTANTANEOUS EGO-MOTION ESTIMATION USING MULTIPLE DOPPLER RADARS	1592
<i>Dominik Kellner, Michael Barjenbruch, Jens Klappstein, Jurgen Dickmann, Klaus Dietmayer</i>	
A NEW HIERARCHICAL BINAURAL SOUND SOURCE LOCALIZATION METHOD BASED ON INTERAURAL MATCHING FILTER	1598
<i>Hong Liu, Jie Zhang, Zhuo Fu</i>	
UNIFIED HYSTERESIS AND CREEP COMPENSATION IN AFM TIP POSITIONING WITH AN EXTENDED PI MODEL	1606
<i>Zhiyu Wang, Lianqing Liu, Zhidong Wang, Wenxue Wang</i>	
ALL-ENVIRONMENT VISUAL PLACE RECOGNITION WITH SMART	1612
<i>Edward Pepperell, Peter Corke, Michael J Milford</i>	
MAPPING OF PASSIVE UHF RFID TAGS WITH A MOBILE ROBOT USING OUTLIER DETECTION AND NEGATIVE INFORMATION	1619
<i>Artur Koch, Andreas Zell</i>	
SINGLE BEACON BASED MULTI-ROBOT COOPERATIVE LOCALIZATION USING MOVING HORIZON ESTIMATION	1625
<i>Sen Wang, Ling Chen, Dongbing Gu, Huosheng Hu</i>	

GPU-BASED DYNAMIC SEARCH ON ADAPTIVE RESOLUTION GRIDS	1631
<i>Francisco Garcia, Mubbasir Kapadia, Norm Badler</i>	
SHARED CONTROL OF AUTONOMOUS VEHICLES BASED ON VELOCITY SPACE OPTIMIZATION	1639
<i>Javier Alonso-Mora, Pascal Gohl, Scott Watson, Roland Siegwart, Paul Beardsley</i>	
GAME THEORETIC CONTROLLER SYNTHESIS FOR MULTI-ROBOT MOTION PLANNING PART I : TRAJECTORY BASED ALGORITHMS	1646
<i>Minghui Zhu, Michael W. Otte, Pratik Chaudhari, Emilio Frazzoli</i>	
PATH PLANNING FOR COHERENT AND PERSISTENT GROUPS	1652
<i>Tianyu Huang, Mubbasir Kapadia, Norm Badler, Marcelo Kallmann</i>	
A COMPLETE ALGORITHM FOR VISIBILITY-BASED PURSUIT-EVASION WITH MULTIPLE ROBOTS	1660
<i>Nicholas Stiffler, Jason O'Kane</i>	
BEHAVIOR-BASED MULTI-ROBOT COLLISION AVOIDANCE	1668
<i>Dali Sun, Alexander Kleiner, Bernhard Nebel</i>	
TOWARDS INTEGRATED OR/CP ENERGY OPTIMIZATION FOR ROBOT CELLS	1674
<i>Oskar Wigstrom, Bengt Lennartson</i>	
MODULARIZED GLOBAL EQUALIZATION OF BATTERY CELLS FOR ELECTRIC VEHICLES	1681
<i>Feng Ju, Weiwen Deng, Jingshan Li</i>	
AN IN-PIPE ROBOT WITH UNDERACTUATED PARALLELOGRAM CRAWLER MODULES	1687
<i>Atsushi Kakogawa, Shugen Ma, Shigeo Hirose</i>	
VISION BASED GUIDANCE FOR ROBOT NAVIGATION IN AGRICULTURE	1693
<i>Andrew English, Patrick Ross, David Ball, Peter Corke</i>	
NOVELTY-BASED VISUAL OBSTACLE DETECTION IN AGRICULTURE	1699
<i>Patrick Ross, Andrew Robert English, David Ball, Ben Upcroft, Gordon Wyeth, Peter Corke</i>	

VOLUME 3

A SYSTEM FOR AUTOMATED COUNTING OF FETAL AND MATERNAL RED BLOOD CELLS IN CLINICAL KB TEST	1706
<i>Ji Ge, Zheng Gong, Jun Chen, Jun Liu, John Nguyen, Zongyi Yang, Chen Wang, Yu Sun</i>	
LIGHTING INVARIANT URBAN STREET CLASSIFICATION	1712
<i>Ben Upcroft, Colin McManus, Winston Churchill, Will Maddern, Paul Newman</i>	
BIO-INSPIRED ROUGH TERRAIN CONTACT PATCH PERCEPTION	1719
<i>Dimitrios Kanoulas, Marsette Vona</i>	
ONLINE APPROXIMATE MODEL REPRESENTATION OF UNKNOWN OBJECTS	1725
<i>Kiho Kwak, Jun-Sik Kim, Daniel Huber, Takeo Kanade</i>	
A COMPUTATIONAL TOOL TO IMPROVE FLAPPING EFFICIENCY OF ROBOTIC INSECTS	1733
<i>Yufeng Chen, Alexis Lussier Desbiens, Robert Wood</i>	
EXPLOITING THE DYNAMICS OF A ROBOTIC MANIPULATOR FOR CONTROL OF UAVS	1741
<i>Abeje Y. Mersha, Stefano Stramigioli, Raffaella Carloni</i>	
LEARNING QUADROTOR MANEUVERS FROM OPTIMAL CONTROL AND GENERALIZING IN REAL- TIME	1747
<i>Teodor Tomic, Moritz Maier, Sami Haddadin</i>	
CONTROLLING A TEAM OF ROBOTS WITH A SINGLE INPUT	1755
<i>Nora Ayanian, Andrew Spielberg, Matthew Arbesfeld, Jason Strauss, Daniela Rus</i>	
MULTI-ROBOT SYSTEM WITH FRACTIONAL-ORDER DIFFERENTIAL EQUATIONS MODELING AND CONTROL	1763
<i>Bill Goodwine</i>	
PASSIVITY-BASED CONTROL FOR NETWORKED ROBOTIC SYSTEM OVER UNRELIABLE COMMUNICATION	1769
<i>Yen-Chen Liu, Seng-Ming Pua</i>	
GENERATING WHOLE-BODY MOTION KEEP AWAY FROM JOINT TORQUE, CONTACT FORCE, CONTACT MOMENT LIMITATIONS ENABLING STEEP CLIMBING WITH A REAL HUMANOID ROBOT	1775
<i>Shintaro Noda, Masaki Murooka, Shunichi Nozawa, Yohei Kakiuchi, Kei Okada, Masayuki Inaba</i>	
SUPPORT CHANGES DURING ONLINE HUMAN MOTION IMITATION BY A HUMANOID ROBOT USING TASK SPECIFICATION	1782
<i>Louise Penna Poubel, Sophie Sakka, Denis Cehajic, Denis Creusot</i>	
DANCE-LIKE HUMANOID MOTION GENERATION THROUGH FOOT TOUCH STATES CLASSIFICATION	1788
<i>Kunio Kojima, Shunichi Nozawa, Kei Okada, Masayuki Inaba</i>	
PEOPLE DETECTION AND TRACKING FROM AERIAL THERMAL VIEWS	1794
<i>Jan Portmann, Simon Lynen, Margarita Chli, Roland Siegwart</i>	
ADAPT: REAL-TIME ADAPTIVE PEDESTRIAN TRACKING FOR CROWDED SCENES	1801
<i>Aniket Bera, Nico Galoppo, Dillon Sharlet, Adam Lake, Dinesh Manocha</i>	
LUKE: AN AUTONOMOUS ROBOT PHOTOGRAPHER	1809
<i>Manfredas Zabarauskas, Stephen Cameron</i>	
COMPARISON OF ORNITHOPTER WIND TUNNEL FORCE MEASUREMENTS WITH FREE FLIGHT	1816
<i>Cameron Rose, Ronald Fearing</i>	

ACTION EFFECT GENERALIZATION, RECOGNITION AND EXECUTION THROUGH CONTINUOUS GOAL-DIRECTED ACTIONS	1822
<i>Santiago Morante Cendrero, Juan G. Victores, Alberto Jardon Huete, Carlos Balaguer</i>	
OBJECT-CENTERED HYBRID REASONING FOR WHOLE-BODY MOBILE MANIPULATION	1828
<i>Daniel Leidner, Alexander Dietrich, Florian Schmidt, Christoph Borst, Alin Albu-Schaffer</i>	
A MULTI-SENSOR FUSION SYSTEM FOR MOVING OBJECT DETECTION AND TRACKING IN URBAN DRIVING ENVIRONMENTS	1836
<i>Hyunggi Cho, Young-Woo Seo, B. V. K Vijaya Kumar, Ragunathan (Raj) Rajkumar</i>	
A SOFT, AMORPHOUS SKIN THAT CAN SENSE AND LOCALIZE TEXTURE	1844
<i>Dana Hughes, Nikolaus Correll</i>	
A PRECISE GAIT PHASE DETECTION BASED ON HIGH-FREQUENCY VIBRATION ON LOWER LIMBS	1852
<i>Shuhei Kadoya, Naohisa Nagaya, Masashi Konyo, Satoshi Tadokoro</i>	
LEARN TO WIPE: A CASE STUDY OF STRUCTURAL BOOTSTRAPPING FROM SENSORIMOTOR EXPERIENCE	1858
<i>Martin Do, Julian Schill, Johannes Ernesti, Tamim Asfour</i>	
FULL BODY MOTION ADAPTION BASED ON TASK-SPACE DISTANCE MESHES	1865
<i>Thomas Nierhoff, Sandra Hirche, Wataru Takano, Yoshihiko Nakamura</i>	
SYNTHESIS OF WHOLE BODY MOTION WITH POSE-CONSTRAINTS FROM STOCHASTIC MODEL	1871
<i>Wataru Takano, Yoshihiko Nakamura</i>	
EVENT-BASED DEVICE-BEHAVIOR SWITCHING IN SURGICAL HUMAN-ROBOT INTERACTION	1877
<i>Mirko Daniele Comparetti, Elisa Beretta, Mirko Kunze, Elena De Momi, Joerg Raczowsky, Giancarlo Ferrigno</i>	
SAFETY DESIGN VIEW: A CONCEPTUAL FRAMEWORK FOR SYSTEMATIC UNDERSTANDING OF SAFETY FEATURES OF MEDICAL ROBOT SYSTEMS	1883
<i>Min Yang Jung, Russell H. Taylor, Peter Kazanzides</i>	
SMART TISSUE ANASTOMOSIS ROBOT (STAR): ACCURACY EVALUATION FOR SUPERVISORY SUTURING USING NEAR-INFRARED FLUORESCENT MARKERS	1889
<i>Simon Leonard, Azad Shademan, Yonjae Kim, Axel Krieger, Peter Kim</i>	
MULTI-SCALE BIO-INSPIRED PLACE RECOGNITION	1895
<i>Zetao Chen, Adam Jacobson, Ugur Murat Erdem, Michael Hasselmo, Michael J Milford</i>	
INTRINSICALLY MOTIVATED LEARNING OF VISUAL MOTION PERCEPTION AND SMOOTH PURSUIT	1902
<i>Chong Zhang, Yu Zhao, Jochen Triesch, Bertram Emil Shi</i>	
TACTILE SENSORY DECODING IN A NEUROMORPHIC INTERACTIVE ROBOT	1909
<i>Jeffrey Krichmar, Liam Bucci, Ting-Shuo Chou</i>	
INTERACTIVE-RATE MOTION PLANNING FOR CONCENTRIC TUBE ROBOTS	1915
<i>Luis G. Torres, Cenk Baykal, Ron Alterovitz</i>	
PATH PLANNING OF A LASER MANIPULATION ROBOTIC END-EFFECTOR FOR TOOTH PREPARING	1922
<i>Lei Ma, Dangxiao Wang, Yuru Zhang, Wang Lei, Peijun Lv, Yuchun Sun</i>	
A NOVEL ROBUST TEMPLATE MATCHING METHOD TO TRACK AND FOLLOW BODY TARGETS FOR NIUTS	1929
<i>Norihiro Koizumi, Takakazu Funamoto, Joonho Seo, Dongjung Lee, Hiroyuki Tsukihara, Akira Nomiya, Takashi Azuma, Katsunori Yoshinaka, Naohiko Sugita, Yukio Homma, Yoichiro Matsumoto, Mamoru Mitsuishi</i>	
PUSH RECOVERY AND ONLINE GAIT GENERATION FOR 3D BIPEDS WITH THE FOOT PLACEMENT ESTIMATOR	1937
<i>Brandon J Dehart, Dana Kulic</i>	
VERSATILE AND ROBUST 3D WALKING WITH A SIMULATED HUMANOID ROBOT (ATLAS): A MODEL PREDICTIVE CONTROL APPROACH	1943
<i>Salman Faraji, Soha Pouya, Christopher Atkeson, Auke Ijspeert</i>	
AN EXPERIMENTAL COMPARISON OF BAYESIAN OPTIMIZATION FOR BIPEDAL LOCOMOTION	1951
<i>Roberto Calandra, Andre Seyfarth, Jan Peters, Marc Peter Deisenroth</i>	
GIVING ADVICE TO AGENTS WITH HIDDEN GOALS	1959
<i>Benjamin Rosman, Subramanian Ramamoorthy</i>	
BIPEDAL HUMANOID ROBOT THAT MAKES HUMAN LAUGH WITH USE OF THE METHOD OF COMEDY AND AFFECTS THEIR PSYCHOLOGICAL STATE ACTIVELY	1965
<i>Tatsuhiko Kishi, Nobutsuna Endo, Takashi Nozawa, Takuya Otani, Sarah Cosentino, Massimiliano Zecca, Kenji Hashimoto, Atsuo Takanishi</i>	
OPTIMIZATION OF INTERMODAL RAIL-ROAD FREIGHT TRANSPORT TERMINALS	1971
<i>Mariagrazia Dotoli, Nicola Epicoco, Marco Falagario, Carla Seatzu, Biagio Turchiano</i>	
BELIEF PROPAGATION BASED LOCALIZATION AND MAPPING USING SPARSELY SAMPLED GNSS SNR MEASUREMENTS	1977
<i>Andrew T Irish, Jason Tony Isaacs, Francois Quitin, Joao Pedro Hespanha, Upamanyu Madhow</i>	
OMNIMAPPER: A MODULAR MULTIMODAL MAPPING FRAMEWORK	1983
<i>Alexander J B Trevor, John G. Rogers III, Henrik Iskov Christensen</i>	
METHOD OF IMPROVING WIFI SLAM BASED ON SPATIAL AND TEMPORAL COHERENCE	1991
<i>Shao-Wen Yang, Xue Yang, Lei Yang</i>	
FAST GRASPABILITY EVALUATION ON SINGLE DEPTH MAPS FOR BIN PICKING WITH GENERAL GRIPPERS	1997
<i>Yukiyasu Domae, Haruhisa Okuda, Yuichi Taguchi, Kazuhiko Sumi, Takashi Hirai</i>	
TWO-FINGER CAGING OF 3D POLYHEDRA USING CONTACT SPACE SEARCH	2005
<i>Thomas F Allen, Joel Burdick, Elon Rimon</i>	

INTERACTIVE BAYESIAN IDENTIFICATION OF KINEMATIC MECHANISMS	2013
<i>Patrick Rene Barragan, Leslie Kaelbling, Tomas Lozano-Perez</i>	
VOLUMETRIC 3D MAPPING IN REAL-TIME ON A CPU	2021
<i>Frank Steinbrucker, Jurgen Sturm, Daniel Cremers</i>	
MAXIMALLY INFORMATIVE SURFACE RECONSTRUCTION FROM LINES	2029
<i>Jonas Witt, Gerhard Mentges</i>	
MODERN MAP INFERENCE METHODS FOR ACCURATE AND FAST OCCUPANCY GRID MAPPING ON HIGHER ORDER FACTOR GRAPHS	2037
<i>Vikas Dhiman, Abhijit Kundu, Frank Dellaert, Jason Corso</i>	
DYNAMICALLY FEASIBLE TAK-CONSTRAINED MOTION PLANNING WITH MOVING OBSTACLES	2045
<i>Massimo Cefalo, Giuseppe Oriolo</i>	
INCREMENTAL SAMPLING-BASED ALGORITHM FOR RISK-AWARE PLANNING UNDER MOTION UNCERTAINTY	2051
<i>Wei Liu, Ang Marcelo</i>	
EFFICIENT EXACT COLLISION-CHECKING OF 3-D RIGID BODY MOTIONS USING LINEAR TRANSFORMATIONS AND DISTANCE COMPUTATIONS IN WORKSPACE	2059
<i>He Liang, Jur Van Den Berg</i>	
VISION-BASED FORCE SENSING OF A MAGNETIC MICROROBOT IN A VISCOUS FLOW	2065
<i>Karim Belharet, David Folio, Antoine Ferreira</i>	
A NOVEL TWO-DIMENSIONAL LOCOMOTION SCHEME OF A MICRO-ROBOT WITH ONLY A UNIFORM MAGNETIC FIELD	2071
<i>Jinsoo Kim, Seung-Jong Kim</i>	
THREE-DIMENSIONAL ROBOTIC MANIPULATION AND TRANSPORT OF MICRO-SCALE OBJECTS BY A MAGNETICALLY DRIVEN CAPILLARY MICRO-GRIPPER	2077
<i>Joshua Giltinan, Eric D. Diller, Çağıl Mayda, Metin Sitti</i>	
ROBOT GUIDED WATER JET CUTTING TO ASSIST OSTEOTOMIES OF HUMAN BONES	2083
<i>Ralf Westphal, David Zarembo, Thomas Hassel, Eduardo M. Suero, Hawi Nael, Musa Citak, Christian Krettek, Friedrich-Wilhelm Bach, Friedrich M. Wahl</i>	
IMPLEMENTATION OF DYNAMIC CONTROLLERS USING REAL-TIME MIDDLEWARE FOR A LOW-COST PARALLEL ROBOT	2084
<i>Jose Casalilla, Marina Valles, Miguel Diaz-Rodriguez, Vicente Mata, Angel Soriano, Angel Valera</i>	
ROS4IOS: NATIVE ROS DEVELOPMENT ON IOS DEVICES	2085
<i>Ronan Chauvin, Francois Ferland, Dominic Letourneau, Francois Michaud</i>	
MOTION PLANNING AND CONTROL OF LADDER CLIMBING ON DRC-HUBO FOR DARPA ROBOTICS CHALLENGE	2086
<i>Yajia Zhang, Jingru Luo, Kris Hauser, H. Andy Park, Manas Paldhe, C. S. George Lee, Robert Ellenberg, Brittany Killen, Paul Y. Oh, Jun Ho Oh, JungHo Lee, Inhyeok Kim</i>	
A SUMMARY OF TEAM MIT'S APPROACH TO THE VIRTUAL ROBOTICS CHALLENGE	2087
<i>Russ Tedrake, Maurice Fallon, Sisir Karumanchi, Scott Kuindersma, Matthew Antone, Toby Schneider, Thomas Howard, Matthew Walter, Hongkai Dai, Robin Deits, Michael Fleder, Deham Fourie, Sachithra Madhawa Hemachandra, Claudia Perez-D'Arpino, Sudeep Pillai, Andres Valenzuela, Cecilia Cantu, Christopher G Dolan, Isaac Evans, Steven Jens Jorgensen, Jaguar Kristeller, Julie A. Shah, Karl Iagnemma, Seth Teller</i>	
DARPA ROBOTICS CHALLENGE: TOWARDS A USER-GUIDED MANIPULATION FRAMEWORK FOR HIGH-DOF ROBOTS	2088
<i>Nicholas Alunni, Calder Phillips-Grafflin, Halit Bener Suay, Jim Mainprice, Dmitry Berenson, Sonia Chernova, Robert Lindeman, Daniel Lofaro, Paul Y. Oh</i>	
ULTRAPIANO: A NOVEL HUMAN-MACHINE INTERFACE APPLIED TO VIRTUAL REALITY	2089
<i>Mikel Sagardia, Katharina Hertkorn, David Sierra Gonzalez, Claudio Castellini, Daniel Leidner</i>	
TURBOQUAD: A LEG-WHEEL TRANSFORMABLE ROBOT USING BIO-INSPIRED CONTROL	2090
<i>Wei-Hsi Chen, Hung-Sheng Lin, Pei-Chun Lin</i>	
MIT LEAK DETECTOR: AN IN-PIPE LEAK DETECTION ROBOT	2091
<i>Dimitris Chatzigeorgiou, You Wu, Kamal Youcef-Toumi, Rached Ben-Mansour</i>	
NON-CONTACT MANIPULATION FOR AUTOMATED PROTEIN CRYSTAL HARVESTING USING A ROLLING MICROROBOT	2092
<i>Hsi-Wen Tung, Roel S. Pieters, David Fisher Sargent, Bradley J. Nelson</i>	
IMPEDANCE CONTROL OF VTOL UAVS WITH A MOMENTUM-BASED EXTERNAL GENERALIZED FORCES ESTIMATOR	2093
<i>Fabio Ruggiero, Jonathan Cacace, Hamid Sadeghian, Vincenzo Lippiello</i>	
LOCALIZATION AND MAPPING FOR AERIAL MANIPULATION BASED ON RANGE-ONLY MEASUREMENTS AND VISUAL MARKERS	2100
<i>Felipe R. Fabresse, Fernando Caballero, Ivan Maza, Anibal Ollero</i>	
AERIAL MANIPULATION ROBOT COMPOSED OF AN AUTONOMOUS HELICOPTER AND A 7 DEGREES OF FREEDOM INDUSTRIAL MANIPULATOR	2107
<i>Konstantin Kondak, Felix Huber, Marc Schwarzbach, Maximilian Laiacker, Dominik Sommer, Manuel Bejar, Anibal Ollero</i>	
TOWARD IMAGE BASED VISUAL SERVOING FOR AERIAL GRASPING AND PERCHING	2113
<i>Justin Thomas, Giuseppe Loiano, Koushil Sreenath, Vijay Kumar</i>	
A SIMPLE AND ROBUST SOLUTION TO THE MINIMAL GENERAL POSE ESTIMATION	2119
<i>Pedro Miraldo, Helder Araujo</i>	
ROBOT CONTROL SYSTEM FOR MULTI-POSITION ALIGNMENT USED TO AUTOMATE AN INDUSTRIAL ROBOT CALIBRATION APPROACH	2126
<i>Erick Nieves, Ning Xi</i>	

EMPIRICAL MODELLING OF ROLLING SHUTTER EFFECT	2132
<i>Liam O'Sullivan, Peter Corke</i>	
SIMULTANEOUS PROTOTYPE SELECTION AND OUTLIER ISOLATION FOR TRAFFIC SIGN RECOGNITION: A COLLABORATIVE SPARSE OPTIMIZATION METHOD	2138
<i>Huaping Liu</i>	
ROBUST OPTIMAL DEPLOYMENT IN MOBILE SENSOR NETWORKS WITH PEER-TO-PEER COMMUNICATION	2144
<i>Hyongju Park, Seth Hutchinson</i>	
EXPLORATION VIA STRUCTURED TRIANGULATION BY A MULTI-ROBOT SYSTEM WITH BEARING-ONLY LOW-RESOLUTION SENSORS	2150
<i>Seoung Kyou Lee, Aaron Becker, Sandor Fekete, Alexander Kroller, James McLurkin</i>	
ASSIGNMENT ALGORITHMS FOR MODELING RESOURCE CONTENTION AND INTERFERENCE IN MULTI-ROBOT TASK-ALLOCATION	2158
<i>Changjoo Nam, Dylan Shell</i>	
HIERARCHICAL AUCTION-BASED MECHANISM FOR REAL-TIME RESOURCE RETRIEVAL IN CLOUD MOBILE ROBOTIC SYSTEM	2164
<i>Lujia Wang, Ming Liu, Max Q.-H. Meng</i>	
DYNAMICS IDENTIFICATION OF A DAMPED MULTI ELASTIC LINK ROBOT ARM UNDER GRAVITY	2170
<i>Jorn Malzahn, Rene Felix Reinhart, Torsten Bertram</i>	
A MODEL-FREE APPROACH TO VIBRATION SUPPRESSION FOR INTRINSICALLY ELASTIC ROBOTS	2176
<i>Florian Petit, Christian Ott, Alin Albu-Schaffer</i>	
TASK-CONSTRAINED CONTINUUM MANIPULATION IN CLUTTERED SPACE	2183
<i>Jinglin Li, Jing Xiao</i>	
DESIGN AND CONTROL OF A SOFT AND CONTINUOUSLY DEFORMABLE 2D ROBOTIC MANIPULATION SYSTEM	2189
<i>Andrew Marchese, Konrad Komorowski, Cagdas Denizel Onal, Daniela Rus</i>	
VISIBILITY ANALYSIS FOR AUTONOMOUS VEHICLE COMFORTABLE NAVIGATION	2197
<i>Luis Yoichi Morales Saiki, Kazuhiko Shinozawa, Norihiro Hagita, Nagasrikanth Kallakuri, Tetsushi Ikeda, Tadahisa Kondo, Jani Even</i>	
HUMAN-ROBOT COLLABORATION IN A MOBILE VISUAL SENSOR NETWORK	2203
<i>Ha Manh Do, Craig Mouser, Meiqin Liu, Weihua Sheng</i>	
EXPLICIT VS. TACIT LEADERSHIP IN INFLUENCING THE BEHAVIOR OF SWARMS	2209
<i>Saman Amirpour Amraii, Phillip Walker, Michael Lewis, Nilanjan Chakraborty, Katia Sycara</i>	
ANTICIPATING HUMAN ACTIONS FOR COLLABORATION IN THE PRESENCE OF TASK AND SENSOR UNCERTAINTY	2215
<i>Kelsey Hawkins, Shray Bansal, Nam Vo, Aaron Bobick</i>	
PERSONAL ROBOT ASSISTING TRANSPORTATION TO SUPPORT ACTIVE HUMAN LIFE -REFERENCE GENERATION BASED ON MODEL PREDICTIVE CONTROL FOR ROBUST QUICK TURNING	2223
<i>Noriaki Hirose, Ryosuke Tajima, Kazutoshi Sukigara, Minoru Tanaka</i>	
INTERACTIVE ROBOTS AS SOCIAL PARTNER FOR COMMUNICATION CARE	2231
<i>Lili Liu, Bingbing Li, I-Ming Chen, Tze Jui Goh, Min Sung</i>	
NON-MONOLOGUE HMM-BASED SPEECH SYNTHESIS FOR SERVICE ROBOTS: A CLOUD ROBOTICS APPROACH	2237
<i>Komei Sugiura, Yoshinori Shiga, Hisashi Kawai, Teruhisa Misu, Chiiori Hori</i>	
FAST MARCHING SOLUTION FOR THE SOCIAL PATH PLANNING PROBLEM	2243
<i>Javier V. Gomez, Santiago Garrido, Nikolaos Mavridis</i>	
BLIND COLLISION DETECTION AND OBSTACLE CHARACTERISATION USING A COMPLIANT ROBOTIC ARM	2249
<i>Piyamate Wasuntapichaikul, Jindong Liu, Ching-Mei Chen, Guang-Zhong Yang</i>	
CONTACT EVENT DETECTION FOR ROBOTIC OIL DRILLING	2255
<i>Xin Alice Wu, Natalie Burkhard, Barrett Heyneman, Roald Valen, Mark Cutkosky</i>	
ST-HMP: UNSUPERVISED SPATIO-TEMPORAL FEATURE LEARNING FOR TACTILE DATA	2262
<i>Marianna Madry, Liefeng Bo, Danica Kragic, Dieter Fox</i>	
ACTION SELECTION FOR TOUCH-BASED LOCALISATION TRADING OFF INFORMATION GAIN AND EXECUTION TIME	2270
<i>Niccolo Tosi, Olivier David, Herman Bruyninckx</i>	
MODEL PREDICTIVE CONTROL ARCHITECTURES WITH FORCE FEEDBACK FOR ROBOTIC-ASSISTED BEATING HEART SURGERY	2276
<i>Michel Dominici, Rui Cortesao</i>	
MODEL-FREE FORCE TRACKING CONTROL OF PIEZOELECTRIC ACTUATORS: APPLICATION TO VARIABLE DAMPING ACTUATOR	2283
<i>Jinoh Lee, Matteo Laffranchi, Navvab Kashiri, Nikolaos Tsagarakis, Darwin G. Caldwell</i>	
CONSTRAINT-BASED SPECIFICATION OF HYBRID POSITION-IMPEDANCE-FORCE TASKS	2290
<i>Gianni Borghesan, Joris De Schutter</i>	
COMPLIANCE CONTROL FOR STANDING MAINTENANCE OF HUMANOID ROBOTS UNDER UNKNOWN EXTERNAL DISTURBANCES	2297
<i>Yaliang Wang, Rong Xiong, Qiuguo Zhu, Jian Chu</i>	
AUTOMATIC KINEMATIC CHAIN CALIBRATION USING ARTIFICIAL SKIN: SELF-TOUCH IN THE ICUB HUMANOID ROBOT	2305
<i>Alessandro Roncone, Matej Hoffmann, Ugo Pattacini, Giorgio Metta</i>	

RUNNING MODEL AND HOPPING ROBOT USING PELVIC MOVEMENT AND LEG ELASTICITY	2313
<i>Takuya Otani, Masaaki Yahara, Kazuhiro Uryu, Akihiro Itzuka, Kenji Hashimoto, Tatsuhiro Kishi, Nobutsuna Endo, Masanori Sakaguchi, Yasuo Kawakami, Sang-Ho Hyon, Hun-Ok Lim, Atsuo Takanishi</i>	
SUPRAPEDS: HUMANOID CONTACT-SUPPORTED LOCOMOTION FOR 3D UNSTRUCTURED ENVIRONMENTS	2319
<i>Oussama Khatib, Shu Yun Chung</i>	
RICH PERIODIC MOTOR SKILLS ON HUMANOID ROBOTS: RIDING THE PEDAL RACER	2326
<i>Andrej Gams, Jesse Van Den Kieboom, Massimo Vespignani, Guyot Luc, Ales Ude, Auke Ijspeert</i>	
MODEL BASED SLIDING MODE CONTROL FOR A 3-DOF TRANSLATIONAL MICRO PARALLEL POSITIONING STAGE	2333
<i>Shunli Xiao, Yangmin Li</i>	
STRUCTURAL OPTIMIZATION METHOD TOWARDS SYNTHESIS OF SMALL SCALE FLEXURE-BASED MOBILE GRIPPERS	2339
<i>Guo Zhan Lum, Eric D. Diller, Metin Sitti</i>	
DESIGN OF A FORCE-DECOUPLED COMPOUND PARALLEL ALIGNMENT STAGE FOR HIGH-RESOLUTION IMPRINT LITHOGRAPHY	2345
<i>Xiantao Sun, Weihai Chen, Rui Zhou, Wenjie Chen, Jianbin Zhang</i>	
DESIGN AND TESTING OF A NOVEL XY MICROPOSITIONING STAGE WITH DUAL RANGES AND RESOLUTIONS	2351
<i>Qingsong Xu</i>	
DESIGN OF A TELEOPERATED ROBOTIC SYSTEM FOR RETINAL SURGERY	2357
<i>Andy Gijbels, Emmanuel B Vander Poorten, Peter Stalmans, Hendrik Van Brussel, Dominiek Reynaerts</i>	
DESIGN OPTIMIZATION OF A BONE-ATTACHED, REDUNDANT AND RECONFIGURABLE PARALLEL KINEMATIC DEVICE FOR SKULL SURGERY	2364
<i>Jan-Philipp Kobler, Jens Kotlarski, Georg Jakob Lexow, Omid Majdani, Tobias Ormaier</i>	
DESIGN OF A NEW COUNTER-BALANCING STACKABLE MECHANISM	2372
<i>Jong Tae Seo, Jae Hong Woo, Hoon Lim, Byung-Ju Yi</i>	
DESIGN OF A COMPLIANCE ASSISTED QUADRUPEL AMPHIBIOUS ROBOT	2378
<i>Andrew Vogel, Krishnanand N. Kaipa, Gregory Krummel, Hugh Bruck, Satyandra K. Gupta</i>	
A WIRELESSLY POWERED, BIOLOGICALLY INSPIRED AMBULATORY MICROROBOT	2384
<i>Michael Karpelson, Benjamin Waters, Benjamin Goldberg, Brody Mahoney, Onur Ozcan, Andrew Baisch, Pierre-Marie Meyintang, Joshua R. Smith, Robert Wood</i>	
GENERATION OF ADAPTIVE SPLITBELT TREADMILL WALKING OF A BIPED ROBOT USING LEARNING OF INTRALIMB AND INTERLIMB COORDINATIONS	2392
<i>Soichiro Fujiki, Shinya Aoi, Kei Senda, Kazuo Tsuchiya</i>	
POWERTRAIN SELECTION FOR A BIOLOGICALLY-INSPIRED MINIATURE QUADRUPEL ROBOT	2398
<i>Onur Ozcan, Andrew Baisch, Daniel Ithier, Robert Wood</i>	
ANALYSIS OF A VARIABLE STIFFNESS DIFFERENTIAL DRIVE (VSDD)	2406
<i>Matteo Fumagalli, Stefano Stramigioli, Raffaella Carloni</i>	
NATURAL DYNAMICS MODIFICATION FOR ENERGY EFFICIENCY: A DATA-DRIVEN PARALLEL COMPLIANCE DESIGN METHOD	2412
<i>Mahdi Khoramshahi, Atoosa Parsa, Auke Ijspeert, Majid Nili Ahmadabadi</i>	
A PURE SIGNAL-BASED STIFFNESS ESTIMATION FOR VSA DEVICES	2418
<i>Fabrizio Flacco, Alessandro De Luca</i>	
RENDERING VISCOELASTICITY WITH SERIES ELASTIC ACTUATORS USING CASCADE CONTROL	2424
<i>Nevio Luigi Tagliamonte, Dino Accoto, Eugenio Guglielmelli</i>	
DEVELOPMENT OF A SMART SURGICAL ROBOT WITH BENDED FORCEPS FOR INFANT CONGENITAL ESOPHAGEAL ATRESIA SURGERY	2430
<i>Quanquan Liu, Yo Kobayashi, Bo Zhang, Takehiko Noguchi, Yu Takahashi, Yuya Nishio, Yang Cao, Masakatsu G. Fujie, Satoshi Ieiri, Kazutaka Toyoda, Munenori Uemura, Morimasa Tomikawa, Makoto Hashizume</i>	
CYCLOPS: A VERSATILE ROBOTIC TOOL FOR BIMANUAL SINGLE-ACCESS AND NATURAL-ORIFICE ENDOSCOPIC SURGERY	2436
<i>George Mylonas, Valentina Vitiello, Thomas Cundy, Ara Darzi, Guang-Zhong Yang</i>	
NULL SPACE REDUNDANCY LEARNING FOR A FLEXIBLE SURGICAL ROBOT	2443
<i>Danilo Bruno, Sylvain Calinon, Darwin G. Caldwell</i>	
DESIGN OF A UNIFIED ACTIVE LOCOMOTION MECHANISM FOR A WIRELESS LAPAROSCOPIC CAMERA SYSTEM	2449
<i>Xiaolong Liu, Gregory Mancini, Jindong Tan</i>	
A NOVEL DOUBLE-HULL BOAT WITH BIOMIMETIC WIRE-DRIVEN FLAPPING PROPULSORS	2457
<i>Zheng Li, Ruxu Du</i>	
ENERGY-EFFICIENT PROPULSION INSPIRED BY WHIRLIGIG BEETLES	2463
<i>Xinghua Jia, Zongyao Chen, Andrew Riedel, William R. Hamel, Mingjun Zhang</i>	
A THREE-FINGERED CABLE-DRIVEN GRIPPER FOR UNDERWATER APPLICATIONS	2469
<i>J. R. Bemfica, Claudio Melchiorri, Lorenzo Moriello, Gianluca Palli, Umberto Scarcia</i>	
COLLABORATIVE BATHYMETRY-BASED LOCALIZATION OF A TEAM OF AUTONOMOUS UNDERWATER VEHICLES	2475
<i>Yew Teck Tan, Mandar Chitre, Franz Hover</i>	
RGMP-ROS: A REAL-TIME ROS ARCHITECTURE OF HYBRID RTOS AND GPOS ON MULTI-CORE PROCESSOR	2482
<i>Hongxing Wei</i>	

ONLINE CONTACT POINT ESTIMATION FOR UNCALIBRATED TOOL USE	2488
<i>Yiannis Karayiannidis, Claes Christian Smith, Francisco Vina, Danica Kragic</i>	
FINITE-GAIN L2 STABILITY OF ANTI-WINDUP ADAPTIVE TRACKING CONTROL FOR EULER-LAGRANGE SYSTEMS WITH ACTUATOR SATURATION	2495
<i>Mitsuru Kanamori</i>	
GENERAL PROBABILISTIC BOUNDS FOR TRAJECTORIES USING ONLY MEAN AND VARIANCE	2501
<i>Cheng Fang, Brian Williams</i>	
MOTION PLANNING UNDER UNCERTAINTY FOR ON-ROAD AUTONOMOUS DRIVING	2507
<i>Wenda Xu, Jia Pan, Junqing Wei, John M. Dolan</i>	
MOTION PLANNING AND COLLISION AVOIDANCE USING NAVIGATION VECTOR FIELDS	2513
<i>Dimitra Panagou</i>	
CLOUD RRT*: SAMPLING CLOUD BASED RRT*	2519
<i>Donghyuk Kim, Junghwan Lee, Sung-Eui Yoon</i>	
EXPLORATION OF AN UNKNOWN ENVIRONMENT WITH A DIFFERENTIAL DRIVE DISC ROBOT	2527
<i>Guillermo Laguna, Rafael Murrieta-Cid, Hector Becerra, Rigoberto Lopez-Padilla, Steven M Lavalle</i>	
DYNAMICALLY EVALUATED GRAVITY COMPENSATION FOR THE RAVEN SURGICAL ROBOT	2534
<i>Andrew Lewis, Blake Hannaford</i>	
PRIORITIZED OPTIMAL CONTROL	2540
<i>Andrea Del Prete, Francesco Romano, Lorenzo Natale, Giorgio Metta, Giulio Sandini, Francesco Nori</i>	
HIGH PERFORMANCE CONTROL OF HIGH-ACCELERATION MOTIONS BASED ON TIME-DOMAIN RELAY FEEDBACK TECHNIQUE	2546
<i>Chao Liu, Jia Liu, Jianhua Wu, Zhenhua Xiong</i>	
MODELING AND PRIMARY EXPERIMENT OF A 3-AXIS PID CONTROL WITH 50 NM RESOLUTION FOR A HOLONOMIC PRECISION INCHWORM ROBOT	2552
<i>Manabu Yatsurugi, Akio Oi, Ohmi Fuchiwaki, Takehiro Higuchi</i>	

VOLUME 4

FLYING BETWEEN OBSTACLES WITH AN AUTONOMOUS KNIFE-EDGE MANEUVER	2559
<i>Andrew J. Barry, Timothy Jenks, Anirudha Majumdar, Huai-Ti Lin, Ivo Ros, Andrew Biewener, Russ Tedrake</i>	
REGRASPING OBJECTS USING EXTRINSIC DEXTERITY	2560
<i>Nikhil Chavan Dagle, Alberto Rodriguez, Robert Paolini, Bowei Tang, Siddhartha Srinivasa, Michael Erdmann, Matthew T. Mason, Ivan Lundberg, Harald Staab, Thomas Fuhlbrigge</i>	
FLYING SAUCER LIFTED WITH COANDA EFFECT	2561
<i>Seonhye Han, Hyunyoung Lee, Hyeju Lee, Jaehyeok Jeon, Choonghan Lee, Yong Bum Kim, Hyouk Ryeol Choi</i>	
AGILE JUSTIN: AN UPGRADED MEMBER OF DLR'S FAMILY OF LIGHTWEIGHT AND TORQUE CONTROLLED HUMANOIDS	2562
<i>Berthold Bauml, Tobias Hammer, Rene Wagner, Oliver Birbach, Ulrich Hillenbrand, Werner Friedl, Jorg Butterfass, Fangyi Zhi, Thomas Gumpert, Stefan Beer</i>	
A BIO-INSPIRED SWIMMING ROBOT	2564
<i>Zongyao Chen, Xinghua Jia, Andrew Riedel, Mingjun Zhang</i>	
FABRICATION OF ORIGAMI WHEEL USING PATTERN EMBEDDED FABRIC AND ITS APPLICATION TO A DEFORMABLE MOBILE ROBOT	2565
<i>Dae-Young Lee, Ji-Suk Kim, Jae-Jun Park, Sa-Reum Kim, Kyu-Jin Cho</i>	
A QUADRUPEL ROBOT WITH PARALLEL MECHANISM LEGS	2566
<i>Feng Gao, Chenkun Qi, Qiao Sun, Xianbao Chen, Xinghua Tian</i>	
TORUS OMNIDIRECTIONAL DRIVING UNIT MECHANISM REALIZED BY CURVED CRAWLER BELTS	2567
<i>Kenjiro Tadakuma, Hirohiko Ogata, Riichiro Tadakuma, Jose Berengueres</i>	
ROBOTS USING ENVIRONMENT OBJECTS AS TOOLS: THE 'MACGYVER' PARADIGM FOR MOBILE MANIPULATION	2568
<i>Mike Stilman, Can Erdogan, Saul Reynolds-Haertle, Munzir Zafar, Peng Hou, Gregory Tracy</i>	
1STAR, A ONE ACTUATOR STEERABLE ROBOT (1STAR)	2569
<i>David Zarrrouk, Ronald Fearing</i>	
FINITE TIME TRACKING OF A FULLY ACTUATED BIPED ROBOT WITH PRE-SPECIFIED SETTLING TIME: A SECOND ORDER SLIDING MODE SYNTHESIS	2570
<i>Harshal Oza, Yury Orlov, Sarah Spurgeon, Yannick Aoustin, Christine Chevallereau</i>	
ENERGETIC EFFECTS OF REACTION WHEEL ACTUATION ON UNDERACTUATED BIPED ROBOT WALKING	2576
<i>Travis Brown, James Schmiedeler</i>	
PLANAR MULTI-CONTACT BIPEDAL WALKING USING HYBRID ZERO DYNAMICS	2582
<i>Jordan Lack, Matthew Powell, Aaron Ames</i>	
AN EFFICIENTLY SOLVABLE QUADRATIC PROGRAM FOR STABILIZING DYNAMIC LOCOMOTION	2589
<i>Scott Kuindersma, Frank Permenter, Russ Tedrake</i>	
ON-BOARD REAL-TIME POSE ESTIMATION FOR UAVS USING DEFORMABLE VISUAL CONTOUR REGISTRATION	2595
<i>Adrian Amor-Martinez, Alberto Ruiz, Francesc Moreno-Noguer, Alberto Sanfeliu</i>	
ON-BOARD INERTIAL-ASSISTED VISUAL ODOMETER ON AN EMBEDDED SYSTEM	2602
<i>Guyue Zhou, Jiaxin Ye, Wei Ren, Tao Wang, Li Zexiang</i>	

REMODE: PROBABILISTIC, MONOCULAR DENSE RECONSTRUCTION IN REAL TIME	2609
<i>Matia Pizzoli, Christian Forster, Davide Scaramuzza</i>	
REALTIME TRACKING AND GRASPING OF A MOVING OBJECT FROM RANGE VIDEO	2617
<i>Farzad Husain, Adria Colome, Babette Dellen, Guillem Alenya, Carme Torras</i>	
LEARNING SPATIAL-SEMANTIC REPRESENTATIONS FROM NATURAL LANGUAGE DESCRIPTIONS AND SCENE CLASSIFICATION	2623
<i>Sachithra Madhawa Hemachandra, Matthew Walter, Stefanie Tellex, Seth Teller</i>	
DENSE 3D SEMANTIC MAPPING OF INDOOR SCENES FROM RGB-D IMAGES	2631
<i>Alexander Hermans, Georgios Floros, Bastian Leibe</i>	
SEMANTIC SEGMENTATION WITH HETEROGENEOUS SENSOR COVERAGES	2639
<i>Cesar Dario Cadena Lerma, Jana Kosecka</i>	
USING RULE-BASED CONTEXT KNOWLEDGE TO MODEL TABLE-TOP SCENES	2646
<i>Ziyuan Liu, Dong Chen, Kai M. Wurm, Georg V. Wichert</i>	
ACCURATE TARGET TRACKING CONTROL FOR A MOBILE ROBOT: A ROBUST ADAPTIVE APPROACH FOR OFF-ROAD MOTION	2652
<i>Roland Lenain, Benoit Thuilot, Audrey Guillet, Bernard Benet</i>	
FULLY AUTONOMOUS FOCUSED EXPLORATION FOR ROBOTIC ENVIRONMENTAL MONITORING	2658
<i>Gregory Hitz, Alkis Gotovos, Francois Pomerleau, Marie-Eve Garneau, Cedric Pradalier, Andreas Krause, Roland Siegwart</i>	
ENERGY HARVESTING ANALYSIS FOR MOBALL, A SELF-PROPELLED MOBILE SENSOR PLATFORM CAPABLE OF LONG DURATION OPERATION IN HARSH TERRAIN	2665
<i>Matthew Burkhardt, Faranak Davoodi, Joel Burdick, Farhooman Davoudi</i>	
DEVELOPMENT OF NOVEL MULTIFUNCTIONAL ROBOTIC CRAWLER FOR INSPECTION OF HANGER CABLES IN SUSPENSION BRIDGES	2673
<i>Kyeong Ho Cho, Young Hoon Jin, Ho Moon Kim, Hyouk Ryeol Choi</i>	
DECIDING ON OPTIMAL ASSISTANCE POLICIES IN HAPTIC SHARED CONTROL TASKS	2679
<i>Javier Corredor, Jorge Sofrony, Angelika Peer</i>	
DYNAMIC FRICTIONAL CONSTRAINTS IN TRANSLATION AND ROTATION	2685
<i>Stuart A. Bowyer, Ferdinando Rodriguez Y Baena</i>	
COOPERATIVE HUMAN-ROBOT HAPTIC NAVIGATION	2693
<i>Stefano Scheggi, Marco Aggravi, Fabio Morbidi, Domenico Prattichizzo</i>	
HAIR: HAPTIC FEEDBACK WITH A MOBILE AIR JET	2699
<i>Mohamed Yacine Tsalamlal, Nizar Ouarti, Mehdi Ammi</i>	
AUTONOMOUS ROBOT-MEDIATED IMITATION LEARNING FOR CHILDREN WITH AUTISM	2707
<i>Zhi Zheng, Shuvajit Das, Eric Young, Amy Swanson, Zachary Warren, Nilanjan Sarkar</i>	
USING A SHARED TABLET WORKSPACE FOR INTERACTIVE DEMONSTRATIONS DURING HUMAN-ROBOT LEARNING SCENARIOS	2713
<i>Hae Won Park, Richard Coogle, Ayanna Howard</i>	
INTERPRETING INSTRUCTION SEQUENCES IN SPATIAL LANGUAGE DISCOURSE WITH PRAGMATICS TOWARDS NATURAL HUMAN-ROBOT INTERACTION	2720
<i>Juan Fasola, Maja Mataric</i>	
THIMBLESENSE: AN INDIVIDUAL-DIGIT WEARABLE TACTILE SENSOR FOR EXPERIMENTAL GRASP STUDIES	2728
<i>Edoardo Battaglia, Giorgio Grioli, Manuel Giuseppe Catalano, Marco Santello, Antonio Bicchi</i>	
CONTROL OF A CONTACT SENSING FINGER FOR SURFACE HAPTIC EXPLORATION	2736
<i>Jungwhan Back, Joao Bimbo, Yohan Noh, Kaspar Althoefer, Lakmal Seneviratne, Hongbin Liu</i>	
EXPERIMENTAL COMPARISON OF SLIP DETECTION STRATEGIES BY TACTILE SENSING WITH THE BIOTAC ON THE DLR HAND ARM SYSTEM	2742
<i>Jens Reinecke, Alexander Dietrich, Florian Schmidt, Maxime Chalon</i>	
DESIGN, OPTIMIZATION, CALIBRATION, AND A CASE STUDY OF A 3D-PRINTED, LOW-COST FINGERTIP SENSOR FOR ROBOTIC MANIPULATION	2749
<i>Zhe Xu, Svetoslav Kolev, Emanuel Todorov</i>	
HEADING ALIGNMENT WITH SUMMARIZED INERTIAL POSE CONSTRAINTS	2757
<i>Dehann Fourie, George Van Schoor, Kenny Uren</i>	
MULTIPLE MAP HYPOTHESES FOR PLANNING AND NAVIGATING IN NON-STATIONARY ENVIRONMENTS	2765
<i>Timothy Morris, Feras Dayoub, Peter Corke, Gordon Wyeth, Ben Upercroft</i>	
ESTIMATING MANIPULABILITY OF UNKNOWN OBSTACLES FOR NAVIGATION IN INDOOR ENVIRONMENTS	2771
<i>Christopher Clingerman, Daniel D. Lee</i>	
VISUAL SENSING FOR DEVELOPING AUTONOMOUS BEHAVIOR IN SNAKE ROBOTS	2779
<i>Hugo Ponte, Max Queenan, Chaohui Gong, Christoph Mertz, Matthew Travers, Howie Choset, Florian Enner, Martial Hebert</i>	
ROBUST REAL-TIME 6D ACTIVE-VISUAL LOCALIZATION FOR HUMANOID ROBOTS	2785
<i>David Gonzalez, Michael Vollert, Tamim Asfour, Rüdiger Dillmann</i>	
ROBUST LADDER-CLIMBING WITH A HUMANOID ROBOT WITH APPLICATION TO THE DARPA ROBOTICS CHALLENGE	2792
<i>Jingru Luo, Yajia Zhang, Kris Hauser, H. Andy Park, Manas Paldhe, C. S. George Lee, Michael Grey, Mike Stilman, Jun Ho Oh, Jungho Lee, Inhyeok Kim, Paul Y. Oh</i>	
TRIPOD FALL: CONCEPT AND EXPERIMENTS OF A NOVEL APPROACH TO HUMANOID ROBOT FALL DAMAGE REDUCTION	2799
<i>Seung-Kook Yun, Ambarish Goswami</i>	

REAL-TIME IMITATION OF HUMAN WHOLE-BODY MOTIONS BY HUMANOIDS	2806
<i>Jonas Koenemann, Felix Burget, Maren Bennewitz</i>	
3D ASSEMBLY OF CELLULAR STRUCTURES WITH COORDINATED MANIPULATION BY RAIL-GUIDED MULTI-MICROBOTIC SYSTEM	2813
<i>Huaping Wang, Tao Yue, Masahiro Nakajima, Masaru Takeuchi, Pei Di, Tao Sun, Qiang Huang, Toshio Fukuda</i>	
CHARACTERIZATION AND COMPENSATION OF XY MICROPOSITIONING ROBOTS USING VISION AND PSEUDO-PERIODIC ENCODED PATTERNS	2819
<i>Ning Tan, Cedric Clevy, Guillaume J. Laurent, Patrick Sandoz, Nicolas Chaillet</i>	
CROWDSOURCING SWARM MANIPULATION EXPERIMENTS: A MASSIVE ONLINE USER STUDY WITH LARGE SWARMS OF SIMPLE ROBOTS	2825
<i>Aaron Becker, Chris Ertel, James McLurkin</i>	
INTERACTION PRIMITIVES FOR HUMAN-ROBOT COOPERATION TASKS	2831
<i>Heni Ben Amor, Gerhard Neumann, Oliver Kroemer, Jan Peters</i>	
VARIABLE STIFFNESS TREADMILL (VST): A NOVEL TOOL FOR THE INVESTIGATION OF GAIT	2838
<i>Andrew Barkan, Jeffrey Skidmore, Panagiotis Artemiadis</i>	
A NOVEL 4-DOFS ORIGAMI ENABLED, SMA ACTUATED, ROBOTIC END-EFFECTOR FOR MINIMALLY INVASIVE SURGERY	2844
<i>Marco Salerno, Ketao Zhang, Arianna Menciassi, Jian Dai</i>	
A MULTI-ARM HAND-HELD ROBOTIC SYSTEM FOR TRANSURETHRAL LASER PROSTATE SURGERY	2850
<i>Richard Hendrick, Duke Herrell, Robert James Webster III</i>	
SHAPE PREDICTION ALGORITHM FOR FLEXIBLE ENDOSCOPE	2856
<i>Jun Jeon, Byung-Ju Yi</i>	
EVENT-BASED NEURAL COMPUTING ON AN AUTONOMOUS MOBILE PLATFORM	2862
<i>Francesco Galluppi, Christian Denk, Matthias Meiner, Terrence C Stewart, Luis Plana, Chris Eliasmith, Steve Furber, Jorg Conradt</i>	
BAYESIAN MULTIMODAL INTEGRATION IN A ROBOT REPLICATING HUMAN HEAD AND EYE MOVEMENTS	2868
<i>Marco Antonelli, Angel P. Del Pobil, Michele Rucci</i>	
DESIGN OF A 3D-PRINTED SOFT ROBOT WITH POSTURE AND STEERING CONTROL	2874
<i>Takuya Umedachi, Barry Trimmer</i>	
LEARNING EFFICIENT CONTROL OF ROBOTS USING MYOELECTRIC INTERFACES	2880
<i>Mark Ison, Chris Antuvan, Panagiotis Artemiadis</i>	
TIME DELAY SLIDING MODE CONTROL OF NONHOLONOMIC WHEELED MOBILE ROBOT: EXPERIMENTAL VALIDATION	2886
<i>Spandan Roy, Sambhunath Nandy, Ranjit Ray, Sankar Nath Shome</i>	
EXPERIMENTAL EVALUATION OF ADAPTIVE MODEL-BASED CONTROL FOR UNDERWATER VEHICLES IN THE PRESENCE OF UNMODELED ACTUATOR DYNAMICS	2893
<i>Christopher McFarland, Louis Whitcomb</i>	
EXPANDING WORKSPACE OF UNDERACTUATED FLEXIBLE MANIPULATOR BY ACTIVELY DEPLOYING CONSTRAINS	2901
<i>Zheng Li, Ruxu Du</i>	
SWITCHING CONTROL OF ATTITUDE TRACKING ON A QUADROTOR UAV FOR LARGE-ANGLE ROTATIONAL MANEUVERS	2907
<i>Lu Wang, Jianbo Su</i>	
A PASSIVE, ORIGAMI-INSPIRED, CONTINUOUSLY VARIABLE TRANSMISSION	2913
<i>Samuel Felton, Dae-Young Lee, Kyu-Jin Cho, Robert Wood</i>	
A CONTINUOUS DYNAMIC MODEL FOR AN OMNIDIRECTIONAL MOBILE ROBOT	2919
<i>Chao Ren, Shugen Ma</i>	
TIME OPTIMAL PATH FOLLOWING WITH BOUNDED VELOCITIES AND ACCELERATIONS FOR MOBILE ROBOTS WITH INDEPENDENTLY STEERABLE WHEELS	2925
<i>Reza Ofiadeh, Reza Ghabcheloo, Joumi Mattila</i>	
EFFECT OF LUG SINKAGE LENGTH TO DRAWBAR PULL OF A WHEEL WITH AN ACTIVELY ACTUATED LUG ON SANDY TERRAIN	2932
<i>Yang Yang, Yi Sun, Shugen Ma</i>	
MECHATRONIC DESIGN OF A MINIATURE UNDERWATER ROBOT FOR SWARM OPERATIONS	2938
<i>Stefano Mintchev, Elisa Donati, Stefano Marrazza, Cesare Stefanini</i>	
GLIDING, SWIMMING AND WALKING: DEVELOPMENT OF MULTI-FUNCTIONAL UNDERWATER ROBOT GLIDE WALKER	2944
<i>Hiroataka Komura, Satoshi Kitano, Hiroya Yamada, Gen Endo</i>	
DESIGN FOR PRECISION MULTI-DIRECTIONAL MANEUVERABILITY: EGG-SHAPED UNDERWATER ROBOTS FOR INFRASTRUCTURE INSPECTION	2950
<i>Anirban Mazumdar, Meng Yee (Michael) Chuah, Michael Triantafyllou, Harry Asada</i>	
FILTER DESIGN FOR LOCALIZATION AIDED BY DIRECTION AND DOPPLER MEASUREMENTS	2957
<i>Joel Oliveira Reis, Paulo Oliveira, Pedro Batista, Carlos Silvestre</i>	
KINEMATICS AND METHODS FOR COMBINED QUASI-STATIC STANCE/REACH PLANNING IN MULTI-LIMBED ROBOTS	2963
<i>Krishna Shankar, Joel Burdick</i>	
DESIGN AND FABRICATION OF A FOLDABLE HEXAPOD ROBOT TOWARDS EXPERIMENTAL SWARM APPLICATIONS	2971
<i>Mahdi Agheli, Siamak Ghorbani Faal, Fuchen Chen, Huibin Gong, Cagdas Denizel Onal</i>	

EXCITATION AND STABILIZATION OF PASSIVE DYNAMICS IN LOCOMOTION USING HIERARCHICAL OPERATIONAL SPACE CONTROL	2977
<i>Marco Hutter, Christian Gehring, Michael Bloesch, Mark Hoepflinger, Peter Fankhauser, Roland Siegwart</i>	
THE DESIGN OF EXACTLY CONSTRAINED WALKING ROBOTS	2983
<i>Oren Kanner, Lael Odhner, Aaron Dollar</i>	
FAST DYNAMIC OPTIMIZATION OF ROBOT PATHS UNDER ACTUATOR LIMITS AND FRICTIONAL CONTACT	2990
<i>Kris Hauser</i>	
ORIENTATION IN CARTESIAN SPACE DYNAMIC MOVEMENT PRIMITIVES	2997
<i>Alés Ude, Bojan Nemec, Tadej Petric, Jun Morimoto</i>	
A SAMPLING-BASED STRATEGY PLANNER FOR NONDETERMINISTIC HYBRID SYSTEMS	3005
<i>Morteza Lahijanian, Lydia Kavradi, Vardi Moshe</i>	
FAST STOCHASTIC MOTION PLANNING WITH OPTIMALITY GUARANTEES USING LOCAL POLICY RECONFIGURATION	3013
<i>Ryan Luma, Morteza Lahijanian, Mark Moll, Lydia Kavradi</i>	
ROBUST CALIBRATION OF AN ULTRALOW-COST INERTIAL MEASUREMENT UNIT AND A CAMERA: HANDLING OF SEVERE SYSTEM UNCERTAINTY	3020
<i>Chang-Ryeol Lee, Ju Hong Yoon, Kuk-Jin Yoon</i>	
EXTRINSIC CALIBRATION OF 2D LASER SENSORS	3027
<i>Dong - Geol Choi, Yunsu Bok, Jun-Sik Kim, In So Kweon</i>	
CALIBRATION METHOD FOR MULTIPLE 2D LIDARS SYSTEM	3034
<i>Mengwen He, Huijing Zhao, Jinshi Cui, Hongbin Zha</i>	
A ROBUST AND EASY TO IMPLEMENT METHOD FOR IMU CALIBRATION WITHOUT EXTERNAL EQUIPMENTS	3042
<i>David Tedaldi, Alberto Pretto, Emanuele Menegatti</i>	
UNSUPERVISED FEATURE LEARNING FOR 3D SCENE LABELING	3050
<i>Kevin Lai, Liefeng Bo, Dieter Fox</i>	
DEEP LEARNING OF SPATIO-TEMPORAL FEATURES WITH GEOMETRIC-BASED MOVING POINT DETECTION FOR MOTION SEGMENTATION	3058
<i>Tsung-Han Lin, Chieh-Chih Wang</i>	
HARD NEGATIVE CLASSES FOR MULTIPLE OBJECT DETECTION	3066
<i>Asako Kanezaki, Sho Inaba, Yoshitaka Ushiku, Yuya Yamashita, Hiroshi Muraoka, Yasuo Kuniyoshi, Tatsuya Harada</i>	
UNSUPERVISED DISCOVERY OF OBJECT CLASSES WITH A MOBILE ROBOT	3074
<i>Julian Mason, Bhaskara Marthi, Ronald Parr</i>	
START FROM MINIMUM LABELING: LEARNING OF 3D OBJECT MODELS AND POINT LABELING FROM A LARGE AND COMPLEX ENVIRONMENT	3082
<i>Quanshi Zhang, Xuan Song, Xiaowei Shao, Huijing Zhao, Ryosuke Shibasaki</i>	
COUPLING VISUAL SERVOING WITH ACTIVE STRUCTURE FROM MOTION	3090
<i>Riccardo Spica, Paolo Robuffo Giordano, Francois Chaumette</i>	
TETHER-GUIDED LANDING OF UNMANNED HELICOPTERS WITHOUT GPS SENSORS	3096
<i>Luis A. Sandino, Daniel Santamaria, Manuel Bejar, Antidio Viguria, Konstantin Kondak, Anibal Ollero</i>	
MODELING THE DYNAMICS OF PERCHING WITH OPPOSED-GRIP MECHANISMS	3102
<i>Hao Jiang, Morgan Pope, Elliot Wright Hawkes, David Christensen, Matthew Estrada, Andrew Parlier, Richie Tran, Mark Cutkosky</i>	
AN OPTIMIZED PERCHING MECHANISM FOR AUTONOMOUS PERCHING WITH A QUADROTOR	3109
<i>Wanchao Chi, K. H. Low, Kay Hiang Hoon, Johnson Tang</i>	
ATTITUDE STABILIZATION WITHOUT ANGULAR VELOCITY MEASUREMENTS	3116
<i>Lofsi Benziane, Abdelaziz Benallegue, Abdelhamid Tayebi</i>	
INFORMATION MERGING IN MULTI-UAV COOPERATIVE SEARCH	3122
<i>Asif Khan, Evsen Yanmaz, Bernhard Rimmer</i>	
VISION-BASED CONTROL OF A QUADROTOR FOR PERCHING ON LINES	3130
<i>Kartik Mohta, Vijay Kumar, Kostas Daniilidis</i>	
ESTIMATING FINGER GRIP FORCE FROM AN IMAGE OF THE HAND USING CONVOLUTIONAL NEURAL NETWORKS AND GAUSSIAN PROCESSES	3137
<i>Nutan Chen, Sebastian Urban, Christian Osendorfer, Justin Bayer, Patrick Van Der Smagt</i>	
ROBOT ARM POSE ESTIMATION THROUGH PIXEL-WISE PART CLASSIFICATION	3143
<i>Jeannette Bohg, Javier Romero, Alexander Herzog, Stefan Schaal</i>	
ROBOTIC OBJECT MANIPULATION WITH MULTILEVEL PART-BASED MODEL IN RGB-D DATA	3151
<i>Kun Li, Max Q.-H. Meng</i>	
HAND-EYE AND ROBOT-WORLD CALIBRATION BY GLOBAL POLYNOMIAL OPTIMIZATION	3157
<i>Jan Heller, Didier Henrion, Tomas Pajdla</i>	
LEARNING TO IDENTIFY NEW OBJECTS	3165
<i>Yuyin Sun, Liefeng Bo, Dieter Fox</i>	
HUMAN GAIT MODELING AND GAIT ANALYSIS BASED ON KINECT	3173
<i>Baiqing Sun, Xiaogang Liu</i>	
OCCLUSION ALLEVIATION THROUGH MOTION USING A MOBILE ROBOT	3179
<i>Duc Fehr, William Beksi, Dimitris Zermas, Nikos Papanikolopoulos</i>	
TOWARD MUTUAL INFORMATION BASED PLACE RECOGNITION	3185
<i>Gaurav Pandey, James McBride, Silvio Savarese, Ryan Eustice</i>	

TOWARD ONLINE 3-D OBJECT SEGMENTATION AND MAPPING	3193
<i>Evan Herbst, Peter Henry, Dieter Fox</i>	
A CONCURRENT REAL-TIME BIOLOGICALLY-INSPIRED VISUAL OBJECT RECOGNITION SYSTEM	3201
<i>Andreas Holzbach, Gordon Cheng</i>	
A GEOMETRIC APPROACH TO STROKE EXTRACTION FOR THE CHINESE CALLIGRAPHY ROBOT	3207
<i>Yuandong Sun, Huihuan Qian, Yangsheng Xu</i>	
CONVEXITY BASED OBJECT PARTITIONING FOR ROBOT APPLICATIONS	3213
<i>Simon Christoph Stein, Florentin Worgotter, Markus Schoeler, Jeremie Papon, Tomas Kulvicius</i>	
REAL-TIME NAVIGATION IN CROWDED DYNAMIC ENVIRONMENTS USING GAUSSIAN PROCESS MOTION CONTROL	3221
<i>Sungjoon Choi, Eunwoo Kim, Songhwa Oh</i>	
COLLISION FREE PATH PLANNING BASED ON REGION CLIPPING FOR AIRCRAFT FUEL TANK INSPECTION ROBOT	3227
<i>Guochen Niu, Zunchao Zheng, Qingji Gao</i>	
RECIPROCALLY-ROTATING VELOCITY OBSTACLES	3234
<i>Andrew Giese, Daniel Latypov, Nancy Amato</i>	
STEREO VISION-BASED OBSTACLE AVOIDANCE FOR MICRO AIR VEHICLES USING DISPARITY SPACE	3242
<i>Larry Matthies, Roland Brockers, Yoshiaki Kuwata, Stephan Weiss</i>	
COLLISION AVOIDANCE WITH POTENTIAL FIELDS BASED ON PARALLEL PROCESSING OF 3D-POINT CLOUD DATA ON THE GPU	3250
<i>Knut Berg Kaldestad, Sami Haddadin, Rico Belder, Geir Hovland, David A. Anisi</i>	
AN EXPERIMENTAL KINESTATIC COMPARISON BETWEEN CONTINUUM MANIPULATORS WITH STRUCTURAL VARIATIONS	3258
<i>Kai Xu, Minxiao Fu, Jiangran Zhao</i>	
PERFORMANCE ANALYSIS OF STOCHASTIC BEHAVIOR TREES	3265
<i>Michele Colledanchise, Alejandro Marzinotto, Petter Ogren</i>	
CONTROL-THEORETIC AND MODEL-BASED SCHEDULING OF CRUDE OIL TRANSPORTATION FOR REFINERY INDUSTRY	3273
<i>Naiqi Wu, Mengchu Zhou, Liping Bai</i>	
OPTIMAL ONE-WAFER CYCLIC SCHEDULING ANALYSIS OF HYBRID MULTI-CLUSTER TOOLS WITH ONE-SPACE BUFFERING MODULE	3279
<i>Fajun Yang, Naiqi Wu, Yan Qiao, Mengchu Zhou</i>	
MAXIMUM INFORMATION RELEASE WHILE ENSURING OPACITY IN DISCRETE EVENT SYSTEMS	3285
<i>Bo Zhang, Shaolong Shu, Feng Lin</i>	
SAMPLE PATH SHARING IN SIMULATION-BASED POLICY IMPROVEMENT	3291
<i>Di Wu, Qing-Shan Jia, Chun-Hung Chen</i>	
WORST CASE BRAKING TRAJECTORIES FOR ROBOTIC MOTION SIMULATORS	3297
<i>Andreas Labusch, Tobias Bellmann, Karan Sharma, Johann Bals</i>	
LEARNING TO GIVE ROUTE DIRECTIONS FROM HUMAN DEMONSTRATIONS	3303
<i>Stefan Osswald, Henrik Kretzschmar, Wolfram Burgard, Cyrill Stachniss</i>	
LEARNING FROM DEMONSTRATIONS WITH PARTIALLY OBSERVABLE TASK PARAMETERS	3309
<i>Tohid Alizadeh, Sylvain Calinon, Darwin G. Caldwell</i>	
ADAPTIVE PARAMETER EXPLORATION (APEX): ADAPTATION OF ROBOT AUTONOMY FROM HUMAN PARTICIPATION	3315
<i>Anqi Xu, Arnold Kalmbach, Gregory Dudek</i>	
BAYESIAN EXPLORATION AND INTERACTIVE DEMONSTRATION IN CONTINUOUS STATE MAXQ-LEARNING	3323
<i>Kathrin Grave, Sven Behnke</i>	
ONLINE FEATURE EXTRACTION FOR THE INCREMENTAL LEARNING OF GESTURES IN HUMAN-SWARM INTERACTION	3331
<i>Jawad Nagi, Alessandro Giusti, Farrukh Nagi, Luca Gambardella, Gianni A. Di Caro</i>	
A TASK-PARAMETERIZED PROBABILISTIC MODEL WITH MINIMAL INTERVENTION CONTROL	3339
<i>Sylvain Calinon, Danilo Bruno, Darwin G. Caldwell</i>	
CALCULATING RESTART STATES USING RESET TRANSITIONS	3345
<i>Patrik Bergagard, Martin Fabian</i>	
MODELING AND ANALYSIS OF AN IN-PIPE ROBOTIC LEAK DETECTOR	3351
<i>Dimitris Chatzigeorgiou, Kamal Youcef-Toumi, Rached Ben-Mansour</i>	
FOCUSED OPTIMIZATION FOR ONLINE DETECTION OF ANOMALOUS REGIONS	3358
<i>Juan Pablo Mendoza, Manuela Veloso, Reid Simmons</i>	
VELOCITY-BASED VARIABLE THRESHOLDS FOR IMPROVING COLLISION DETECTION IN MANIPULATORS	3364
<i>Vahid Sotoudehnejad, Mehrdad R. Kermani</i>	
EARLY FAILURE CHARACTERIZATION OF CANTILEVER SNAP ASSEMBLIES USING THE PA-RCBHT	3370
<i>Juan Luis Rojas, Kensuke Harada, Hiromu Onda, Natsuki Yamanobe, Eiichi Yoshida, Kazuyuki Nagata</i>	
STUDY ON MEANINGFUL AND VERIFIED THRESHOLDS FOR MINIMIZING THE CONSEQUENCES OF HUMAN-ROBOT COLLISIONS	3378
<i>Roland Behrens, Norbert Elkmann</i>	

A MECHANICALLY ADJUSTABLE STIFFNESS ACTUATOR(MASA) OF A ROBOT FOR KNEE REHABILITATION	3384
<i>Jaewook Oh, Soojun Lee, Myo-Taeg Lim, Junho Choi</i>	
COMBINING MULTI-MATERIAL RAPID PROTOTYPING AND PSEUDO-RIGID BODY MODELING FOR A NEW COMPLIANT MECHANISM	3390
<i>Arnaud Bruyas, Francois Geiskopf, Laurence Meylheuc, Pierre Renaud</i>	
A COMPLIANT MULTI-MODULE ROBOT FOR CLIMBING BIG STEP-LIKE OBSTACLES	3397
<i>Avinash Srivavuru, Ankur Srivastava, Akshaya Purohit, Suril Vijaykumar Shah, Madhava Krishna</i>	
A NEW BIARTICULAR JOINT MECHANISM TO EXTEND STIFFNESS RANGES	3403
<i>Hannes Hoepfner, Wolfgang Wiedmeyer, Patrick Van Der Smagt</i>	

VOLUME 5

COMPACT NONLINEAR SPRINGS WITH USER DEFINED TORQUE-DEFLECTION PROFILES FOR SERIES ELASTIC ACTUATORS	3411
<i>Alexander Schepelmann, Kathryn Geberth, Hartmut Geyer</i>	
DETECTING POTENTIAL FALLING OBJECTS BY INFERRING HUMAN ACTION AND NATURAL DISTURBANCE	3417
<i>Bo Zheng, Yibiao Zhao, Joey Chengcheng Yu, Katsushi Ikeuchi, Song-Chun Zhu</i>	
MANIPULATION STRATEGY DECISION AND EXECUTION BASED ON STRATEGY PROVING OPERATION FOR CARRYING LARGE AND HEAVY OBJECTS	3425
<i>Masaki Murooka, Shintaro Noda, Shunichi Nozawa, Yohei Kakiuchi, Kei Okada, Masayuki Inaba</i>	
DEVELOPMENT AND VERIFICATION OF LIFE-SIZE HUMANOID WITH HIGH-OUTPUT ACTUATION SYSTEM	3433
<i>Yoshito Ito, Shunichi Nozawa, Junichi Urata, Takuya Nakaoka, Kazuya Kobayashi, Yuto Nakanishi, Kei Okada, Masayuki Inaba</i>	
WORKSPACE ANALYSIS FOR A KINEMATICALLY COUPLED TORSO OF A TORQUE CONTROLLED HUMANOID ROBOT	3439
<i>Alexander Dietrich, Melanie Kimmel, Thomas Wimboeck, Sandra Hirche, Alin Albu-Schaffer</i>	
SYMMETRY COOPERATIVE OBJECT TRANSPORTATION BY MULTIPLE HUMANOID ROBOTS	3446
<i>Meng-Hung Wu, Atsushi Konno, Shuhei Ogawa, Shunsuke Komizunai</i>	
SKI-TYPE SELF-BALANCE HUMANOID WALKING FOR ROUGH TERRAIN	3452
<i>Hongfei Wang, Shimeng Li, Yuan F. Zheng, Taegoo Kim, Paul Y. Oh</i>	
ONLINE HUMAN WALKING IMITATION IN TASK AND JOINT SPACE BASED ON QUADRATIC PROGRAMMING	3458
<i>Kai Hu, Christian Ott, Dongheui Lee</i>	
ONLINE PARAMETER OPTIMIZATION IN ROBOTIC FORCE CONTROLLED ASSEMBLY PROCESSES	3465
<i>Hongtai Cheng, Heping Chen</i>	
CONSTRAINED MANIPULATION IN UNSTRUCTURED ENVIRONMENT UTILIZING HIERARCHICAL TASK SPECIFICATION FOR INDIRECT FORCE CONTROLLED ROBOTS	3471
<i>Ewald Lutscher, Gordon Cheng</i>	
DETECTION, LOCALIZATION AND PICKING UP OF COIL SPRINGS FROM A PILE	3477
<i>Keitaro Ono, Takuya Ogawa, Yusuke Maeda, Shigeki Nakatani, Go Nagayasu, Ryo Shimizu, Noritaka Ouchi</i>	
DESIGN AND EVOLUTION OF A MODULAR TENSEGRITY ROBOT PLATFORM	3483
<i>Jonathan Bruce, Ken Caluwaerts, Atil Iscen, Andrew P. Sabelhaus, Vytas Sunspirai</i>	
MECHANICAL DESIGN AND IMPLEMENTATION OF A SOFT INFLATABLE ROBOT ARM FOR SAFE HUMAN-ROBOT INTERACTION	3490
<i>Ronghuai Qi, Tin Lun Lam, Yangsheng Xu</i>	
PRELIMINARY STUDY OF AN INTELLIGENT SAMPLING DECISION SCHEME FOR THE AVM SYSTEM	3496
<i>Chun-Fang Chen, Fan-Tien Cheng, Chu-Chieh Wu, Hsuan-Heng Huang</i>	
EXPERIMENTAL EVALUATION OF CONTACT-LESS HAND TRACKING SYSTEMS FOR TELE-OPERATION OF SURGICAL TASKS	3502
<i>Yonjae Kim, Peter Kim, Rebecca Selle, Azad Shademan, Axel Krieger</i>	
OPTIMAL SPATIAL DESIGN OF NON-INVASIVE MAGNETIC FIELD-BASED LOCALIZATION SYSTEMS	3510
<i>Luc Marechal, Shaohui Foong, Shuoyu Ding, Dushyanth Madhavan, Kristin Wood, Rajiv Gupta, Vaibhav Patil, Conor James Walsh</i>	
A VISION-GUIDED ROBOT MANIPULATOR FOR SURGICAL INSTRUMENT SINGULATION IN A CLUTTERED ENVIRONMENT	3517
<i>Yi Xu, Xianqiao Tong, Ying Mao, Weston Griffin, Balajee Kannan, Lynn Deroose</i>	
DEVELOPMENT OF A LARGE AREA SCANNER FOR INTRAOPERATIVE BREAST ENDOMICROSCOPY	3524
<i>Siyang Zuo, Michael Hughes, Petros Giataganas, Carlo Alberto Seneci, Tou Pin Chang, Guang-Zhong Yang</i>	
FBG-BASED SHAPE SENSING TUBES FOR CONTINUUM ROBOTS	3531
<i>Seok Chang Ryu, Pierre Dupont</i>	
MODEL-BASED STATE RECOGNITION OF BONE DRILLING WITH ROBOTIC ORTHOPEDIC SURGERY SYSTEM	3538
<i>Haiyang Jin, Ying Hu, Deng Zhen, Peng Zhang, Zhangjun Song, Jianwei Zhang</i>	
INSECT-INSPIRED THORACIC MECHANISM WITH NON-LINEAR STIFFNESS FOR FLAPPING-WING MICRO AIR VEHICLES	3544
<i>Yao Wei Chin, Joel Tian Wei Goh, Gih Keong Lau</i>	

DYNAMIC EFFECTS OF ASYMMETRIC IN-PHASE FLAPPING (AIF) ON FORWARD FLIGHT	3550
<i>Joon-Hyuk Park, Sunil Agrawal</i>	
A HYBRID DYNAMIC MODEL FOR BIO-INSPIRED SOFT ROBOTS - APPLICATION TO A FLAPPING-WING MICRO AIR VEHICLE	3556
<i>Mathieu Porez, Frederic Boyer, Ayman Belkhir</i>	
IMPEDANCE CONTROL OF A BIO-INSPIRED FLYING AND ADHESION ROBOT	3564
<i>Yong Liu, Guoxin Sun, Heping Chen</i>	
SWARMS OF MICRO AERIAL VEHICLES STABILIZED UNDER A VISUAL RELATIVE LOCALIZATION	3570
<i>Martin Saska, Jan Vakula, Libor Preucil</i>	
PASSIVELY SAFE PARTIAL MOTION PLANNING FOR MOBILE ROBOTS WITH LIMITED FIELD-OF-VIEWS IN UNKNOWN DYNAMIC ENVIRONMENTS	3576
<i>Sara Bouraine, Thierry Fraichard, Ouahiba Azouaoui, Hassen Salhi</i>	
COORDINATED PATTERNS OF UNDERACTUATED SHIPS ALONG CLOSED ORBITS	3583
<i>Yangyang Chen, Yu-Ping Tian</i>	
REAL-TIME DISTRIBUTED OPTIMAL TRAJECTORY GENERATION FOR NONHOLONOMIC VEHICLES IN FORMATIONS	3589
<i>Reza Haghighi, Danwei Wang, Chang Boon Low</i>	
A LINEAR APPROACH TO FORMATION CONTROL UNDER DIRECTED AND SWITCHING TOPOLOGIES	3595
<i>Lili Wang, Zhimin Han, Zhiyun Lin, Minyue Fu</i>	
CONTROLLING TRIANGULAR FORMATIONS OF AUTONOMOUS AGENTS IN FINITE TIME USING COARSE MEASUREMENTS	3601
<i>Hui Liu, Hector De Marina, Ming Cao</i>	
MULTI-ROBOT FORMATION CONTROL USING DISTRIBUTED NULL SPACE BEHAVIORAL APPROACH	3607
<i>Shakeel Ahmad, Feng Zhi, Guoqiang Hu</i>	
OUTLIER REJECTION FOR VISUAL ODOMETRY USING PARITY SPACE METHODS	3613
<i>Arun Das, Steven Lake Waslander</i>	
HELMERT'S AND BOWIE'S GEODETIC MAPPING METHODS AND THEIR RELATION TO GRAPH-BASED SLAM	3619
<i>Pratik Agarwal, Wolfram Burgard, Cyrill Stachniss</i>	
EXPERIMENTAL ANALYSIS OF DYNAMIC COVARIANCE SCALING FOR ROBUST MAP OPTIMIZATION UNDER BAD INITIAL ESTIMATES	3626
<i>Pratik Agarwal, Giorgio Grisetti, Gian Diego Tipaldi, Luciano Spinello, Wolfram Burgard, Cyrill Stachniss</i>	
AN APPROACH TO SOLVING LARGE-SCALE SLAM PROBLEMS WITH A SMALL MEMORY FOOTPRINT	3632
<i>Benjamin Suger, Gian Diego Tipaldi, Luciano Spinello, Wolfram Burgard</i>	
C-KLAM: CONSTRAINED KEYFRAME-BASED LOCALIZATION AND MAPPING	3638
<i>Esha Nerurkar, Kejian Wu, Stergios Roumeliotis</i>	
MULTI CHANNEL GENERALIZED-ICP	3644
<i>James Servos, Steven Lake Waslander</i>	
A STATISTICAL MEASURE FOR MAP CONSISTENCY IN SLAM	3650
<i>Mladen Mazuran, Gian Diego Tipaldi, Luciano Spinello, Wolfram Burgard, Cyrill Stachniss</i>	
PICKING UP SOFT 3D OBJECTS WITH TWO FINGERS	3656
<i>Huan Lin, Feng Guo, Feifei Wang, Yan-Bin Jia</i>	
A CONTROLLER FOR STABLE GRASPING AND DESIRED FINGER SHAPING WITHOUT CONTACT SENSING	3662
<i>Maria Grammatikopoulou, Efi Psomopoulou, Leonidas Droukas, Zoe Doulgeri</i>	
VELVET FINGERS: GRASP PLANNING AND EXECUTION FOR AN UNDERACTUATED GRIPPER WITH ACTIVE SURFACES	3669
<i>Robert Krug, Todor Stoyanov, Manuel Bonilla, Vinicio Tincani, Narunas Vaskevicius, Gualtiero Fantoni, Andreas Birk, Achim J. Lilienthal, Antonio Bicchi</i>	
TASK-SPECIFIC GRASP SELECTION FOR UNDERACTUATED HANDS	3676
<i>Christoforos Mavrogiannis, Charalampos Bechlioulis, Minas Liarokapis, Kostas Kyriakopoulos</i>	
AN INTEGRATED APPROACH TOWARDS ROBUST GRASPING WITH TACTILE SENSING	3682
<i>George Boutselis, Charalampos Bechlioulis, Minas Liarokapis, Kostas Kyriakopoulos</i>	
CHARACTERIZATION OF GRASP QUALITY MEASURES FOR EVALUATING ROBOTIC HANDS PREHENSION	3688
<i>Beatriz Leon, Carlos Rubert, Joaquín Sancho-Bru, Antonio Morales</i>	
INTEGRATED EXPLORATION USING TIME-BASED POTENTIAL RAILS	3694
<i>Renan Maffei, Vitor Jorge, Edson Prestes, Mariana Kolberg</i>	
GENERATING HUMAN MOTION TRANSITION MAP IN INDOOR ENVIRONMENT AND ANALYZING HUMAN BEHAVIOR BY GEOGRAPHICAL CLUSTERING	3700
<i>Yuji Ogawa, Zhidong Wang, Tetsuya Wada, Yasuhisa Hirata, Kazuhiro Kosuge</i>	
SPECTRAL ANALYSIS FOR LONG-TERM ROBOTIC MAPPING	3706
<i>Tomas Krajník, Jaime Pulido Fentanes, Grzegorz Cielniak, Christian Dondrup, Tom Duckett</i>	
LONG-TERM 3D MAP MAINTENANCE IN DYNAMIC ENVIRONMENTS	3712
<i>Francois Pomerleau, Philipp Andreas Krusi, Francis Colas, Paul Timothy Furgale, Roland Siegwart</i>	
MULTI-ROBOT ODOR DISTRIBUTION MAPPING IN REALISTIC TIME-VARIANT CONDITIONS	3720
<i>Ali Marjovi, Lino Marques</i>	

LINE-BASED 3D MAPPING FROM EDGE-POINTS USING A STEREO CAMERA	3728
<i>Masahiro Tomono</i>	
HIERARCHICAL MULTI-OBJECTIVE PLANNING: FROM MISSION SPECIFICATIONS TO CONTINGENCY MANAGEMENT	3735
<i>Xuchu Ding, Brendan Englot, Alessandro Pinto, Alberto Speranzon, Amit Surana</i>	
CONFLICT-ORIENTED WINDOWED HIERARCHICAL COOPERATIVE A*	3743
<i>Zahy Bnaya, Ariel Felner</i>	
EXTRACTING COMMON SENSE KNOWLEDGE FROM TEXT FOR ROBOT PLANNING	3749
<i>Peter Kaiser, Mike Lewis, Ron Petrick, Tamim Asfour, Mark Steedman</i>	
A NEW APPROACH TO COMBINED SYMBOLIC-GEOMETRIC BACKTRACKING IN THE CONTEXT OF HUMAN-ROBOT INTERACTION	3757
<i>Lavindra De Silva, Mamoun Gharbi, Amit Kumar Pandey, Rachid Alami</i>	
LINEAR PLANNING LOGIC: AN EFFICIENT LANGUAGE AND THEOREM PROVER FOR ROBOTIC TASK PLANNING	3764
<i>Sitar Kortik, Uluc Saranlı</i>	
MAXIMIZING VISIBILITY IN COLLABORATIVE TRAJECTORY PLANNING	3771
<i>Florian Shkurti, Gregory Dudek</i>	
SELF-FOLDING MOBILE MICROROBOTS FOR BIOMEDICAL APPLICATIONS	3777
<i>Stefano Fusco, Mahmut Selman Sakar, Stephen Kennedy, Christian Peters, Salvador Pane, David Mooney, Bradley J. Nelson</i>	
SENSORS FOR MICRO BIO ROBOTS VIA SYNTHETIC BIOLOGY	3783
<i>Edward Steager, Denise Wong, Deepak Mishra, Ron Weiss, Vijay Kumar</i>	
DYNAMIC RELEASING OF BIOLOGICAL CELLS AT HIGH SPEED USING PARALLEL MECHANISM TO CONTROL ADHESION FORCES	3789
<i>Ebubekir Avci, Hiroyuki Yabugaki, Takayuki Hattori, Kazuto Kamiyama, Masaru Kojima, Yasushi Mae, Tatsuo Arai</i>	
UNTETHERED MICRO-ROBOT WITH GRIPPING MECHANISM FOR ON-CHIP CELL SURGERY UTILIZING OUTER MAGNETIC FORCE	3795
<i>Akihiko Ichikawa, Shinya Sakuma, Fumihito Arai, Satoshi Akagi</i>	
ACTIVE MICRORHEOLOGY OF THE VITREOUS OF THE EYE APPLIED TO NANOROBOT PROPULSION	3801
<i>Tian Qiu, Debora Schamel, Andrew Mark, Peer Fischer</i>	
MAGNETIC-BASED CLOSED-LOOP CONTROL OF PARAMAGNETIC MICROPARTICLES USING ULTRASOUND FEEDBACK	3807
<i>Islam S. M. Khalil, Pedro Ferreira, Ricardo Eleuterio, Chris De Korte, Sarthak Misra</i>	
VISION-BASED REACTIVE AUTONOMOUS NAVIGATION WITH OBSTACLE AVOIDANCE: TOWARDS A NON-INVASIVE AND CAUTIOUS EXPLORATION OF MARINE HABITAT	3813
<i>Francisco Geovani Rodriguez, Ricardo Raman Perez-Alcocer, Angel Alejandro Maldonado, Abril Torres, Bir Bikram Dey, Edgar Martinez Garcia</i>	
MULTIMODAL LEARNING FOR AUTONOMOUS UNDERWATER VEHICLES FROM VISUAL AND BATHYMETRIC DATA	3819
<i>Dushyant Rao, Mark De Deuge, Navid Nourani-Vatani, Bertrand Douillard, Stefan Bernard Williams, Oscar Pizarro</i>	
A SELF-TRIGGERED VISUAL SERVOING MODEL PREDICTIVE CONTROL SCHEME FOR UNDER-ACTUATED UNDERWATER ROBOTIC VEHICLES	3826
<i>Shahab Heshmati-Alamdari, Alina Eqtami, George Karras, Dimos V. Dimarogonas, Kostas Kyriakopoulos</i>	
TOWARD LONG-TERM, AUTOMATED SHIP HULL INSPECTION WITH VISUAL SLAM, EXPLICIT SURFACE OPTIMIZATION, AND GENERIC GRAPH-SPARSIFICATION	3832
<i>Paul Ozog, Ryan Eustice</i>	
SIMULTANEOUS UNDERWATER VISIBILITY ASSESSMENT, ENHANCEMENT AND IMPROVED STEREO	3840
<i>Martin Roser, Matthew David Dumbabin, Andreas Geiger</i>	
ACTIVE MONOCULAR LOCALIZATION: TOWARDS AUTONOMOUS MONOCULAR EXPLORATION FOR MULTIROTOR MAVS	3848
<i>Christian Mostegel, Andreas Wendel, Horst Bischof</i>	
AUTONOMOUS MAV GUIDANCE WITH A LIGHTWEIGHT OMNIDIRECTIONAL VISION SENSOR	3856
<i>Richard James Donald Moore, Karthik Dantu, Geoffrey Barrows, Radhika Nagpal</i>	
A SEMI-AUTONOMOUS UAV PLATFORM FOR INDOOR REMOTE OPERATION WITH VISUAL AND HAPTIC FEEDBACK	3862
<i>Paolo Stegagno, Massimo Basile, Heinrich H. Buelthoff, Antonio Franchi</i>	
FEATURE-RICH PATH PLANNING FOR ROBUST NAVIGATION OF MAVS WITH MONO-SLAM	3870
<i>Abbas Sadat, Kyle Cecil Chutskoff, Damir Jungic, Jens Wawerla, Richard Vaughan</i>	
MULTI-TASK POLICY SEARCH FOR ROBOTICS	3876
<i>Marc Peter Deisenroth, Peter Englert, Jan Peters, Dieter Fox</i>	
POLICY SEARCH FOR LEARNING ROBOT CONTROL USING SPARSE DATA	3882
<i>Bastian Bischoff, Duy Nguyen-Tuong, Herke Van Hoof, Andrew McHutchon, Carl Edward Rasmussen, Alois Knoll, Jan Peters, Marc Peter Deisenroth</i>	
REINFORCEMENT LEARNING WITH MULTI-FIDELITY SIMULATORS	3888
<i>Mark Cutler, Thomas Walsh, Jonathan How</i>	
SAMPLE-BASED INFORMATION-THEORETIC STOCHASTIC OPTIMAL CONTROL	3896
<i>Rudolf Lioutikov, Alexandros Paraschos, Jan Peters, Gerhard Neumann</i>	

A CONNECTIONIST ACTOR-CRITIC ALGORITHM FOR FASTER LEARNING AND BIOLOGICAL PLAUSIBILITY	3903
<i>Leonard Johard, Emanuele Ruffaldi</i>	
3D OBJECT RECOGNITION BY GEOMETRIC CONTEXT AND GAUSSIAN-MIXTURE-MODEL-BASED PLANE CLASSIFICATION	3910
<i>Cang Ye, Xiangfei Qian</i>	
PR2 LOOKING AT THINGS -- ENSEMBLE LEARNING FOR UNSTRUCTURED INFORMATION PROCESSING WITH MARKOV LOGIC NETWORKS	3916
<i>Daniel Nyga, Ferenc Balint-Benczedi, Michael Beetz</i>	
A LAZY DECISION APPROACH BASED ON TERNARY THRESHOLDING FOR ROBUST TARGET OBJECT DETECTION	3924
<i>Jae-Yeong Lee, Wonpil Yu, Jungwon Hwang, Changhwan Kim</i>	
POLYP CLASSIFICATION BASED ON BAG OF FEATURES AND SALIENCY IN WIRELESS CAPSULE ENDOSCOPY	3930
<i>Yixuan Yuan, Max Q.-H. Meng</i>	
SINGLE IMAGE 3D OBJECT DETECTION AND POSE ESTIMATION FOR GRASPING	3936
<i>Menglong Zhu, Konstantinos Derpanis, Yinfei Yang, Samarth Manoj Brahmhatt, Mabel Zhang, Cody Phillips, Matthieu Lecce, Kostas Daniilidis</i>	
MOBILE ROBOT LOCALIZATION SYSTEM IN FREQUENT GPS-DENIED SITUATIONS	3944
<i>Takato Saito, Kentaro Kiuchi, Yoji Kuroda</i>	
TRANSFORMING MORNING TO AFTERNOON USING LINEAR REGRESSION TECHNIQUES	3950
<i>Stephanie Lowry, Michael J Milford, Gordon Wyeth</i>	
LOCALIZATION IN HIGHLY DYNAMIC ENVIRONMENTS USING DUAL-TIMESCALE NDT-MCL	3956
<i>Rafael Valencia, Jari Pekka Saarinen, Henrik Andreasson, Joan Vallve, Juan Andrade-Cetto, Achim J. Lilienthal</i>	
A SLIDING-WINDOW VISUAL-IMU ODOMETER BASED ON TRI-FOCAL TENSOR GEOMETRY	3963
<i>Jwu-Sheng Hu, Ming-Yuan Chen</i>	
EPISODIC NON-MARKOV LOCALIZATION: REASONING ABOUT SHORT-TERM AND LONG-TERM FEATURES	3969
<i>Joydeep Biswas, Manuela Veloso</i>	
AUTOMATIC LANE-LEVEL MAP GENERATION FOR ADVANCED DRIVER ASSISTANCE SYSTEMS USING LOW-COST SENSORS	3975
<i>Chunzhao Guo, Jun-Ichi Meguro, Yoshiko Kojima, Takashi Naito</i>	
CONTINUOUS POSE ESTIMATION FOR STEREO VISION BASED ON UV DISPARITY APPLIED TO VISUAL ODOMETRY IN URBAN ENVIRONMENTS	3983
<i>Basam Musleh, David Martin Gomez, Jose Armingol, Arturo De La Escalera</i>	
AN AUTOMATED SYSTEM FOR PERSISTENT REAL-TIME TRUCK PARKING DETECTION AND INFORMATION DISSEMINATION	3989
<i>Douglas Cook, Ted Morris, Vassilios Morellas, Nikos Papanikolopoulos</i>	
GRID MAPPING IN DYNAMIC ROAD ENVIRONMENTS: CLASSIFICATION OF DYNAMIC CELL HYPOTHESIS VIA TRACKING	3995
<i>Mathias Schreier, Volker Willert, Jurgen Adamy</i>	
DRIVER DROWSINESS DETECTION THROUGH HMM BASED DYNAMIC MODELING	4003
<i>Weihua Sheng, Eyosiyas Tadesse, Meiqin Liu</i>	
LEARNING TO PREDICT PHASES OF MANIPULATION TASKS AS HIDDEN STATES	4009
<i>Oliver Kroemer, Herke Van Hoof, Gerhard Neumann, Jan Peters</i>	
LEARNING TO PREDICT TRAJECTORIES OF COOPERATIVELY NAVIGATING AGENTS	4015
<i>Henrik Kretzschmar, Markus Kuderer, Wolfram Burgard</i>	
LEARNING PREDICTIVE MODELS OF A DEPTH CAMERA & MANIPULATOR FROM RAW EXECUTION TRACES	4021
<i>Byron Boots, Arunkumar Byravan, Dieter Fox</i>	
LEARNING-BASED NONLINEAR MODEL PREDICTIVE CONTROL TO IMPROVE VISION-BASED MOBILE ROBOT PATH-TRACKING IN CHALLENGING OUTDOOR ENVIRONMENTS	4029
<i>Chris J. Ostafew, Angela P. Schoellig, Timothy Barfoot</i>	
DESIGN OF DRIVING FATIGUE DETECTION SYSTEM BASED ON HYBRID MEASURES USING WAVELET-PACKETS TRANSFORM	4037
<i>Fei Wang</i>	
OPTIMIZATION OF THE WORKSPACE OF A MEMS HEXAPOD NANOPositionER USING AN ADAPTIVE GENETIC ALGORITHM	4043
<i>Hongliang Shi, X. C. Duan, Hai-Jun Su</i>	
RANDOM MATRIX BASED UNCERTAINTY MODEL FOR COMPLEX ROBOTIC SYSTEMS	4049
<i>Javad Sovizi, Aliakbar Alamdari, Sonjoy Das, Venkat Krovi</i>	
ELASTODYNAMIC ANALYSIS OF CABLE-DRIVEN PARALLEL MANIPULATORS CONSIDERING DYNAMIC STIFFNESS OF SAGGING CABLES	4055
<i>Han Yuan, Eric Courteille, Dominique Deblaise</i>	
A NEW 6-DOF PARALLEL ROBOT WITH SIMPLE KINEMATIC MODEL	4061
<i>Nicholas Seward, Ilian Bonev</i>	
ASSEMBLY CONDITIONS OF PARALLEL MANIPULATORS CONSIDERING GEOMETRIC ERRORS, JOINT CLEARANCES, LINK FLEXIBILITY AND JOINT ELASTICITY	4067
<i>Davide Corradi, Stephane Caro, Damien Chablat, Philippe Cardou</i>	

GENERIC TRAJECTORY REPRESENTATION AND TRAJECTORY FOLLOWING FOR WHEELED ROBOTS	4073
<i>Morten Kjaergaard, Nils Axel Andersen, Ole Ravn</i>	
BAYESIAN OPTIMISATION FOR ACTIVE PERCEPTION AND SMOOTH NAVIGATION	4081
<i>Jefferson R. Souza, Roman Marchant, Lionel Ott, Denis Fernando Wolf, Fabio Ramos</i>	
NAVIGATION ON POINT-CLOUD - A RIEMANNIAN METRIC APPROACH	4088
<i>Ming Liu, Roland Siegwart</i>	
AN EFFECTIVE VECTOR-DRIVEN BIOLOGICALLY-MOTIVATED NEURAL NETWORK ALGORITHM TO REAL-TIME AUTONOMOUS ROBOT NAVIGATION	4094
<i>Chaomin Luo, Simon X. Yang, Krishnan Mohan, Mark Paulik</i>	
AN INEXPENSIVE METHODOLOGY FOR EVALUATING THE PERFORMANCE OF A MOBILE ROBOT NAVIGATION SYSTEM	4100
<i>Harshavardhana Kikkeri, Gershon Parent, Mihai Jalobeanu, Stan Birchfield</i>	
SPIN OBSERVATION AND TRAJECTORY PREDICTION OF A PING-PONG BALL	4108
<i>Yifeng Zhang, Yongsheng Zhao, Rong Xiong, Yue Wang, Jianguo Jack Wang, Jian Chu</i>	
COMBINING COMPLEMENTARY EDGE, KEYPOINT AND COLOR FEATURES IN MODEL-BASED TRACKING FOR HIGHLY DYNAMIC SCENES	4115
<i>Antoine Petit, Eric Marchand, Keyvan Kanani</i>	
TOWARD AN ACCURATE TRACKING OF HEPATIC TUMORS FOR AUGMENTED REALITY IN ROBOTIC ASSISTED SURGERY	4121
<i>Nazim Haouchine, Jeremie Dequidt, Igor Peterlik, Erwan Kerrien, Marie-Odile Berger, Stephane Cotin</i>	
STATE ESTIMATION AND TRACKING OF DEFORMING PLANAR ELASTIC RODS	4127
<i>Andy Borum, Dennis Matthews, Timothy Bretl</i>	
TRACKING THE SPIN ON A PING PONG BALL WITH THE QUATERNION BINGHAM FILTER	4133
<i>Jared Glover, Leslie Kaelbling</i>	
DESIGN OF KINEMATIC CONTROLLER FOR REAL-TIME VISION GUIDED ROBOT MANIPULATORS	4141
<i>Cong Wang, Chung-Yen Lin, Masayoshi Tomizuka</i>	
STATISTICAL IDENTIFICATION AND MACROSCOPIC TRANSITIONAL MODEL BETWEEN DISORDER AND ORDER	4147
<i>Helge Arne Wurdemann, Vahid Aminzadeh, Jian Dai</i>	
A SINGLE TIME SCALE VISUAL SERVOING SYSTEM FOR A HIGH SPEED SCARA TYPE ROBOTIC ARM	4153
<i>Migara Liyanage, Nicholas Krouglicof</i>	
TOWARDS CONTROL AND SENSING FOR AN AUTONOMOUS MOBILE ROBOTIC ASSISTANT NAVIGATING ASSEMBLY LINES	4161
<i>Vaibhav V. Unhelkar, Jorge Perez, James C. Boerkoel Jr., Johannes Bix, Stefan Bartscher, Julie A. Shah</i>	
AUTONOMOUS OPTIMIZATION OF FINE MOTIONS FOR ROBOTIC ASSEMBLY	4168
<i>Emil Krabbe, Ewa Kolakowska, Lasse Hansen, David Bourne</i>	
KINEMATIC CONTROL OF REDUNDANT ARMS BASED ON THE VIRTUAL INCISION PORTS FOR ROBOTIC SINGLE-PORT ACCESS SURGERY	4176
<i>Junwon Jang, Hyundo Choi, Hyungjoo Kim, Hoseong Kwak</i>	
A FOLDABLE STEREO VISION UNIT FOR SINGLE PORT ACCESS LAPAROSCOPY	4182
<i>Kai Xu, Jiangran Zhao, Zhengchen Dai</i>	
AN NOVEL TUMOR LOCALIZATION METHOD USING HAPTIC PALPATION BASED ON SOFT TISSUE PROBING DATA	4188
<i>Min Li, Angela Faragasso, Jelizaveta Konstantinova, Vahid Aminzadeh, Lakmal Seneviratne, Prokar Dasgupta, Kaspar Althoefler</i>	
ENHANCED COMPUTER-ASSISTED LASER MICROSURGERIES WITH A "VIRTUAL MICROSCOPE" BASED SURGICAL SYSTEM	4194
<i>Nikhil Deshpande, Jesus Ortiz, Darwin G. Caldwell, Leonardo Mattos</i>	
POSTURE CONTROL OF A THREE-SEGMENTED TRACKED ROBOT WITH TORQUE MINIMIZATION DURING STEP CLIMBING	4200
<i>Sartaj Singh, Babu Jadhav, Madhava Krishna</i>	
ACTIVE BENDING MOTION OF POLE VAULT ROBOT TO IMPROVE REACHABLE HEIGHT	4208
<i>Toshihiko Fukushima, Satoshi Nishikawa, Yasuo Kuniyoshi</i>	
PERCHING AND VERTICAL CLIMBING: DESIGN OF A MULTIMODAL ROBOT	4215
<i>Matthew Estrada, Elliot Wright Hawkes, David Christensen, Mark Cutkosky</i>	
A COMPLIANT TENSEGRITY ROBOT FOR EXPLORING DUCT SYSTEMS	4222
<i>Jeffrey Michael Friesen, Alexandra Pogue, Thomas Bewley, Mauricio De Oliveira, Robert E. Skelton, Vytas Sunspiral</i>	
MODELLING OF CONTINUOUS DRAGLINE FORMATION IN A MOBILE ROBOT	4229
<i>Liyu Wang, Cinzia Peruzzi, Utku Culha, Milan Jovic, Fumiya Iida</i>	
AN OPTIMIZATION APPROACH TO BEARING-ONLY VISUAL HOMING WITH APPLICATIONS TO A 2-D UNICYCLE MODEL	4235
<i>Roberto Tron, Kostas Daniilidis</i>	
TOWARDS AUTOMATIC DISCOVERY OF AGILE GAITS FOR QUADRUPEDAL ROBOTS	4243
<i>Christian Gehring, Stelian Coros, Marco Hutter, Michael Bloesch, Peter Fankhauser, Mark Hoepffinger, Roland Siegwart</i>	
DESIGN OF A CONTROLLER FOR ENLARGING PARALLEL ROBOTS WORKSPACE THROUGH TYPE 2 SINGULARITY CROSSING	4249
<i>Georges Pagis, Nicolas Bouton, Sebastien Briot, Philippe Martinet</i>	

A HAPTIC HUMAN-ROBOT INTERFACE ACCOUNTING FOR HUMAN PARAMETER STOCHASTICITY	4256
<i>William Gallagher, Jun Ueda</i>	

VOLUME 6

A FRAMEWORK OF MODEL CHECKING GUIDED TEST VECTOR GENERATION FOR THE 6DOF MANIPULATOR	4262
<i>Yilin Lu, Yong Guan, Xiaojuan Li, Rui Wang, Jie Zhang</i>	
FAST AND ACCURATE POSESLAM BY COMBINING RELATIVE AND GLOBAL STATE SPACES	4268
<i>Brian Peasley, Stan Birchfield</i>	
REPRESENTING AND SOLVING LOCAL AND GLOBAL AMBIGUITIES AS MULTIMODAL AND HYPEREDGE CONSTRAINTS IN A GENERALIZED GRAPH SLAM FRAMEWORK	4276
<i>Max Pflugsthorn, Andreas Birk</i>	
ROBUST POSE GRAPH OPTIMIZATION USING STOCHASTIC GRADIENT DESCENT	4284
<i>John Wang, Edwin Olson</i>	
ELIMINATING CONDITIONALLY INDEPENDENT SETS IN FACTOR GRAPHS: A UNIFYING PERSPECTIVE BASED ON SMART FACTORS	4290
<i>Luca Carlone, Zsolt Kira, Chris Beall, Vadim Indelman, Frank Dellaert</i>	
MATCHING LINE SEGMENT SCANS WITH MUTUAL COMPATIBILITY CONSTRAINTS	4298
<i>Mladen Mazuran, Francesco Amigoni</i>	
DISTRIBUTED PLAN RECONFIGURATION VIA KNOWLEDGE TRANSFER IN MULTI-AGENT SYSTEMS UNDER LOCAL LTL SPECIFICATIONS	4304
<i>Meng Guo, Dimos V. Dimarogonas</i>	
REACTIVE SAMPLING-BASED TEMPORAL LOGIC PATH PLANNING	4310
<i>Cristian Ioan Vasile, Calin Belta</i>	
SYNTHESIS FOR MULTI-ROBOT CONTROLLERS WITH INTERLEAVED MOTION	4316
<i>Vasumathi Raman, Hadas Kress-Gazit</i>	
MONTE CARLO METHODS FOR EXACT & EFFICIENT SOLUTION OF THE GENERALIZED OPTIMALITY EQUATIONS	4322
<i>Pedro Alejandro Ortega, Daniel Alexander Braun, Naftali Tishby</i>	
OPEN-WORLD MISSION SPECIFICATION FOR REACTIVE ROBOTS	4328
<i>Spyros Maniatiopoulos, Matthew Blair, Cameron Finucane, Hadas Kress-Gazit</i>	
THE FLYING HAND: A FORMATION OF UAVS FOR COOPERATIVE AERIAL TELE-MANIPULATION	4335
<i>Guido Gioioso, Antonio Franchi, Gionata Salvietti, Stefano Scheggi, Domenico Prattichizzo</i>	
EXTRACTING KINEMATIC BACKGROUND KNOWLEDGE FROM INTERACTIONS USING TASK-SENSITIVE RELATIONAL LEARNING	4342
<i>Sebastian Hofer, Tobias Lang, Oliver Brock</i>	
SENSOR-BASED, TASK-CONSTRAINED MOTION GENERATION UNDER UNCERTAINTY	4348
<i>Arne Sieverling, Nicolas Kuhnen, Oliver Brock</i>	
COORDINATION OF A NONHOLONOMIC MOBILE PLATFORM AND AN ON-BOARD MANIPULATOR	4356
<i>Yunyi Jia, Ning Xi, Erick Nieves</i>	
RRTPI: POLICY ITERATION ON CONTINUOUS DOMAINS USING RAPIDLY-EXPLORING RANDOM TREES	4362
<i>Manimaran Sivasamy Sivamurugan, Balaraman Ravindran</i>	
NEEDLE STEERING IN BIOLOGICAL TISSUE USING ULTRASOUND-BASED ONLINE CURVATURE ESTIMATION	4368
<i>Pedro Moreira, Sachin Patil, Ron Alterovitz, Sarthak Misra</i>	
REAL-TIME TRAJECTORY TRACKING FOR EXTERNALLY LOADED CONCENTRIC-TUBE ROBOTS	4374
<i>Ran Xu, Ali Asadian, Seyed Farokh Atashzar, Rajnikant V. Patel</i>	
A PRELIMINARY STUDY ON USING A ROBOTICALLY-ACTUATED DELIVERY SHEATH (RADS) FOR TRANSPAPICAL AORTIC VALVE IMPLANTATION	4380
<i>Gustaaf Johannes Vrooijink, Tim Tobias Maria Ellenbroek, Paul Breedveld, Jan G. Grandjean, Sarthak Misra</i>	
AUTOMATED CAPSULORHEXIS BASED ON A HYBRID MAGNETIC-MECHANICAL ACTUATION SYSTEM	4387
<i>Franziska Ullrich, Simone Schuerle, Roel S. Pieters, Avraham Dishy, Stephan Michels, Bradley J. Nelson</i>	
THREE DIMENSIONAL MODELING OF AN MRI ACTUATED STEERABLE CATHETER SYSTEM	4393
<i>Taoming Liu, M. Cenk Cavusoglu</i>	
ROBOT LEARNING BASED ON PARTIAL OBSERVABLE MARKOV DECISION PROCESS IN UNSTRUCTURED ENVIRONMENT	4399
<i>Hongtai Cheng, Heping Chen, Lina Hao, Wei Li</i>	
WIDE-RANGE LOAD SENSOR USING QUARTZ CRYSTAL RESONATOR FOR BIOLOGICAL SIGNAL DETECTION	4405
<i>Yuichi Murozaki, Fumihito Arai</i>	
POLYNOMIAL RECONSTRUCTION OF 3D SAMPLED CURVES USING AUXILIARY SURFACE DATA	4411
<i>Fredrik Bagge Carlson, Ngoc Dung Vuong, Rolf Johansson</i>	
SELF-ASSEMBLING SENSORS FOR PRINTABLE MACHINES	4417
<i>Byunghyun Shin, Samuel Felton, Michael Thomas Tolley, Robert Wood</i>	

DISTRIBUTED SUPERVISOR SYNTHESIS FOR AUTOMATED MANUFACTURING SYSTEMS USING PETRI NETS	4423
<i>Hesuan Hu</i>	
VISION-BASED ASSISTANCE FOR WHEELCHAIR NAVIGATION ALONG CORRIDORS	4430
<i>Francois Pasteau, Alexandre Krupa, Marie Babel</i>	
POSE ESTIMATION IN INDUSTRIAL MACHINE VISION SYSTEMS UNDER SENSING DYNAMICS: A STATISTICAL LEARNING APPROACH	4436
<i>Chung-Yen Lin, Cong Wang, Masayoshi Tomizuka</i>	
CALIBRATING AND CENTERING QUASI-CENTRAL CATADIOPTRIC CAMERAS	4443
<i>Miriam Schonbein, Tobias Straub, Andreas Geiger</i>	
SCALE SPACE AND FREE SPACE TOPOLOGY ANALYSIS FOR OMNIDIRECTIONAL IMAGES	4451
<i>Romain Marie, Ouidad Labbani-Igbida, El Mustapha Mouaddib</i>	
A DYNAMIC AND UNCALIBRATED METHOD TO VISUALLY SERVO-CONTROL ELASTIC DEFORMATIONS BY FULLY-CONSTRAINED ROBOTIC GRIPPERS	4457
<i>David Navarro-Alarcon, Yunhui Liu</i>	
GRASPING OBJECTS WITH A CABLE-DRIVEN PARALLEL ROBOT DESIGNED FOR TRANSFER OPERATION BY VISUAL SERVOING	4463
<i>Remy Ramadour, Francois Chaumette, Jean-Pierre Merlet</i>	
ROBUSTNESS ANALYSIS OF MODEL PREDICTIVE CONTROL FOR CONSTRAINED IMAGE-BASED VISUAL SERVOING	4469
<i>Shahab Heshmati-Alamdari, George K. Karavas, Alina Eqtami, Michael Drossakis, Kostas Kyriakopoulos</i>	
REACTIONLESS VISUAL SERVOING OF A DUAL-ARM SPACE ROBOT	4475
<i>A. H. Abdul Hafez, Anurag Viswanadha Visagakoti, Suril Vijaykumar Shah, Madhava Krishna, C. V. Jawahar</i>	
SURFACE NORMAL MEASUREMENT IN THE END EFFECTOR OF A DRILLING ROBOT FOR AVIATION	4481
<i>Peijiang Yuan, Qishen Wang, Tianmiao Wang, Chengkun Wang, Bo Song</i>	
ON THE CONTROL OF AN AERIAL MANIPULATOR INTERACTING WITH THE ENVIRONMENT	4487
<i>Francesco Forte, Roberto Naldi, Alessandro Macchelli, Lorenzo Marconi</i>	
3D PRINTING WITH FLYING ROBOTS	4493
<i>Graham Alexander Hunt, Faidon Mitzalis, Talib Alhinaï, Paul Hooper, Mirko Kovac</i>	
EFFICIENT FORCE EXERTION FOR AERIAL ROBOTIC MANIPULATION: EXPLOITING THE THRUST-VECTORING AUTHORITY OF A TRI-TILTROTOR UAV	4500
<i>Christos Papachristos, Kostas Alexis, Anthony Tzes</i>	
SIMULTANEOUS PROJECTION MAPPING USING HIGH-FRAME-RATE DEPTH VISION	4506
<i>Jun Chen, Takashi Yamamoto, Tadayoshi Aoyama, Takeshi Takaki, Idaku Ishii</i>	
3D RECONSTRUCTION OF FREELY MOVING PERSONS FOR RE-IDENTIFICATION WITH A DEPTH SENSOR	4512
<i>Matteo Munaro, Alberto Basso, Andrea Fossati, Luc Van Gool, Emanuele Menegatti</i>	
ACTION RECOGNITION USING ENSEMBLE WEIGHTED MULTI-INSTANCE LEARNING	4520
<i>Guang Chen, Manuel Giuliani, Daniel Stephen Clarke, Andre K. Gaschler, Alois Knoll</i>	
CROWDSOURCING THE CONSTRUCTION OF A 3D OBJECT RECOGNITION DATABASE FOR ROBOTIC GRASPING	4526
<i>David Kent, Morteza Behrooz, Sonia Chernova</i>	
DIFFERENTIAL GEOMETRIC MODELLING AND ROBUST PATH FOLLOWING CONTROL OF SNAKE ROBOTS USING SLIDING MODE TECHNIQUES	4532
<i>Ehsan Rezapour, Kristin Y. Pettersen, Pal Liljeback, Jan Tommy Gravdahl</i>	
MODELING OF UNDERWATER SNAKE ROBOTS	4540
<i>Eleni Kelasidi, Kristin Y. Pettersen, Jan Tommy Gravdahl, Pal Liljeback</i>	
COMPLIANT CONTROL OF THE BODY SHAPE OF SNAKE ROBOTS	4548
<i>Pal Liljeback, Kristin Y. Pettersen, Oyvind Stavdahl, Jan Tommy Gravdahl</i>	
CONTROL OF HOPPING THROUGH ACTIVE VIRTUAL TUNING OF LEG DAMPING FOR SERIALY ACTUATED LEGGED ROBOTS	4556
<i>Gorkem Secer, Uluc Saranlı</i>	
JUMPING CONTROL FOR COMPLIANTLY ACTUATED MULTILEGGED ROBOTS	4562
<i>Dominic Lakatos, Gianluca Garofalo, Alexander Dietrich, Alin Albu-Schaffer</i>	
ROLL OSCILLATION MODULATED TURNING IN DYNAMIC MILLIROBOTS	4569
<i>Duncan Haldane, Ronald Fearing</i>	
DETECTION OF SLIPPERY TERRAIN WITH A HETEROGENEOUS TEAM OF LEGGED ROBOTS	4576
<i>Duncan Haldane, Peter Fankhauser, Roland Siegwart, Ronald Fearing</i>	
EXPERIMENTAL STUDY ON EFFICIENT USE OF SINGULAR CONFIGURATION IN PULLING HEAVY OBJECTS WITH TWO-LINK ROBOT ARM	4582
<i>Takateru Urakubo, Hiroki Yoshioka, Tomoaki Mashimo, Xianglong Wan</i>	
ROBOTIC CELL MANIPULATION USING OPTICAL TWEEZERS WITH LIMITED FOV	4588
<i>Xiang Li, C. C. Cheah, Xiao Yan, Dong Sun</i>	
HUMAN-GUIDED ROBOTIC MANIPULATION: THEORY AND EXPERIMENTS	4594
<i>Xiang Li, C. C. Cheah</i>	
FEEDBACK STABILIZER-BASED TRAJECTORY PLANNING OF MOBILE ROBOTS WITH KINEMATIC CONSTRAINTS	4600
<i>Xuebo Zhang, Yuan Li, Yongchun Fang, Baoquan Li</i>	

A COMPARISON OF SLAM ALGORITHMS WITH RANGE ONLY SENSORS	4606
<i>Fernando Herranz, Angel Llamazares, Eduardo Molinos, Manuel Ocana</i>	
A HOUGH TRANSFORM BASED SCAN REGISTRATION STRATEGY FOR MOBILE ROBOTIC MAPPING	4612
<i>Bo Sun, Weiwei Kong, Junhao Xiao, Jianwei Zhang</i>	
DEVELOPMENT OF SMALL SIZE 3D LIDAR	4620
<i>Katsumi Kimoto, Norihiro Asada, Toshihiro Mori, Yoshitaka Hara, Akihisa Ohya, Shinichi Yuta</i>	
RECONSTRUCTION OF RIGID BODY MODELS FROM MOTION DISTORTED LASER RANGE DATA USING OPTICAL FLOW	4627
<i>Eddy Ilg, Rainer Kuemmerle, Wolfram Burgard, Thomas Brox</i>	
AUTONOMOUS ENVIRONMENT MANIPULATION TO ASSIST HUMANOID LOCOMOTION	4633
<i>Martin Levihn, Koichi Nishiwaki, Satoshi Kagami, Mike Stilman</i>	
REAL-TIME PLANNING WITH PRIMITIVES FOR DYNAMIC WALKING OVER UNEVEN TERRAIN	4639
<i>Ian Manchester, Jack Umenberger</i>	
STABILITY ANALYSIS METHOD INDEPENDENT OF NUMERICAL INTEGRATION FOR LIMIT CYCLE WALKING WITH CONSTRAINT ON IMPACT POSTURE	4647
<i>Fumihiko Asano</i>	
REACTIVE BIPED ROBOT WALKING WITH ON-LINE PATH GENERATION AND OBSTACLE AVOIDANCE	4653
<i>Ren Luo, Jun Sheng, Chin-Cheng Chen, Peng Hsi Chang</i>	
SPARK PRM: USING RRTS WITHIN PRMS TO EFFICIENTLY EXPLORE NARROW PASSAGES	4659
<i>Kensen Shi, Jory Denny, Nancy Amato</i>	
POISSON-RRT	4667
<i>Chonhyon Park, Jia Pan, Dinesh Manocha</i>	
AN IMPROVED RRT-BASED MOTION PLANNER FOR AUTONOMOUS VEHICLE IN CLUTTERED ENVIRONMENTS	4674
<i>Mingbo Du, Jiajia Chen, Pan Zhao, Huawei Liang, Yu Xin, Tao Mei</i>	
ASYMPTOTICALLY NEAR-OPTIMAL RRT FOR FAST, HIGH-QUALITY, MOTION PLANNING	4680
<i>Oren Salzman, Dan Halperin</i>	
CHARACTERIZATION OF THREE-DIMENSIONAL STEERING FOR HELICAL SWIMMERS	4686
<i>Tiantian Xu, Gilgueng Hwang, Nicolas Andreff, Stephane Regnier</i>	
INCREASING THE ACCURACY AND REPEATABILITY OF POSITIONING CONTROL FOR MICROMANIPULATIONS USING HETEROSCEDASTIC GAUSSIAN PROCESSES	4692
<i>Yanyu Su, Wei Dong, Yan Wu, Zhijiang Du, Yiannis Demiris</i>	
CONTROL OF FLAGELLAR MOTOR USING A REAL-TIME LOCAL ENVIRONMENT CHEMICAL STIMULATION SYSTEM	4699
<i>Masaru Kojima, Takahiro Motoyoshi, Kenichi Ohara, Mitsuhiro Horade, Kazuto Kamiyama, Yasushi Mae, Tatsuo Arai</i>	
DEVELOPMENT OF A SYMMETRICAL SPIRAL WIRELESS MICROROBOT IN PIPE FOR BIOMEDICAL APPLICATIONS	4705
<i>Shuxiang Guo, Xiang Wei, Jian Guo, Wei Wei, Yuehui Ji, Yunliang Wang</i>	
VIEWPOINT AND TRAJECTORY OPTIMIZATION FOR ANIMATION DISPLAY WITH AERIAL VEHICLES	4711
<i>Marcel Schoch, Javier Alonso-Mora, Roland Siegwart, Paul Beardsley</i>	
AN HP-ADAPTATIVE PSEUDOSPECTRAL METHOD FOR COLLISION AVOIDANCE WITH MULTIPLE UAVS IN REAL-TIME APPLICATIONS	4717
<i>Santiago Vera Rendon, Jose A. Cobano, Guillermo Heredia, Anibal Ollero</i>	
TERRAIN CLASSIFICATION ON A ONE-LEGGED HOPPING ROBOT USING HIGH-RESOLUTION PRESSURE IMAGES	4723
<i>Jacob Shill, Emmanuel Collins, Eric Coyle, Jonathan Clark</i>	
AUDIO-BASED LOCALIZATION FOR SWARMS OF MICRO AIR VEHICLES	4729
<i>Meysam Basiri, Felix Schill, Dario Floreano, Pedro Lima</i>	
A DECENTRALIZED ALGORITHM FOR AREA SURVEILLANCE MISSIONS USING A TEAM OF AERIAL ROBOTS WITH DIFFERENT SENSING CAPABILITIES	4735
<i>Jose Joaquin Acevedo, Begona C. Arrue, Ivan Maza, Anibal Ollero</i>	
PHYSICS-AWARE INFORMATIVE COVERAGE PLANNING FOR AUTONOMOUS VEHICLES	4741
<i>Michael J. Kuhlman, Petr Svec, Krishnanand Kaipa Narasimha, Donald Sofge, Satyandra K. Gupta</i>	
JOINT DETECTION AND RECOGNITION OF HUMAN ACTIONS IN WIRELESS SURVEILLANCE CAMERA NETWORKS	4747
<i>Nikhil Santosh Naikal, Pedram Lajevardi, Shankar Sastry</i>	
AN ACTIVE STRATEGY FOR PLANE DETECTION AND ESTIMATION WITH A MONOCULAR CAMERA	4755
<i>Paolo Robuffo Giordano, Riccardo Spica, Francois Chaumette</i>	
A NOVEL TELEROBOTIC METHOD FOR HUMAN-IN-THE-LOOP ASSISTED GRASPING BASED ON INTENTION RECOGNITION	4762
<i>Karan Khokar, Redwan Alqasemi, Sudeep Sarkar, Kyle B. Reed, Rajiv Dubey</i>	
ONLINE APPROACH FOR ALTERING ROBOT BEHAVIORS BASED ON HUMAN IN THE LOOP COACHING GESTURES	4770
<i>Tadej Petric, Andrej Gams, Leon Zlajpah, Ales Ude, Jun Morimoto</i>	
ACCELERATING IMITATION LEARNING THROUGH CROWDSOURCING	4777
<i>Mike Chung, Maxwell Forbes, Maya Cakmak, Rajesh P. N. Rao</i>	

INSERTION OF PAUSE IN DRAWING FROM BABBLING FOR ROBOT'S DEVELOPMENTAL IMITATION LEARNING	4785
<i>Shun Nishide, Keita Mochizuki, Hiroshi G. Okuno, Tetsuya Ogata</i>	
OPTIMAL PRESSURE CONTROL OF PNEUMATIC ARTIFICIAL MUSCLE WITH USING A PRESSURE-TORQUE CONVERSION MODEL	4792
<i>Tatsuya Teramae, Tomoyuki Noda, Jun Morimoto</i>	
DYNAMICAL MODEL AVERAGING AND PWM BASED CONTROL FOR PNEUMATIC ACTUATORS	4798
<i>Sean Hodgson, Mahdi Tavakoli, Minh Tu Pham, Arnaud Leleve</i>	
A SOFT WEARABLE ROBOTIC DEVICE FOR ACTIVE KNEE MOTIONS USING FLAT PNEUMATIC ARTIFICIAL MUSCLES	4805
<i>Yong-Lae Park, Jose Jobim Santos, Kevin Galloway, Eugene Goldfield, Robert Wood</i>	
POWER AND ENDURANCE FOR COMFORTABLE WEARABLE ROBOTICS	4811
<i>Dennis Majoe, Lars Widmer</i>	
KINEMATIC MODELING AND CONTROL OF A MULTI-JOINT SOFT INFLATABLE ROBOT ARM WITH CABLE-DRIVEN MECHANISM	4819
<i>Ronghuai Qi, Tin Lun Lam, Yangsheng Xu</i>	
IMPROVING SKIN ARTIFACTS COMPENSATION FOR KNEE FLEXION/EXTENSION AND KNEE INTERNAL/EXTERNAL ROTATION	4825
<i>Marta Moltedo, Sophie Sakka</i>	
CLOSED FORM EXPRESSIONS FOR THE SENSITIVITY OF KINEMATIC DEXTERITY MEASURES TO POSTURE CHANGING AND GEOMETRIC VARIATIONS	4831
<i>Andreas Mueller</i>	
A REDUCED-GRAVITY SIMULATOR FOR PHYSICALLY SIMULATING HUMAN WALKING IN MICROGRAVITY OR REDUCED-GRAVITY ENVIRONMENT	4837
<i>Wenwu Xiu, Kenneth Ruble, Ou Ma</i>	
SELECTING BEST VIEWPOINT FOR HUMAN-POSE ESTIMATION	4844
<i>Kai-Chi Chan, Cheng-Kok Koh, C. S. George Lee</i>	
A COMPARATIVE STUDY ON PCA AND LDA BASED EMG PATTERN RECOGNITION FOR ANTHROPOMORPHIC ROBOTIC HAND	4850
<i>Daohui Zhang, Xingang Zhao, Jianda Han, Yiwen Zhao</i>	
JOINT CLASSIFICATION OF ACTIONS AND OBJECT STATE CHANGES WITH A LATENT VARIABLE DISCRIMINATIVE MODEL	4856
<i>Efstathios Vafeias, Subramanian Ramamoorthy</i>	
CONTINUOUS GESTURE RECOGNITION FOR FLEXIBLE HUMAN-ROBOT INTERACTION	4863
<i>Salvatore Iengo, Silvia Rossi, Mariacarla Staffa, Alberto Finzi</i>	
GUIDANCE OF A HIGH DEXTERITY ROBOT UNDER 3D ULTRASOUND FOR MINIMALLY INVASIVE RETRIEVAL OF FOREIGN BODIES FROM A BEATING HEART	4869
<i>Paul Thienphrapa, Aleksandra Popovic, Russell H. Taylor</i>	
GPC-BASED TELEOPERATION FOR DELAY COMPENSATION AND DISTURBANCE REJECTION IN IMAGE-GUIDED BEATING-HEART SURGERY	4875
<i>Meaghan Bowthorpe, Abril Alvarez Garcia, Mahdi Tavakoli</i>	
NEEDLE LOCALIZATION USING GABOR FILTERING IN 2D ULTRASOUND IMAGES	4881
<i>Mert Kaya, Ozkan Bebek</i>	
SURGICAL TOOL ATTRIBUTES FROM MONOCULAR VIDEO	4887
<i>Suren Kumar, Madusudanan Sathia Narayanan, Pankaj Singhal, Jason Corso, Venkat Krovvi</i>	
AN INFORMATION-THEORETIC APPROACH TO THE CORRESPONDENCE-FREE AX=XB SENSOR CALIBRATION PROBLEM	4893
<i>Martin Kendal Ackerman, Alexis Cheng, Gregory Chirikjian</i>	
ONLINE ULTRASOUND SENSOR CALIBRATION USING GRADIENT DESCENT ON THE EUCLIDEAN GROUP	4900
<i>Martin Kendal Ackerman, Alexis Cheng, Emad Bector, Gregory Chirikjian</i>	
SOFTWARE COMPENSATION OF MAGNETIC CROSSTALK ON HALL-EFFECT-BASED ROTARY ENCODERS CLOSE TOGETHER	4906
<i>Guillaume Walck, Veronique Perdereau</i>	
INFRASTRUCTURE-BASED CALIBRATION OF A MULTI-CAMERA RIG	4912
<i>Lionel Heng, Mathias Burki, Gim Hee Lee, Paul Timothy Furgale, Roland Siegwart, Marc Pollefeys</i>	
VISION-BASED ROBUST ROAD LANE DETECTION IN URBAN ENVIRONMENTS	4920
<i>Michael Beyeler, Florian Mirus, Alexander Verl</i>	
TOWARDS CONSISTENT VISUAL-INERTIAL NAVIGATION	4926
<i>Guoquan Huang, Michael Kaess, John Leonard</i>	
VIEWPOINT SELECTION FOR VISION SYSTEMS IN INDUSTRIAL INSPECTION	4934
<i>Jose Luis Alarcon Herrera, Xiang Chen, Xuebo Zhang</i>	
A SYNCHRONOUS AND MULTI-DOMAIN FEATURE EXTRACTION METHOD OF EEG AND SEMG IN POWER-ASSIST REHABILITATION ROBOT	4940
<i>Yan Song, Yihao Du, Xiaoguang Wu, Xiaoling Chen, Ping Xie</i>	
ATTENTION-DRIVEN OBJECT DETECTION AND SEGMENTATION OF CLUTTERED TABLE SCENES USING 2.5D SYMMETRY	4946
<i>Ekaterina Potapova, Karthik Mahesh Varadarajan, Andreas Richtsfeld, Michael Zillich, Markus Vincze</i>	

AUTONOMOUS ACQUISITION OF GENERIC HANDHELD OBJECTS IN UNSTRUCTURED ENVIRONMENTS VIA SEQUENTIAL BACK-TRACKING FOR OBJECT RECOGNITION	4953
<i>Krishneel Chand Chaudhary, Yasushi Mae, Masaru Kojima, Tatsuo Arai</i>	
PHYSICAL INTERACTION FOR SEGMENTATION OF UNKNOWN TEXTURED AND NON-TEXTURED RIGID OBJECTS	4959
<i>David Schiebener, Ales Ude, Tamim Asfour</i>	
LEARNING TO PREDICT OBSTACLE AERODYNAMICS FROM DEPTH IMAGES FOR MICRO AIR VEHICLES	4967
<i>John Bartholomew, Andrew Calway, Walterio Mayol</i>	
MULTI-SENSOR FUSION FOR ROBUST AUTONOMOUS FLIGHT IN INDOOR AND OUTDOOR ENVIRONMENTS WITH A ROTORCRAFT MAV	4974
<i>Shaojie Shen, Yash Mulgaonkar, Nathan Michael, Vijay Kumar</i>	
AUTONOMOUS FLIGHT OF A 20-GRAM FLAPPING WING MAV WITH A 4-GRAM ONBOARD STEREO VISION SYSTEM	4982
<i>Christophe De Wagter, Sjoerd Tijmons, Bart Remes, Guido De Croon</i>	
A VISION BASED RELATIVE NAVIGATION FRAMEWORK FOR FORMATION FLIGHT	4988
<i>Daniel Briggs Wilson, Ali Haydar Goktogan, Salah Sukkarieh</i>	
FAST ONLINE LEARNING AND DETECTION OF NATURAL LANDMARKS FOR AUTONOMOUS AERIAL ROBOTS	4996
<i>Michael Villamizar, Alberto Sanfeliu, Francesc Moreno-Noguer</i>	
IMPLEMENTATION OF ARBITRARY PERIODIC DYNAMIC BEHAVIORS IN NETWORKED SYSTEMS	5004
<i>Lorenzo Sabattini, Cristian Secchi, Matteo Cocetti, Cesare Fantuzzi</i>	
DECENTRALIZED ALGORITHMS FOR OPTIMALLY RIGID NETWORK CONSTRUCTIONS	5010
<i>Attilio Priolo, Ryan Williams, Andrea Gasparri, Gaurav Sukhatme</i>	
COMMUNICATION ADAPTIVE MULTI-ROBOT SIMULTANEOUS LOCALIZATION AND TRACKING VIA HYBRID MEASUREMENT AND BELIEF SHARING	5016
<i>Chun-Kai Chang, Chun-Hua Chang, Chieh-Chih Wang</i>	
A MOBILITY-CONTROLLED LINK QUALITY LEARNING PROTOCOL FOR MULTI-ROBOT COORDINATION TASKS	5024
<i>Michal Kudelski, Luca Gambardella, Gianni A. Di Caro</i>	
A NOVEL ACTUATION TECHNOLOGY FOR SAFE PHYSICAL HUMAN-ROBOT INTERACTIONS	5032
<i>Laure Esteveny, Laurent Barbe, Bernard Bayle</i>	
A PAPER-BASED ELECTROSTATIC ZIPPER ACTUATOR FOR PRINTABLE ROBOTS	5038
<i>Abraham Simpson Chen, Hongli Zhu, Liangbing Hu, Sarah Bergbreiter, Yuanyuan Li</i>	
ROBOT DESIGN FOR BIDIRECTIONAL LOCOMOTION INDUCED BY VIBRATION EXCITATION	5044
<i>Jaeyeon Lee, Wooram Park</i>	
DESIGN OPTIMIZATION AND COMPARISON OF MAGNETO-RHEOLOGICAL ACTUATORS	5050
<i>Wenjun Li, Peyman Yadmellat, Mehrdad R. Kermani</i>	
PREDICTIVE ONLINE INVERSE KINEMATICS FOR REDUNDANT MANIPULATORS	5056
<i>Christoph Schutz, Thomas Buschmann, Joerg Baur, Julian Pfaff, Heinz Ulbrich</i>	
PRIORITIZED INVERSE KINEMATICS USING QR AND CHOLESKY DECOMPOSITIONS	5062
<i>Sang-Ik An, Dongheui Lee</i>	
A NOVEL SINGULARITY-CONSISTENT INVERSE KINEMATICS DECOMPOSITION FOR S-R-S TYPE MANIPULATORS	5070
<i>Shota Taki, Dragomir Nenchev</i>	
ENERGY SAVINGS OF A 2-DOF MANIPULATOR WITH REDUNDANT ACTUATION	5076
<i>Giuk Lee, Donghun Lee, Jay Jeong, Jongwon Kim</i>	
EXPERIMENTAL VERIFICATION OF AN APPROACH FOR DISTURBANCE ESTIMATION AND COMPENSATION ON A SIMULATED BIPED DURING PERTURBED STANCE	5082
<i>Jie Zhao, Qi Liu, Steffen Schuetz, Karsten Berns</i>	
HUMAN-INSPIRED WALKING VIA UNIFIED PD AND IMPEDANCE CONTROL	5088
<i>Wenlong Ma, Zhao Huihua, Shishir Kolathaya, Aaron Ames</i>	
A STUDY OF THE PASSIVE REBOUND BEHAVIOR OF BIPEDAL ROBOTS WITH STIFF AND DIFFERENT TYPES OF ELASTIC ACTUATION	5095
<i>Katayon Radkhah, Oskar Von Stryk</i>	
POWER EFFICIENT BALANCING CONTROL FOR HUMANOIDS BASED ON APPROXIMATE OPTIMAL ANKLE COMPLIANCE REGULATION	5103
<i>Mohamad Mosadeghzad, Nikolaos Tsagarakis, Gustavo Medrano-Cerda, Darwin G. Caldwell</i>	
CPG-BASED CONTROL DESIGN FOR BIPEDAL WALKING ON UNKNOWN SLOPE SURFACES	5109
<i>Kai-Tai Song, Chang-Hung Hsieh</i>	

VOLUME 7

A MINIATURE 25 GRAMS RUNNING AND JUMPING ROBOT	5115
<i>Jianguo Zhao, Weihai Yan, Ning Xi, Matt Mutka, Li Xiao</i>	
DESIGN OF A ROBOT FOR IN-PIPE INSPECTION USING OMNIDIRECTIONAL WHEELS AND ACTIVE STABILIZATION	5121
<i>Edwin Dertien, Mohammad Mozaffari Founashi, Kees Pulles, Stefano Stramigioli</i>	

DESIGN OF FLEXONIC MOBILE NODE USING 3D COMPLIANT BEAM FOR SMOOTH MANIPULATION AND STRUCTURAL OBSTACLE AVOIDANCE	5127
<i>Jiajie Guo, Wuguang Liu, Kok-Meng Lee</i>	
SELF-STABLE ONE-LEGGED HOPPING USING A CURVED FOOT	5133
<i>Fabian Guenther, Fabio Giardina, Fumiya Iida</i>	
DISCRETE-TIME VELOCITY CONTROL OF REDUNDANT ROBOTS WITH ACCELERATION/TORQUE OPTIMIZATION PROPERTIES	5139
<i>Fabrizio Flacco, Alessandro De Luca</i>	
COORDINATED MOTION CONTROL OF DUAL MANIPULATORS FOR HANDLING A RIGID OBJECT WITH NON-NEGLIGIBLE DEFORMATION	5145
<i>Kazuhiro Kosuge, Kentaro Kamei, Takashi Nammoto</i>	
A GLOBALLY STABILIZING HYBRID CONTROL ALGORITHM FOR MOBILE MANIPULATION SUBJECT TO JOINT-SPACE CONSTRAINTS	5152
<i>Johan Markdahl, Xiaoming Hu</i>	
TIPOVER STABILITY ENHANCEMENT METHOD FOR A TRACKED MOBILE MANIPULATOR	5158
<i>Huatao Zhang, Aiguo Song</i>	
GAUSSIAN PROCESS KERNELS FOR ROTATIONS AND 6D RIGID BODY MOTIONS	5165
<i>Muriel Lang, Oliver Dunkley, Sandra Hirche</i>	
HIERARCHICAL ADAPTIVE PLANNING IN ENVIRONMENTS WITH UNCERTAIN, SPATIALLY-VARYING DISTURBANCE FORCES	5171
<i>Vishnu Desaraju, Nathan Michael</i>	
ADAPTIVE TRAVERSABILITY OF UNKNOWN COMPLEX TERRAIN WITH OBSTACLES FOR MOBILE ROBOTS	5177
<i>Karel Zimmermann, Petr Zuzanek, Michal Reinstein, Vaclav Hlavac</i>	
PREDICTING INITIALIZATION EFFECTIVENESS FOR TRAJECTORY OPTIMIZATION	5183
<i>Jia Pan, Pieter Abbeel, Zhuo Chen</i>	
CALIBRATION OF SCANNING ELECTRON MICROSCOPE USING A MULTI-IMAGES NON-LINEAR MINIMIZATION PROCESS	5191
<i>Le Cui, Eric Marchand</i>	
AUTOMATED ROBOTIC ASSEMBLY FOR A MICRO-CARTRIDGE SYSTEM INSIDE THE SCANNING ELECTRON MICROSCOPE	5197
<i>Malte Bartenwerfer, Claas Diederichs, Sergej Fatikow</i>	
FORCE TRACKING IMPEDANCE CONTROL WITH UNKNOWN ENVIRONMENT AT THE MICROSCALE	5203
<i>Bilal Komati, Cedric Clevy, Philippe Lutz</i>	
CORRELATIVE MICROSCOPY FOR NANOMANIPULATION OF SUB-CELLULAR STRUCTURES	5209
<i>Zheng Gong, Brandon K. Chen, Jun Liu, Chao Zhou, David Anchel, Xiao Li, David Bazett-Jones, Yu Sun</i>	
VISUAL 3D SELF LOCALIZATION WITH 8 GRAM CIRCUIT BOARD FOR VERY COMPACT AND FULLY AUTONOMOUS UNMANNED AERIAL VEHICLES	5215
<i>Ryo Konomura, Koichi Hori</i>	
LOCAL MULTIREOLUTION REPRESENTATION FOR 6D MOTION ESTIMATION AND MAPPING WITH A CONTINUOUSLY ROTATING 3D LASER SCANNER	5221
<i>David Droschel, Sven Behnke</i>	
VISUAL SLAM FOR AUTONOMOUS MAVS WITH DUAL CAMERAS	5227
<i>Shaowu Yang, Sebastian Andreas Scherer, Andreas Zell</i>	
AUTONOMOUS QUADROTOR FLIGHT USING ONBOARD RGB-D VISUAL ODOMETRY	5233
<i>Roberto G. Valenti, Ivan Dryanovski, Carlos Jaramillo, Daniel Perea Strom, Jizhong Xiao</i>	
LEARNING PARAMETERIZED MOTOR SKILLS ON A HUMANOID ROBOT	5239
<i>Bruno Da Silva, Gianluca Baldassarre, George Dimitri Konidaris, Andy Barto</i>	
AN ON-BOARD LEARNING SCHEME FOR OPEN-LOOP QUADROPTER MANEUVERS USING INERTIAL SENSORS AND CONTROL INPUTS FROM AN EXTERNAL PILOT	5245
<i>Robin Ritz, Raffaello D'Andrea</i>	
COMBINING LEARNED CONTROLLERS TO ACHIEVE NEW GOALS BASED ON LINEARLY SOLVABLE MDPS	5252
<i>Eiji Uchibe, Kenji Doya</i>	
LEARNING OF MOTOR SKILLS BASED ON GROSSNESS AND FINENESS OF MOVEMENTS IN DAILY-LIFE TASKS	5260
<i>Sang Hyoung Lee, Nam Jun Cho, Il Hong Suh</i>	
ENSURING PATH TRACKING STABILITY OF MOBILE ROBOT IN HARSH CONDITIONS: AN ADAPTIVE AND PREDICTIVE VELOCITY CONTROL	5268
<i>Jean-Baptiste Braconnier, Roland Lenain, Benoit Thuilot</i>	
AUTONOMOUS DYNAMIC DRIVING CONTROL OF WHEELED MOBILE ROBOTS	5274
<i>Jaemin Yoon, Jong-Hyun Oh, Joo-Hyun Park, Suhwan Kim, Dongjun Lee</i>	
LONGITUDINAL WHEEL-SLIP CONTROL FOR FOUR WHEEL INDEPENDENT STEERING AND DRIVE VEHICLES	5280
<i>Tin Lun Lam, Huihuan Qian, Yangsheng Xu</i>	
BACKSTEPPING VARIABLE STRUCTURE CONTROL OF SLIP-BASED KINEMATICS AND DYNAMICS FOR IMPROVED AGV CORNERING PERFORMANCE	5286
<i>Ming Xin, Mark Minor</i>	

AN AUTONOMOUS ASSISTIVE ROBOT FOR PLANNING, SCHEDULING AND FACILITATING MULTI-USER ACTIVITIES	5292
<i>Wing-Yue Geoffrey Louie, Tiago Vaquero, Goldie Nejat, J. Christopher Beck</i>	
MULTI-USER IDENTIFICATION AND EFFICIENT USER APPROACHING BY FUSING ROBOT AND AMBIENT SENSORS	5299
<i>Ninghang Hu, Richard Bormann, Thomas Zwolfer, Ben Krose</i>	
VISUAL ATTENTION MODEL FOR MANIPULATING HUMAN ATTENTION BY A ROBOT	5307
<i>Yusuke Tamura, Shiro Yano, Hisashi Osumi</i>	
DESIGN AND CONTROL OF A LOW COST 6 DOF MASTER CONTROLLER	5313
<i>Tian Qiu, William R. Hamel, Dongjun Lee</i>	
OPTIMIZATION-BASED TRAJECTORY GENERATION WITH LINEAR TEMPORAL LOGIC SPECIFICATIONS	5319
<i>Eric Wolff, Ufuk Topcu, Richard Murray</i>	
SAMPLING-BASED ALGORITHMS FOR OPTIMAL MOTION PLANNING USING PROCESS ALGEBRA SPECIFICATIONS	5326
<i>Valerio Varricchio, Pratik Chaudhari, Emilio Frazzoli</i>	
SWITCHING CONTROL OF DYNAMICAL SYSTEMS FROM METRIC TEMPORAL LOGIC SPECIFICATIONS	5333
<i>Jun Liu, Pavithra Prabhakar</i>	
REVISION OF SPECIFICATION AUTOMATA UNDER QUANTITATIVE PREFERENCES	5339
<i>Kangjin Kim, Georgios Fainekos</i>	
SIMPLIFYING GRASPING COMPLEXITY THROUGH GENERALIZATION OF KINAESTHETICALLY LEARNED SYNERGIES	5345
<i>Giuseppe Cotugno, Vishwanathan Mohan, Kaspar Althoefer, Thrishantha Nanayakkara</i>	
ON THE USE OF HOMOGENEOUS TRANSFORMATIONS TO MAP HUMAN HAND MOVEMENTS ONTO ROBOTIC HANDS	5352
<i>Gionata Salvietti, Monica Malvezzi, Guido Gioioso, Domenico Prattichizzo</i>	
LEARNING DEXTEROUS GRASPS THAT GENERALISE TO NOVEL OBJECTS BY COMBINING HAND AND CONTACT MODELS	5358
<i>Marek Kopicki, Renaud Detry, Florian Schmidt, Christoph Borst, Rustam Stolkin, Jeremy Wyatt</i>	
THREE-FINGER PRECISION GRASP ON INCOMPLETE 3D POINT CLOUDS	5366
<i>Ilaria Gori, Ugo Pattacini, Vadim Tikhonoff, Giorgio Metta</i>	
OPTIMIZING CURVATURE SENSOR PLACEMENT FOR FAST, ACCURATE SHAPE SENSING OF CONTINUUM ROBOTS	5374
<i>Beobkyoon Kim, Junhyoung Ha, Frank Park, Pierre Dupont</i>	
ROBOTIC ASSISTANCE FOR MANIPULATING A FLEXIBLE ENDOSCOPE	5380
<i>Linan Zhang, Rahul Khare, Emmanuel Wilson, Wang Shuxin, Craig Peters, Kevin Cleary</i>	
SIX DEGREE OF FREEDOM MOTION ESTIMATION FOR TELEOPERATED FLEXIBLE ENDOSCOPES USING OPTICAL FLOW: A COMPARATIVE STUDY	5386
<i>Charreau Bell, Gustavo Armando Puerto-Souza, Gian Luca Mariottini, Pietro Valdastri</i>	
MODULAR CONTINUUM ROBOTIC ENDOSCOPE DESIGN AND PATH PLANNING	5393
<i>Yi Chen, Jiahui Liang, Ian Hunter</i>	
A HIERARCHICAL EXTENSION OF MANIPULATION PRIMITIVES AND ITS INTEGRATION INTO A ROBOT CONTROL ARCHITECTURE	5401
<i>Ingo Weidauer, Daniel Kubus, Friedrich M. Wahl</i>	
DEPLOYMENT OF SWARMS OF MICRO-AERIAL VEHICLES: FROM THEORY TO PRACTICE	5408
<i>Aveek Purohit, Pei Zhang, Brian Sadler, Stefano Carpin</i>	
A HIGHLY PARALLELIZED CONTROL SYSTEM PLATFORM ARCHITECTURE USING MULTICORE CPU AND FPGA FOR MULTI-DOF ROBOTS	5414
<i>Sangok Seok, Dong Jin Hyun, Sangin Park, David Otten, Sangbae Kim</i>	
TOWARDS A UNIFIED BEHAVIOR TREES FRAMEWORK FOR ROBOT CONTROL	5420
<i>Alejandro Marzinotto, Michele Colledanchise, Claes Christian Smith, Petter Ogren</i>	
DYNAMIC VISUAL LOCALIZATION AND TRACKING METHOD BASED ON RGB-D INFORMATION	5428
<i>Chunxia Yin, Cai Luo, Yipeng Li, Qionghai Dai</i>	
ACTIVE STRUCTURE FROM MOTION FOR SPHERICAL AND CYLINDRICAL TARGETS	5434
<i>Riccardo Spica, Paolo Robuffo Giordano, Francois Chaumette</i>	
ROBUST REAL-TIME VISION-BASED AIRCRAFT TRACKING FROM UNMANNED AERIAL VEHICLES	5441
<i>Changhong Fu, Adrian Carrio, Miguel A. Olivares-Mendez, Ramon Antonio Suarez Fernandez, Pascual Campoy</i>	
REAL-TIME HAND TRACKING USING SYNERGISTIC INVERSE KINEMATICS	5447
<i>Matthias Schroder, Jonathan Maycock, Helge Joachim Ritter, Mario Botsch</i>	
ACTIVE CALIBRATION AND ITS APPLICATIONS ON MICRO-OPERATING PLATFORM WITH MULTIPLE MANIPULATORS	5455
<i>Dengpeng Xing, De Xu, Hai Peng Li, Liyan Luo</i>	
PROBABILISTIC STEREO EGOMOTION TRANSFORM	5461
<i>Hugo Silva, Eduardo Alexandre Pereira Da Silva, Alexandre Bernardino</i>	
RGB-D OBJECT CLASSIFICATION USING COVARIANCE DESCRIPTORS	5467
<i>Duc Fehr, William Beksi, Dimitris Zermas, Nikos Papanikolopoulos</i>	
SURFACE-BASED 3D OBJECT DETECTION AND POSE ESTIMATION	5473
<i>Zhou Teng, Jing Xiao</i>	

A HIERARCHICAL APPROACH FOR JOINT MULTI-VIEW OBJECT POSE ESTIMATION AND CATEGORIZATION	5480
<i>Mete Ozay, Krzysztof, Tadeusz Walas, Ales Leonardis</i>	
EFFICIENT INCREMENTAL MAP SEGMENTATION IN DENSE RGB-D MAPS.....	5488
<i>Ross Finman, Thomas Whelan, Michael Kaess, John Leonard</i>	
QUADTREE SAMPLING-BASED SUPERPIXELS FOR 3D RANGE DATA.....	5495
<i>Jae Hyun Park, Sunglok Choi, Wonpil Yu</i>	
EFFICIENT SEGMENTATION AND SURFACE CLASSIFICATION OF RANGE IMAGES.....	5502
<i>Georg Arbeiter, Steffen Fuchs, Joshua Hampp, Richard Bormann</i>	
PASSIVE STABILITY OF A SINGLE ACTUATOR MICRO AERIAL VEHICLE.....	5510
<i>Matthew Piccoli, Mark Yim</i>	
PITCH AND YAW CONTROL OF A ROBOTIC INSECT USING AN ONBOARD MAGNETOMETER	5516
<i>Elizabeth Farrell Helbling, Sawyer Fuller, Robert Wood</i>	
DISCRETE OPTIMAL CONTROL ON LIE GROUPS AND APPLICATIONS TO ROBOTIC VEHICLES.....	5523
<i>Marin Kobilarov</i>	
2-POINT-BASED OUTLIER REJECTION FOR CAMERA-IMU SYSTEMS WITH APPLICATIONS TO MICRO AERIAL VEHICLES	5530
<i>Chiara Troiani, Agostino Martinelli, Christian Laugier, Davide Scaramuzza</i>	
COLLISION-FREE GUIDANCE CONTROL FOR MULTIPLE SMALL HELICOPTERS	5537
<i>Yoshihiko Aida, Satoshi Suzuki, Yohei Fujisawa, Kojiro Hzuka, Takashi Kawamura, Yuichi Ikeda</i>	
DYNAMICS AND CONTROL OF QUADROTOR WITH ROBOTIC MANIPULATOR	5544
<i>Hyunsoo Yang, Dongjun Lee</i>	
OUTDOOR PLACE RECOGNITION IN URBAN ENVIRONMENTS USING STRAIGHT LINES.....	5550
<i>Jin Han Lee, Sehyung Lee, Guoxuan Zhang, Jongwoo Lim, Wan Kyun Chung, Il Hong Suh</i>	
RECOGNITION OF DEFORMABLE OBJECT CATEGORY AND POSE	5558
<i>Yinxiao Li, Chih-Fan Chen, Peter Allen</i>	
SPARSE LEARNING FOR SALIENT FACIAL FEATURE DESCRIPTION	5565
<i>Yue Zhao, Jianbo Su</i>	
CONDITION-INVARIANT, TOP-DOWN VISUAL PLACE RECOGNITION.....	5571
<i>Michael J Milford, Walter Scheirer, Eleonora Vig, Arren Glover, Oliver Baumann, Jason Mattingley, David Cox</i>	
SEMANTIC LABELING OF 3D POINT CLOUDS WITH OBJECT AFFORDANCE FOR ROBOT MANIPULATION.....	5578
<i>David Inkyu Kim, Gaurav Sukhatme</i>	
ACTIVE SCENE RECOGNITION FOR PROGRAMMING BY DEMONSTRATION USING NEXT-BEST-VIEW ESTIMATES FROM HIERARCHICAL IMPLICIT SHAPE MODELS.....	5585
<i>Pascal Meibner, Reno Reckling, Valerij Wittenbeck, Sven R. Schmidt-Rohr, Rudiger Dillmann</i>	
DESIGN PRINCIPLES FOR ROBOT INCLUSIVE SPACES: A CASE STUDY WITH ROOMBA	5592
<i>Rajesh Elara Mohan, Nicolas Rojas, Adrian Chua</i>	
A PROBABILISTIC APPROACH TO HIGH-CONFIDENCE CLEANING GUARANTEES FOR LOW-COST CLEANING ROBOTS.....	5600
<i>Juergen Michael Hess, Maximilian Beinhofer, Wolfram Burgard</i>	
ASSISTANCE CONTROL METHOD FOR ONE-LEG PEDALING MOTION OF A CYCLING WHEELCHAIR	5606
<i>Aya Kaisumi, Yasuhisa Hirata, Kazuhiro Kosuge</i>	
HUMAN BODY TRAJECTORY GENERATION USING POINT CLOUD DATA FOR ROBOTICS MASSAGE APPLICATIONS.....	5612
<i>Ren Luo, Sheng-You Chen, Keng-Cheng Yeh</i>	
DISTANCE BASED DYNAMICAL SYSTEM MODULATION FOR REACTIVE AVOIDANCE OF MOVING OBSTACLES	5618
<i>Matteo Saveriano, Dongheui Lee</i>	
TIMED AUTOMATA BASED MOTION PLANNING FOR A SELF-ASSEMBLY ROBOT SYSTEM	5624
<i>Rui Wang, Luo Ping, Yong Guan, Hongxing Wei, Xiaojuan Li, Jie Zhang, Xiaoyu Song</i>	
MOVING OBJECT DETECTION, TRACKING AND FOLLOWING USING AN OMNIDIRECTIONAL CAMERA ON A MOBILE ROBOT	5630
<i>Ivan Markovic, Francois Chaumette, Ivan Petrovic</i>	
REAL-TIME RGB-D BASED PEOPLE DETECTION AND TRACKING FOR MOBILE ROBOTS AND HEAD-WORN CAMERAS	5636
<i>Omid Hosseini Jafari, Dennis Mitzel, Bastian Leibe</i>	
A FEATURE-BASED APPROACH TO PEOPLE RE-IDENTIFICATION USING SKELETON KEYPOINTS	5644
<i>Matteo Munaro, Stefano Ghidoni, Deniz Tartaro Dizmen, Emanuele Menegatti</i>	
ONLINE MARKER LABELING FOR FULLY AUTOMATIC SKELETON TRACKING IN OPTICAL MOTION CAPTURE.....	5652
<i>Johannes Meyer, Markus Kuderer, Joerg Mueller, Wolfram Burgard</i>	
IMPLEMENTATION OF REAL-TIME MOTION AND FORCE CAPTURING SYSTEM FOR TELE-MANIPULATION BASED ON SEMG SIGNALS AND IMU MOTION DATA	5658
<i>Minkyu Kim, Kwanghyun Ryu, Yonghwan Oh, Sang-Rok Oh, Keehoon Kim</i>	
AN INERTIAL-BASED HUMAN MOTION TRACKING SYSTEM WITH TWISTS AND EXPONENTIAL MAPS.....	5665
<i>Xi Chen, Jie Zhang, William R. Hamel, Jindong Tan</i>	

ACTIVE LEARNING OF MANIPULATION SEQUENCES	5671
<i>David Martinez, Guillem Alenya, Pablo Jimenez, Carme Torras, Juergen Rossmann, Nils Wantia, Eren Erdal Aksoy, Simon Haller, Justus Piater</i>	
INDEPENDENT JOINT LEARNING: A NOVEL TASK-TO-TASK TRANSFER LEARNING SCHEME FOR ROBOT MODELS	5679
<i>Terry Taewoong Um, Myoung Soo Park, Jung-Min Park</i>	
PROBABILISTIC RELATIONAL SCENE REPRESENTATION AND DECISION MAKING UNDER INCOMPLETE INFORMATION FOR ROBOTIC MANIPULATION TASKS	5685
<i>Rasoul Mojtahedzadeh, Abdelbaki Bouguerra, Erik Schaffernicht, Achim J. Lilienthal</i>	
LEARNING RELATIONAL OBJECT CATEGORIES USING BEHAVIORAL EXPLORATION AND MULTIMODAL PERCEPTION	5691
<i>Jivko Sinapov, Connor Schenck, Alexander Stoytchev</i>	
REPRESENTATIONS FOR CROSS-TASK, CROSS-OBJECT GRASP TRANSFER	5699
<i>Martin Hjelm, Renaud Detry, Carl Henrik Ek, Danica Kragic</i>	
AN HYPERREALITY IMAGINATION BASED REASONING AND EVALUATION SYSTEM (HIRES)	5705
<i>Sebastian Rockel, Denis Klimentjew, Liwei Zhang, Jianwei Zhang</i>	
A NOVEL (3T-2R) PARALLEL MECHANISM WITH LARGE OPERATIONAL WORKSPACE AND ROTATIONAL CAPABILITY	5712
<i>Samah Shayya, Sebastien Krut, Olivier Company, Cedric Baradat, Francois Pierrot</i>	
A METHOD FOR SIMPLIFYING THE ANALYSIS OF LEG-BASED VISUAL SERVOING OF PARALLEL ROBOTS	5720
<i>Victor Rosenzweig, Sebastien Briot, Philippe Martinet, Erol Ozgur, Nicolas Bouton</i>	
ON THE ANALYSIS OF LARGE-DIMENSION RECONFIGURABLE SUSPENDED CABLE-DRIVEN PARALLEL ROBOTS	5728
<i>Dinh Quan Nguyen, Marc Gouttefarde, Olivier Company, Francois Pierrot</i>	
ANALYSIS OF THE INVERSE KINEMATICS PROBLEM FOR 3-DOF AXIS-SYMMETRIC PARALLEL MANIPULATORS WITH PARASITIC MOTION	5736
<i>Mats Isaksson, Anders Eriksson, Saeid Nahavandi</i>	
OPTIMAL DESIGN OF CABLE-DRIVEN PARALLEL ROBOTS FOR LARGE INDUSTRIAL STRUCTURES	5744
<i>Lorenzo Gagliardini, Stephane Caro, Marc Gouttefarde, Philippe Wenger, Alexis Girin</i>	
DIGITAL HARDWARE IMPLEMENTATION OF AN ACTIVE DISTURBANCE REJECTION CONTROLLER FOR A HIGHLY DYNAMIC PARALLEL ORIENTATION MANIPULATOR	5750
<i>Taufiqur Rahman, Dion Hicks, Mohammed Raju Hossain, Nicholas Krouglicof</i>	
PERSISTENT MONITORING OF EVENTS WITH STOCHASTIC ARRIVALS AT MULTIPLE STATIONS	5758
<i>Jingjin Yu, Sertac Karaman, Daniela Rus</i>	
A COMPETITIVE ONLINE ALGORITHM FOR EXPLORING A SOLAR MAP	5766
<i>Patrick Plonski, Volkan Isler</i>	
A LANGUAGE FOR ROBOT PATH PLANNING IN DISCRETE ENVIRONMENTS: THE TSP WITH BOOLEAN SATISFIABILITY CONSTRAINTS	5772
<i>Frank Imeson, Stephen L. Smith</i>	
LONG-TERM EXPLORATION & TOURS FOR ENERGY CONSTRAINED ROBOTS WITH ONLINE PROPRIOCEPTIVE TRAVERSABILITY ESTIMATION	5778
<i>Steven Colin Martin, Peter Corke</i>	
ONLINE PICKUP AND DELIVERY PLANNING WITH TRANSFERS FOR MOBILE ROBOTS	5786
<i>Brian Coltin, Manuela Veloso</i>	
MULTI-AGENT RENDEZVOUS ON STREET NETWORKS	5792
<i>Malika Meghjani, Gregory Dudek</i>	
UMAPRM: UNIFORMLY SAMPLING THE MEDIAL AXIS	5798
<i>Hsin-Yi (Cindy) Yeh, Jory Denny, Aaron Lindsey, Shawna Thomas, Nancy Amato</i>	
CACHE-AWARE ASYMPTOTICALLY-OPTIMAL SAMPLING-BASED MOTION PLANNING	5804
<i>Jeffrey Ichnowski, Jan Prins, Ron Alterovitz</i>	
MOTION PLANNING FOR PARAMAGNETIC MICROPARTICLES UNDER MOTION AND SENSING UNCERTAINTY	5811
<i>Wen Sun, Islam S. M. Khalil, Sarthak Misra, Ron Alterovitz</i>	
COMPLETENESS OF RANDOMIZED KINODYNAMIC PLANNERS WITH STATE-BASED STEERING	5818
<i>Stephane Caron, Yoshihiko Nakamura, Quang-Cuong Pham</i>	
OPTIMAL SNAPPING OF ODOMETRY TRAJECTORIES FOR ROUTE IDENTIFICATION	5824
<i>Richard Wang, Manuela Veloso, Srinivasan Seshan</i>	
SINGLE ROBOT SEARCH FOR A STATIONARY OBJECT IN AN UNKNOWN ENVIRONMENT	5830
<i>Miroslav Kulich, Libor Preucil, Juan Chose Miranda Bront</i>	
FLUIDIC SELF-ASSEMBLY OF MULTILAYERED TUBULAR MICROSTRUCTURES BY AXIS TRANSLATION INSIDE TWO-LAYERED MICROFLUIDIC DEVICES	5836
<i>Tao Yue, Masahiro Nakajima, Masaru Takeuchi, Qiang Huang, Toshio Fukuda</i>	
DEVELOPMENT OF LOCAL ENVIRONMENTAL CONTROL SYSTEM BY COMBINATION OF MICROFLUIDIC CHIP AND PIPETTE	5842
<i>Kousuke Nogawa, Fumihito Arai</i>	
RAPID VISION-BASED SHAPE AND MOTION ANALYSIS SYSTEM FOR FAST-FLOWING CELLS IN A MICROCHANNEL	5848
<i>Qingyi Gu, Tadayoshi Aoyama, Takeshi Takaki, Idaku Ishii</i>	

DESIGN AND IMPLEMENTATION OF AN ILLUMINATION SYSTEM FOR MICROROBOTIC PAPER FIBER STUDIES	5854
<i>Juha Robert Hirvonen, Antti Hamminen, Pasi Johannes Kallio</i>	
AUTOMATED REAL-TIME CONTROL OF FLUIDIC SELF-ASSEMBLY OF MICROPARTICLES	5860
<i>Massimo Mastrangeli, Felix Schill, Jonas Goldowsky, Helmut Knapp, Juergen Brugger, Alcherio Martinoli</i>	
REGULATING THE MECHANICAL PROPERTIES OF CELLS USING A NON-UV LIGHT-ADDRESSABLE HYDROGEL PATTERNING PROCESS	5866
<i>Na Liu, Changlin Zhang, Lianqing Liu, Yuechao Wang, Gwo-Bin Lee, Wen J. Li</i>	
TOWARD A SOLUTION TO A SNAPPING PROBLEM IN CONCENTRIC-TUBE CONTINUUM ROBOT: GROOVED TUBES WITH ANISOTROPY	5871
<i>Ji-Suk Kim, Dae-Young Lee, Keri Kim, Sungchul Kang, Kyu-Jin Cho</i>	
TASK-SPACE POSITION CONTROL OF CONCENTRIC-TUBE ROBOT WITH INACCURATE KINEMATICS USING APPROXIMATE JACOBIAN	5877
<i>Mohamed Nassim Boushaki, Chao Liu, Philippe Pognet</i>	
DESIGN AND EVALUATION OF DUTY-CYCLING STEERING ALGORITHMS FOR ROBOTICALLY-DRIVEN STEERABLE NEEDLES	5883
<i>Ann Majewicz, Joshua Siegel, Andrew A. Stanley, Allison M. Okamura</i>	
PLANNING LOCALLY OPTIMAL, CURVATURE-CONSTRAINED TRAJECTORIES IN 3D USING SEQUENTIAL CONVEX OPTIMIZATION	5889
<i>Yan Duan, Sachin Patil, John Schulman, Ken Goldberg, Pieter Abbeel</i>	
ACCURATE IN-PLANE AND OUT-OF-PLANE ULTRASOUND-BASED TRACKING OF THE DISCRETELY ACTUATED STEERABLE CANNULA	5896
<i>Elif Ayvali, Jaydev P. Desai</i>	
AN EXPERTISE-ORIENTED TRAINING FRAMEWORK FOR ROBOTICS-ASSISTED SURGERY	5902
<i>Mahya Shahbazi, Seyed Farokh Atashzar, Ali Talebi, Rajnikant V. Patel</i>	
SET-POINT CONTROL OF A MUSCULOSKELETAL ARM BY THE COMPLEMENTARY COMBINATION OF A FEEDFORWARD AND FEEDBACK MANNER	5908
<i>Yuki Matsutani, Kenji Tahara, Hitoshi Kino, Hiroaki Ochi, Motoji Yamamoto</i>	
DEVELOPMENT OF A COUPLED TENDON-DRIVEN 3D MULTI-JOINT MANIPULATOR	5915
<i>Atsushi Horigome, Hiroya Yamada, Gen Endo, Shin Sen, Shigeo Hirose, Edwardo F. Fukushima</i>	
SYSTEM IDENTIFICATION AND CABLE FORCE CONTROL FOR A CABLE-DRIVEN PARALLEL ROBOT WITH INDUSTRIAL SERVO DRIVES	5921
<i>Werner Kraus, Valentin Schmidt, Puneeth Rajendra, Andreas Pott</i>	
EXPERIMENTAL CHARACTERIZATION OF BOWDEN CABLE FRICTION	5927
<i>Dongyang Chen, Youngmok Yun, Ashish Deshpande</i>	
STIFFNESS MODULATION EXPLOITING CONFIGURATION REDUNDANCY IN MOBILE CABLE ROBOTS	5934
<i>Xiaobo Zhou, Seung-Kook Jun, Venkat Krovi</i>	
BEHAVIOR ESTIMATION FOR A COMPLETE FRAMEWORK FOR HUMAN MOTION PREDICTION IN CROWDED ENVIRONMENTS	5940
<i>Gonzalo Ferrer, Alberto Sanfeliu</i>	
STABILITY AND TRANSPARENCY ANALYSIS OF A TELEOPERATION CHAIN FOR MICROSCALE INTERACTION	5946
<i>Abdenbi Mohand Ousaid, Aude Bolopion, Dogan Sinan Haliyo, Stephane Regnier, Vincent Hayward</i>	
TIME-DELAYED TELEOPERATION FOR INTERACTION WITH MOVING OBJECTS IN SPACE	5952
<i>Ryder Winck, Sean Sketch, Elliot Wright Hawkes, David Christensen, Hao Jiang, Mark Cutkosky, Allison M. Okamura</i>	
PRELIMINARY EXPERIMENTS OF KINESTHETIC EXPLORATION IN A 6 DOF TELEOPERATION SYSTEM	5959
<i>Tian Qiu, William R. Hamel, Dongjun Lee</i>	
EVALUATION OF A METHOD FOR INTUITIVE TELEMANIPULATION BASED ON VIEW-DEPENDENT MAPPING AND INHIBITION OF MOVEMENTS	5965
<i>Simon Notheis, Bjorn Hein, Heinz Woern</i>	

VOLUME 8

AN AUTONOMOUS MULTI-CAMERA CONTROL SYSTEM USING SITUATION-BASED ROLE ASSIGNMENT FOR TELE-OPERATED WORK MACHINES	5971
<i>Mitsuhiro Kamezaki, Junjie Yang, Hiroyasu Iwata, Shigeki Sugano</i>	
AUTO-PARAMETRIC RESONANCE IN CABLE-ACTUATED SYSTEMS	5977
<i>Jayender Bhardhwaj, Bin Yao, Arvind Raman</i>	
A NEW METHOD FOR PARAMETER IDENTIFICATION FOR N-DOF HYDRAULIC ROBOTS	5983
<i>Satoru Sakai, Yuzo Maeshima</i>	
ROBOT-DYNAMIC CALIBRATION IMPROVEMENT BY LOCAL IDENTIFICATION	5990
<i>Nicola Pedrocchi, Enrico Villagrossi, Federico Vicentini, Lorenzo Molinari Tosatti</i>	
ONLINE PARAMETER ESTIMATION VIA REAL-TIME REPLANNING OF CONTINUOUS GAUSSIAN POMDPS	5998
<i>Dustin Webb, Kyle Crandall, Jur Van Den Berg</i>	
EXPERIMENTAL FRICTION IDENTIFICATION IN ROBOT DRIVE MODULES	6006
<i>Joerg Baur, Sebastian Dendorfer, Julian Pfaff, Christoph Schutz, Thomas Buschmann, Heinz Ulbrich</i>	

DYNAMICS MODELING AND IDENTIFICATION OF THE HUMAN-ROBOT INTERFACE BASED ON A LOWER LIMB REHABILITATION ROBOT	6012
<i>Weiqun Wang, Zeng-Guang Hou, Lina Tong, Yixiong Chen, Liang Peng, Min Tan</i>	
INVERSE OPTIMAL CONTROL FOR DIFFERENTIALLY FLAT SYSTEMS WITH APPLICATION TO LOCOMOTION MODELING	6018
<i>Navid Aghasadeghi, Timothy Bretl</i>	
INTUITIVE ROBOT TASKS WITH AUGMENTED REALITY AND VIRTUAL OBSTACLES	6026
<i>Andre K. Gaschler, Maximilian Springer, Markus Rickert, Alois Knoll</i>	
CROWDSOURCED SALIENCY FOR MINING ROBOTICALLY GATHERED 3D MAPS USING MULTITOUCH INTERACTION ON SMARTPHONES AND TABLETS	6032
<i>Matthew Johnson-Roberson, Mitch Bryson, Bertrand Douillard, Oscar Pizarro, Stefan Bernard Williams</i>	
BMI-BASED FRAMEWORK FOR TEACHING AND EVALUATING ROBOT SKILLS	6040
<i>Christian Isaac Penaloza, Yasushi Mae, Masaru Kojima, Tatsuo Arai</i>	
NEGLECT BENEVOLENCE IN HUMAN CONTROL OF ROBOTIC SWARMS	6047
<i>Sasanka Nagavalli, Lingzhi Luo, Nilanjan Chakraborty, Katia Sycara</i>	
CONVEX AND ANALYTICALLY-INVERTIBLE DYNAMICS WITH CONTACTS AND CONSTRAINTS: THEORY AND IMPLEMENTATION IN MUJOCO	6054
<i>Emanuel Todorov</i>	
LEARNING PEDESTRIAN ACTIVITIES FOR SEMANTIC MAPPING	6062
<i>Baoxing Qin, Zhuang Jie Chong, Tirthankar Bandyopadhyay, Marcelo H Ang Jr, Emilio Frazzoli, Daniela Rus</i>	
OPTIMIZING ONLINE OCCUPANCY GRID MAPPING TO CAPTURE THE RESIDUAL UNCERTAINTY	6070
<i>Rehman Merali, Timothy Barfoot</i>	
EXPLORATION ON CONTINUOUS GAUSSIAN PROCESS FRONTIER MAPS	6077
<i>Maani Ghaffari Jadidi, Jaime Valls Miro, Rafael Valencia, Juan Andrade-Cetto</i>	
DENSE ENTROPY DECREASE ESTIMATION FOR MOBILE ROBOT EXPLORATION	6083
<i>Joan Vallve, Juan Andrade-Cetto</i>	
GRID-BASED MAPPING AND TRACKING IN DYNAMIC ENVIRONMENTS USING A UNIFORM EVIDENTIAL ENVIRONMENT REPRESENTATION	6090
<i>Georg Tanzmeister, Julian Thomas, Dirk Wollherr, Martin Buss</i>	
CONTINUOUS TRAJECTORY ESTIMATION FOR 3D SLAM FROM ACTUATED LIDAR	6096
<i>Hatem Alismail, L. Douglas Baker, Brett Browning</i>	
ROBUST AND EFFICIENT VOLUMETRIC OCCUPANCY MAPPING WITH AN APPLICATION TO STEREO VISION	6102
<i>Konstantin Schauwecker, Andreas Zell</i>	
QUARTIC BEZIER CURVE BASED TRAJECTORY GENERATION FOR AUTONOMOUS VEHICLES WITH CURVATURE AND VELOCITY CONSTRAINTS	6108
<i>Cheng Chen, Yuqing He, Jianda Han, Xuebo Zhang, Chunguang Bu</i>	
HIGH-SPEED AUTONOMOUS NAVIGATION OF UNKNOWN ENVIRONMENTS USING LEARNED PROBABILITIES OF COLLISION	6114
<i>Charles Richter, John Ware, Nicholas Roy</i>	
ROBUST BELIEF ROADMAP: PLANNING UNDER UNCERTAIN AND INTERMITTENT SENSING	6122
<i>Shaunak D. Bopardikar, Brendan Englot, Alberto Speranzon</i>	
COMPUTING CELL-BASED DECOMPOSITIONS DYNAMICALLY FOR PLANNING MOTIONS OF TETHERED ROBOTS	6130
<i>Reza Hosseini Teshnizi, Dylan Shell</i>	
BAYESIAN OPTIMISATION FOR INFORMATIVE CONTINUOUS PATH PLANNING	6136
<i>Roman Marchant, Fabio Ramos</i>	
HIERARCHICAL TRAFFIC CONTROL FOR PARTIALLY DECENTRALIZED COORDINATION OF MULTI AGV SYSTEMS IN INDUSTRIAL ENVIRONMENTS	6144
<i>Valerio Digani, Lorenzo Sabattini, Cristian Secchi, Cesare Fantuzzi</i>	
EXPERIMENTAL EVALUATION OF ADHESIVE TECHNOLOGIES FOR ROBOTIC GRIPPERS ON MICRO-ROUGH SURFACES	6150
<i>Donald Ruffatto III, Dzenis Beganovic, Aaron Parness, Matthew Spenko</i>	
DESIGN AND CONTROL OF A ROBOTIC WRIST WITH TWO COLLOCATED AXES OF COMPLIANT ACTUATION	6156
<i>Cheng-Yu Chu, Jia-You Xu, Chao-Chieh Lan</i>	
POSITION/ATTITUDE CONTROL OF AN OBJECT BY CONTROLLING A FLUID FIELD USING A GRID PATTERN AIR NOZZLE	6162
<i>Takeshi Takaki, Satomi Tanaka, Tadayoshi Aoyama, Idaku Ishii</i>	
A PASSIVELY SAFE AND GRAVITY-COUNTERBALANCED ANTHROPOMORPHIC ROBOT ARM	6168
<i>John Whitney, Jessica Hodgins</i>	
A NEW CONSTANT PUSHING FORCE DEVICE FOR HUMAN WALKING ANALYSIS	6174
<i>Basilio Lenz, Damiano Zanotto, Vineet Vashista, Antonio Frisoli, Sumil Agrawal</i>	
MINIATURE SIX-CHANNEL RANGE AND BEARING SYSTEM: ALGORITHM, ANALYSIS AND EXPERIMENTAL VALIDATION	6180
<i>Nicholas Farrow, John Klingner, Dustin Reishus, Nikolaus Correll</i>	
IMPROVING MOMENTS-BASED VISUAL SERVOING WITH TUNABLE VISUAL FEATURES	6186
<i>Manikandan Bakthavatchalam, Omar Tahri, Francois Chaumette</i>	
ACTIVE SENSING FOR DYNAMIC, NON-HOLONOMIC, ROBUST VISUAL SERVOING	6192
<i>Avik De, Karl S. Bayer, Daniel Koditschek</i>	

ADAPTIVE IMAGE-BASED VISUAL SERVOING OF WHEELED MOBILE ROBOTS WITH FIXED CAMERA CONFIGURATION	6199
<i>Xinwu Liang, Hesheng Wang, Weidong Chen</i>	
VISION-BASED MOTION CONTROL OF A FLEXIBLE ROBOT FOR SURGICAL APPLICATIONS	6205
<i>Alessandro Vandini, Antonino Salerno, Christopher Payne, Guang-Zhong Yang</i>	
REAL-TIME ACCURATE BALL TRAJECTORY ESTIMATION WITH "ASYNCHRONOUS" STEREO CAMERA SYSTEM FOR HUMANOID PING-PONG ROBOT	6212
<i>Qi Xie, Yong Liu, Rong Xiong, Jian Chu</i>	
FAST PLANE EXTRACTION IN ORGANIZED POINT CLOUDS USING AGGLOMERATIVE HIERARCHICAL CLUSTERING	6218
<i>Chen Feng, Yuichi Taguchi, Vineet Kamat</i>	
IDENTIFYING SUPPORT SURFACES OF CLIMBABLE STRUCTURES FROM 3D POINT CLOUDS	6226
<i>Anna Eilerling, Victor Yap, Jeffrey Johnson, Kris Hauser</i>	
LEARNING DEPTH-SENSITIVE CONDITIONAL RANDOM FIELDS FOR SEMANTIC SEGMENTATION OF RGB-D IMAGES	6232
<i>Andreas Christian Mueller, Sven Behnke</i>	
HIERARCHICAL SPARSE CODED SURFACE MODELS	6238
<i>Michael Ruhnke, Liefeng Bo, Dieter Fox, Wolfram Burgard</i>	
UNSUPERVISED INTRINSIC AND EXTRINSIC CALIBRATION OF A CAMERA-DEPTH SENSOR COUPLE	6244
<i>Filippo Basso, Alberto Pretto, Emanuele Menegatti</i>	
HOVERING OF MAV BY USING MAGNETIC ADHESION AND WINCH MECHANISMS	6250
<i>Kazuaki Yanagimura, Kazumori Ohno, Yoshito Okada, Eijiro Takeuchi, Satoshi Tadokoro</i>	
RESHAPING THE PHYSICAL PROPERTIES OF A QUADROTOR THROUGH IDA-PBC AND ITS APPLICATION TO AERIAL PHYSICAL INTERACTION	6258
<i>Burak Yuksel, Cristian Secchi, Heinrich H. Buelthoff, Antonio Franchi</i>	
PARAMETRIC DESIGN AND OPTIMIZATION OF MULTI-ROTOR AERIAL VEHICLES	6266
<i>Christos Ampatis, Evangelos Papadopoulos</i>	
A HYBRID FEEDBACK CONTROLLER FOR ROBUST GLOBAL TRAJECTORY TRACKING OF QUADROTOR-LIKE VEHICLES WITH MINIMIZED ATTITUDE ERROR	6272
<i>Pedro Casau, Ricardo Sanfelice, Rita Cunha, David Cabecinhas, Carlos Silvestre</i>	
TURNING A NEAR-HOVERING CONTROLLED QUADROTOR INTO A 3D FORCE EFFECTOR	6278
<i>Guido Gioioso, Markus Ryll, Domenico Prattichizzo, Heinrich H. Buelthoff, Antonio Franchi</i>	
SOUND REPRESENTATION AND CLASSIFICATION BENCHMARK FOR DOMESTIC ROBOTS	6285
<i>Maxime Janvier, Xavier Alameda-Pineda, Laurent Girin, Radu Horaud</i>	
EGO-MOTION NOISE SUPPRESSION FOR ROBOTS BASED ON SEMI-BLIND INFINITE NON-NEGATIVE MATRIX FACTORIZATION	6293
<i>Taiki Tezuka, Takami Yoshida, Kazuhiro Nakadai</i>	
DISCRIMINATIVE DICTIONARY LEARNING VIA SHARED LATENT STRUCTURE FOR OBJECT RECOGNITION AND ACTIVITY RECOGNITION	6299
<i>Hongcheng Wang, Hongbo Zhou, Alan Finn</i>	
FUZZY SEGMENTATION AND RECOGNITION OF CONTINUOUS HUMAN ACTIVITIES	6305
<i>Hao Zhang, Wenjun Zhou, Lynne Parker</i>	
AUTOMATED ASSEMBLY SKILL ACQUISITION THROUGH HUMAN DEMONSTRATION	6313
<i>Ye Gu, Weihua Sheng, Yongsheng Ou</i>	
PLANAR FABRICATION OF A MESOSCALE VOICE COIL ACTUATOR	6319
<i>Benjamin Goldberg, Michael Karpelson, Onur Ozcan, Robert Wood</i>	
HARMONIC PZT POLY-ACTUATORS	6326
<i>James Torres, Lluís Penalver-Aguila, Harry Asada</i>	
POUCH MOTORS: PRINTABLE/INFLATABLE SOFT ACTUATORS FOR ROBOTICS	6332
<i>Ryuma Niiyama, Daniela Rus, Sangbae Kim</i>	
THE DEVELOPMENT OF AN INNOVATIVE TWO-DOF CYLINDRICAL DRIVE: DESIGN, ANALYSIS AND PRELIMINARY TESTS	6338
<i>Takashi Harada, Thomas Friedlaender, Jorge Angeles</i>	
OPTIMIZATION OF PARALLEL SPRING ANTAGONISTS FOR NITINOL SHAPE MEMORY ALLOY ACTUATORS	6345
<i>John Swensen, Aaron Dollar</i>	
GUIDANCE FOR HUMAN NAVIGATION USING A VIBRO-TACTILE BELT INTERFACE AND ROBOT-LIKE MOTION PLANNING	6350
<i>Akansel Cosgun, Emrah Akin Sisbot, Henrik Iskov Christensen</i>	
DESCENDING STAIRS LOCOMOTION AND SOMATOSENSORY CONTROL FOR AN ERECT WHEEL-LEGGED SERVICE ROBOT	6356
<i>Ren Luo, Ming Hsiao, Che-Wei Liu</i>	
ROBOT ASSISTED GAS TOMOGRAPHY - LOCALIZING METHANE LEAKS IN OUTDOOR ENVIRONMENTS	6362
<i>Victor Manuel Hernandez Bennets, Erik Schaffernicht, Todor Stoyanov, Achim J. Lilienthal, Marco Trincavelli</i>	
DEVELOPMENT OF INTELLIGENT AUTOMATIC DOOR SYSTEM	6368
<i>Daiki Nishida, Kumiko Tsuzura, Shunsuke Kudoh, Kazuo Takai, Tatsuhiro Momodori, Norihiro Asada, Toshihiro Mori, Takashi Suehiro, Tetsuo Tomizawa</i>	
DELIVERING ELECTRICITY TO HOME APPLIANCES BY MOBILE ROBOTS	6375
<i>Kentarō Ishii, Youichi Kamiyama, Wirawit Chaochaisit, Masahiko Inami, Takeo Igarashi</i>	

TORQUE ESTIMATION OF ROBOT JOINT WITH HARMONIC DRIVE TRANSMISSION USING A REDUNDANT ADAPTIVE ROBUST KALMAN FILTER	6382
<i>Guangjun Liu, Zhiguo Shi</i>	
A THREE-AXIAL BODY FORCE SENSOR FOR FLEXIBLE MANIPULATORS.....	6388
<i>Yohan Noh, Sina Sareh, Jungwhan Back, Helge Arne Wurdemann, Tommaso Ranzani, Emanuele Lindo Secco, Angela Faragasso, Hongbin Liu, Kaspar Althoefer</i>	
LIMITS TO COMPLIANCE AND THE ROLE OF TACTILE SENSING IN GRASPING.....	6394
<i>Leif P. Jentoft, Qian Wan, Robert D. Howe</i>	
BIMANUAL COMPLIANT TACTILE EXPLORATION FOR GRASPING UNKNOWN OBJECTS	6400
<i>Nicolas Sommer, Miao Li, Aude Billard</i>	
A NEW FORCE/TORQUE SENSOR FOR ROBOTIC APPLICATIONS BASED ON OPTOELECTRONIC COMPONENTS	6408
<i>Claudio Melchiorri, Lorenzo Moriello, Gianluca Palli, Umberto Scarcia</i>	
MODELING AND REUSING ROBOTIC SOFTWARE ARCHITECTURES: THE HYPERFLEX TOOLCHAIN	6414
<i>Luca Gherardi, Davide Brugali</i>	
SKINWARE: A REAL-TIME MIDDLEWARE FOR ACQUISITION OF TACTILE DATA FROM LARGE SCALE ROBOTIC SKINS.....	6421
<i>Shahbaz Yousefi, Simone Denei, Fulvio Mastrogianni, Giorgio Cannata</i>	
THE HARDWARE ABSTRACTION LAYER - SUPPORTING CONTROL DESIGN BY TACKLING THE COMPLEXITY OF HUMANOID ROBOT HARDWARE.....	6427
<i>Stefan Joerg, Jan Tully, Alin Albu-Schaffer</i>	
AN OPEN-SOURCE RESEARCH KIT FOR THE DA VINCI SURGICAL SYSTEM	6434
<i>Peter Kazanzides, Zihan Chen, Anton Deguet, Gregory Scott Fischer, Russell H. Taylor, Simon P. Dimaio</i>	
TRIANGULATION TOOLBOX: OPEN-SOURCE ALGORITHMS AND BENCHMARKS FOR LANDMARK-BASED LOCALIZATION	6440
<i>Sunglok Choi</i>	
INFORMATION ACQUISITION WITH SENSING ROBOTS: ALGORITHMS AND ERROR BOUNDS.....	6447
<i>Nikolay Atanasov, Jerome Le Ny, Kostas Daniilidis, George J. Pappas</i>	
APPEARANCE-BASED MOTION STRATEGIES FOR OBJECT DETECTION.....	6455
<i>Israel Becerra, Luis Manuel Valentin-Coronado, Rafael Murrieta-Cid, Jean-Claude Latombe</i>	
ONLINE GENERATION OF HOMOTOPICALLY DISTINCT NAVIGATION PATHS	6462
<i>Markus Kuderer, Christoph Sprunk, Henrik Kretzschmar, Wolfram Burgard</i>	
SEMI-AUTONOMOUS TRAJECTORY GENERATION FOR MOBILE ROBOTS WITH INTEGRAL HAPTIC SHARED CONTROL	6468
<i>Carlo Masone, Paolo Robuffo Giordano, Heinrich H. Buelthoff, Antonio Franchi</i>	
PATH PLANNING WITH FORCE-BASED FOOTHOLD ADAPTATION AND VIRTUAL MODEL CONTROL FOR TORQUE CONTROLLED QUADRUPEL ROBOTS	6476
<i>Alexander Winkler, Ioannis Havoutis, Stephane Bazeille, Jesus Ortiz, Michele Focchi, Rudiger Dillmann, Darwin G. Caldwell, Claudio Semini</i>	
GAUSSIAN BELIEF SPACE PLANNING WITH DISCONTINUITIES IN SENSING DOMAINS	6483
<i>Sachin Patil, Yan Duan, John Schulman, Ken Goldberg, Pieter Abbeel</i>	
PROT: PRODUCTIVE REGIONS ORIENTED TASK SPACE PATH PLANNING FOR HYPER-REDUNDANT MANIPULATORS	6491
<i>Junghwan Lee, Sung-Eui Yoon</i>	
SPACE-TIME FUNCTIONAL GRADIENT OPTIMIZATION FOR MOTION PLANNING	6499
<i>Arunkumar Byravan, Byron Boots, Siddhartha Srinivasa, Dieter Fox</i>	
TRAJECTORY PLANNING UNDER DIFFERENT INITIAL CONDITIONS FOR SURGICAL TASK AUTOMATION BY LEARNING FROM DEMONSTRATION	6507
<i>Takayuki Osa, Kanako Harada, Naohiko Sugita, Mamoru Mitsuishi</i>	
SAMPLING BASED MOTION PLANNING WITH REACHABLE VOLUMES PART 1: THEORETICAL FOUNDATIONS.....	6514
<i>Troy McMahon, Shawna Thomas, Nancy Amato</i>	
ONLINE DISCOVERY OF AUV CONTROL POLICIES TO OVERCOME THRUSTER FAILURES	6522
<i>Seyed Reza Ahmadzadeh, Matteo Leonetti, Arnau Carrera, Marc Carreras, Petar Kormushev, Darwin G. Caldwell</i>	
MOTION CONTROL FOR AUTONOMOUS UNDERWATER VEHICLES: A ROBUST MODEL - FREE APPROACH.....	6529
<i>George Karras, Charalampos Bechlioulis, Sharad Nagappa, Narcis Palomeras, Kostas Kyriakopoulos, Marc Carreras</i>	
AUV MISSION CONTROL VIA TEMPORAL PLANNING	6535
<i>Michael Cashmore, Maria Fox, Tom Larkworthy, Derek Long, Daniele Magazzeni</i>	
ROBOT-OBJECT CONTACT PERCEPTION USING SYMBOLIC TEMPORAL PATTERN LEARNING	6542
<i>Navid Jamali, Petar Kormushev, Darwin G. Caldwell</i>	
IMPROVING UNDERWATER VEHICLE NAVIGATION STATE ESTIMATION USING LOCALLY WEIGHTED PROJECTION REGRESSION.....	6549
<i>Georgios Fagogenis, David Flynn, David Lane</i>	
ENERGY EFFICIENT UAS FLIGHT PLANNING FOR CHARACTERIZING FEATURES OF SUPERCELL THUNDERSTORMS	6555
<i>Jack Elston, Brian Argrow</i>	
THREE DIMENSIONAL TRAJECTORY PLANNER FOR REAL TIME LEADER FOLLOWING	6561
<i>Pedro Pereira, David Cabecinhas, Rita Cunha, Carlos Silvestre, Paulo Oliveira</i>	

VECTOR FIELD FOLLOWING FOR QUADROTORS USING DIFFERENTIAL FLATNESS	6567
<i>Dingjiang Zhou, Mac Schwager</i>	
NONMYOPIIC PLANNING FOR LONG-TERM INFORMATION GATHERING WITH AN AERIAL GLIDER	6573
<i>Joseph Luan Nguyen, Nicholas Robert Jonathon Lawrance, Salah Sukkarieh</i>	
SHORTEST PATHS THROUGH 3-DIMENSIONAL CLUTTERED ENVIRONMENTS	6579
<i>Jun Lu, Yancy Diaz-Mercado, Magnus Egerstedt, Haomin Zhou, Shui-Nee Chow</i>	
COVERAGE PATH PLANNING WITH REALTIME REPLANNING FOR INSPECTION OF 3D UNDERWATER STRUCTURES	6586
<i>Enric Galceran, Ricard Campos, Narcis Palomeras, Marc Carreras, Pere Ridao</i>	
AREA COVERAGE PLANNING THAT ACCOUNTS FOR POSE UNCERTAINTY WITH AN AUV SEABED SURVEYING APPLICATION	6592
<i>Liam Paull, Mae Seto, Howard Li</i>	
TRAJECTORY LEARNING FOR HUMAN-ROBOT SCIENTIFIC DATA COLLECTION	6600
<i>Geoffrey Hollinger, Gaurav Sukhatme</i>	
COORDINATING UAVS AND AUVS FOR OCEANOGRAPHIC FIELD EXPERIMENTS: CHALLENGES AND LESSONS LEARNED	6606
<i>Margarida Faria, Jose Pinto, Frederic Py, Joao Fortuna, Hugo Dias, Ricardo Martins, Frederik Leira, Tor Arne Johansen, Joao Sousa, Kanna Rajan</i>	
EFFECT OF NORMAL FORCE DISPERSION ON THE MOBILITY OF WHEELED ROBOTS OPERATING ON SOFT SOIL	6612
<i>Bahareh Ghotbi, Francisco Gonzalez, Jozsef Kovacs, Jorge Angeles</i>	
A DYNAMICAL CHARACTERIZATION OF INTERNALLY-ACTUATED MICROGRAVITY MOBILITY SYSTEMS	6618
<i>Adam W. Koenig, Marco Pavone, Julie Castillo-Rogez, Issa Nesnas</i>	
DYNAMIC MODELING AND CONTROL OF A FREE-FLYING SPACE ROBOT WITH FLEXIBLE-LINK AND FLEXIBLE-JOINTS	6625
<i>Xiaoyan Yu, Li Chen</i>	
SIMULTANEOUS CONTROL FOR END-POINT MOTION AND VIBRATION SUPPRESSION OF A SPACE ROBOT BASED ON SIMPLE DYNAMIC MODEL	6631
<i>Daichi Hirano, Yusuke Fujii, Satoko Abiko, Roberto Lampariello, Kenji Nagaoka, Kazuya Yoshida</i>	
AUTOMATIC COLLISION AVOIDANCE FOR MANUALLY TELE-OPERATED UNMANNED AERIAL VEHICLES	6638
<i>Jason Israelsen, Matt Beall, Daman Bareiss, Daniel Stuart, Eric Keeney, Jur Van Den Berg</i>	
AUDIO-VISUAL KEYWORD SPOTTING BASED ON ADAPTIVE DECISION FUSION UNDER NOISY CONDITIONS FOR HUMAN-ROBOT INTERACTION	6644
<i>Hong Liu, Ting Fan, Pingping Wu</i>	
A NATURAL LANGUAGE PLANNER INTERFACE FOR MOBILE MANIPULATORS	6652
<i>Thomas Howard, Stefanie Tellex, Nicholas Roy</i>	
ENSURING SAFETY IN HUMAN-ROBOT DIALOG -- A COST-DIRECTED APPROACH	6660
<i>Junaed Sattar, James J. Little</i>	
CONTROLLED NATURAL LANGUAGES FOR LANGUAGE GENERATION IN ARTIFICIAL COGNITION	6667
<i>Nicholas Hubert Kirk, Daniel Nyga, Michael Beetz</i>	
PERCEPTIVE FEEDBACK FOR NATURAL LANGUAGE CONTROL OF ROBOTIC OPERATIONS	6673
<i>Yunyi Jia, Ning Xi, Joyce Chai, Yu Cheng, Rui Fang, Lanbo She</i>	
STIFFNESS ANALYSIS OF DOUBLE TENDON UNDERACTUATED FINGERS	6679
<i>Bruno Belzile, Lionel Birglen</i>	
INTERNAL IMPEDANCE CONTROL HELPS INFORMATION GAIN IN EMBODIED PERCEPTION	6685
<i>Nantachai Sornkarn, Thrishantha Nanayakkara, Matthew Howard</i>	
A COMPLIANT UNDERACTUATED HAND WITH SUCTION FLOW FOR UNDERWATER MOBILE MANIPULATION	6691
<i>Hannah Stuart, Shiquan Wang, Bayard Gardineer, David Christensen, Daniel Aukes, Mark Cutkosky</i>	
UNIVERSAL BALANCING CONTROLLER FOR ROBUST LATERAL STABILIZATION OF BIPEDAL ROBOTS IN DYNAMIC, UNSTABLE ENVIRONMENTS	6698
<i>Umashankar Nagarajan, Katsu Yamane</i>	
STATIONARY BALANCE CONTROL OF A BIKEBOT	6706
<i>Yizhai Zhang, Pengcheng Wang, Jingang Yi, Dezhen Song, Tao Liu</i>	
ROBORAY HAND : A HIGHLY BACKDRIVABLE ROBOTIC HAND WITH SENSORLESS CONTACT FORCE MEASUREMENTS	6712
<i>Yong Jae Kim, Younbaek Lee, Jiyoung Kim, Jawoo Lee, Kang-Min Park, Kyungshik Roh, Jung-Yun Choi</i>	
ADAPTIVE SYNERGY CONTROL OF A DEXTEROUS ARTIFICIAL HAND TO ROTATE OBJECTS IN MULTIPLE ORIENTATIONS VIA EMG FACIAL RECOGNITION	6719
<i>Benjamin Kent, Zahi Kakish, Nareen Karnati, Erik Daniel Engeberg</i>	
GUIDING EFFECTS AND FRICTION MODELING FOR TENDON DRIVEN SYSTEMS	6726
<i>Jens Reinecke, Werner Friedl, Maxime Chalon, Markus Grebenstein</i>	
DESIGN OF A TENDON-DRIVEN ROBOTIC HAND WITH AN EMBEDDED CAMERA	6733
<i>Kazuki Mitsui, Ryuta Ozawa</i>	
LOW-FRICTION TENDON-DRIVEN ROBOT HAND WITH CARPAL TUNNEL MECHANISM IN THE PALM BY OPTIMAL 3D ALLOCATION OF PULLEYS	6739
<i>Tanut Treratanakulwong, Hiroshi Kaminaga, Yoshihiko Nakamura</i>	

TIME-BASED RRT ALGORITHM FOR RENDEZVOUS PLANNING OF TWO DYNAMIC SYSTEMS	6745
<i>Avishai Sintov, Amir Shapiro</i>	
PARTICLE COMPUTATION: DESIGNING WORLDS TO CONTROL ROBOT SWARMS WITH ONLY GLOBAL SIGNALS	6751
<i>Aaron Becker, Sandor Fekete, Erik Demaine, James McLurkin</i>	
DECENTRALIZED GOAL ASSIGNMENT AND TRAJECTORY GENERATION IN MULTI-ROBOT NETWORKS: A MULTIPLE LYAPUNOV FUNCTIONS APPROACH	6757
<i>Dimitra Panagou, Matthew Turpin, Vijay Kumar</i>	
PLANNING UNDER UNCERTAINTY IN THE CONTINUOUS DOMAIN: A GENERALIZED BELIEF SPACE APPROACH	6763
<i>Vadim Indelman, Luca Carlone, Frank Dellaert</i>	
EVASION OF A TEAM OF DUBINS VEHICLES FROM A HIDDEN PURSUER	6771
<i>Shih-Yuan Liu, Zhengyuan Zhou, Claire Tomlin, Karl Hedrick</i>	
CARTESIAN-SPACE CONTROL AND DEXTRIOUS MANIPULATION FOR MULTI-FINGERED TENDON-DRIVEN HAND	6777
<i>Taylor Niehues, Julia Badger, Myron Diffler, Ashish Deshpande</i>	
LEARNING OBJECT-LEVEL IMPEDANCE CONTROL FOR ROBUST GRASPING AND DEXTEROUS MANIPULATION	6784
<i>Miao Li, Hang Yin, Kenji Tahara, Aude Billard</i>	
CONTROL STRATEGY FOR WHOLE-ARM MANIPULATION OF A POLYGONAL OBJECT BY CONSIDERING THE ESTIMATED BOUNDS OF FRICTIONAL COEFFICIENT	6792
<i>Masahito Yashima, Tasuku Yamawaki</i>	
TOWARDS A FUNCTIONAL EVALUATION OF MANIPULATION PERFORMANCE IN DEXTEROUS ROBOTIC HAND DESIGN	6800
<i>Maximo A. Roa, Zhaopeng Chen, Irene C. Staal, Jared N. Muirhead, Annika Maier, Benedikt Pleintinger, Christoph Borst, Neal Y. Lii</i>	
DYNAMIC HAND-MANIPULATION: REAL-TIME BEHAVIOUR SYNTHESIS & "ADROIT" HARDWARE PLATFORM	6808
<i>Vikash Kumar, Yuval Tassa, Tom Erez, Emanuel Todorov</i>	
A MACRO-MICRO CONTROLLER FOR PALLET PICKING BY AN ARTICULATED-FRAME STEERING HYDRAULIC MOBILE MACHINE	6816
<i>Mohammad M. Aref, Reza Ghabcheloo, Jouni Matilla</i>	
Author Index	