

Distributed Autonomous Robotic Systems 8

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ISBN 978-3-642-00643-2

e-ISBN 978-3-642-00644-9

DOI 10.1007/978-3-642-00644-9

Library of Congress Control Number: 2009922104

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Typeset and Cover Design: Scientific Publishing Services Pvt. Ltd., Chennai, India.

Printed in acid-free paper

9 8 7 6 5 4 3 2 1

springer.com

Preface

The International Symposia on Distributed Autonomous Robotic Systems (DARS) started at Riken, Japan in 1992. Since then, the DARS symposia have been held every two years: in 1994 and 1996 in Japan (Riken, Wako), in 1998 in Germany (Karlsruhe), in 2000 in the USA (Knoxville, TN), in 2002 in Japan (Fukuoka), in 2004 in France (Toulouse), and in 2006 in the USA (Minneapolis, MN).

The 9th DARS symposium, which was held during November 17–19 in Tsukuba, Japan, hosted 84 participants from 13 countries. The 48 papers presented there were selected through rigorous peer review with a 50% acceptance ratio. Along with three invited talks, they addressed the spreading research fields of DARS, which are classifiable along two streams: theoretical and standard studies of DARS, and interdisciplinary studies using DARS concepts. The former stream includes multi-robot cooperation (task assignment methodology among multiple robots, multi-robot localization, etc.), swarm intelligence, and modular robots. The latter includes distributed sensing, mobiligence, ambient intelligence, and multi-agent systems interaction with human beings.

This book not only offers readers the latest research results related to DARS from theoretical studies to application-oriented ones; it also describes the present trends of this field. With the diversity and depth revealed herein, we expect that DARS technologies will flourish soon.

We thank everyone involved with the organization of DARS 2008. The members of the program committee organized sessions, reviewed papers, and contributed to enhancement of the quality of the program. We thank Prof. Alan Winfield (University of the West of England), Prof. Katsuhiro Nishinari (The University of Tokyo), and Prof. Gregory S. Chirikjian (The Johns Hopkins University) for their plenary and keynote talks. We truly appreciate co-sponsorship by the Mobiligence program of MEXT, and technical co-sponsorship by other organizations (IEEE RAS, SICE, RSJ, and JSME), and grants from the Inoue Foundation for Science and from the Suzuki Foundation. Kind assistance extended by the Tsukuba Convention Bureau was indispensable for us.

We would like also to thank Dr. Kuniaki Kawabata, Dr. Masao Sugi, and Dr. Kohji Tomita for their invaluable help with local arrangements, conference website, and document edition.

January 2009

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Contents

Part I: Distributed Sensing	
Multi-Robot Uniform Frequency Coverage of Significant Locations in the Environment	3
<i>Marco Baglietto, Giorgio Cannata, Francesco Capezio, Antonio Sgorbissa</i>	
Measuring the Accuracy of Distributed Algorithms on Multi-robot Systems with Dynamic Network Topologies	15
<i>James McLurkin</i>	
Network Topology Reconfiguration Based on Risk Management	27
<i>Kosuke Sekiyama, Hirohisa Araki</i>	
Energy-Efficient Distributed Target Tracking Using Wireless Relay Robots	39
<i>Chia Ching Ooi, Christian Schindelhauer</i>	
Cooperative Object Tracking with Mobile Robotic Sensor Network	51
<i>Junji Takahashi, Kosuke Sekiyama, Toshio Fukuda</i>	
Deployment and Management of Wireless Sensor Network Using Mobile Robots for Gathering Environmental Information	63
<i>Tsuyoshi Suzuki, Ryuji Sugizaki, Kuniaki Kawabata, Yasushi Hada, Yoshito Tobe</i>	

Global Pose Estimation of Multiple Cameras with Particle Filters	73
<i>Ryuichi Ueda, Stefanos Nikolaidis, Akinobu Hayashi, Tamio Arai</i>	

Part II: Mobiligence

Motion Control of Dense Robot Colony Using Thermodynamics	85
<i>Antonio D'Angelo, Tetsuro Funato, Enrico Pagello</i>	

Modeling of Self-organized Competition Hierarchy with Body Weight Development in Larval Cricket, <i>Gryllus bimaculatus</i>	97
<i>Shiro Yano, Yusuke Ikemoto, Hitoshi Aonuma, Takashi Nagao, Hajime Asama</i>	

Intelligent Mobility Playing the Role of Impulse Absorption	109
<i>Jae Heon Chung, Byung-Ju Yi, Chang Soo Han</i>	

Part III: Ambient Intelligence

Cognitive Ontology: A Concept Structure for Dynamic Event Interpretation and Description from Visual Scene	123
<i>Yuki Wakuda, Kosuke Sekiyama, Toshio Fukuda</i>	

Subjective Timing Control in Synchronized Motion of Humans: A Basic Study for Human-Robot Interaction	135
<i>Mitsuharu Nojima, Hiroaki Shimo, Yoshihiro Miyake</i>	

Robot Software Framework Using Object and Aspect Oriented Programming Paradigm	149
<i>Fumio Ozaki, Jun'ichiro Ooga, Kunikatsu Takase</i>	

Distributed Context Assessment for Robots in Intelligent Environments	161
<i>Fulvio Mastrogiovanni, Antonio Sgorbissa, Renato Zaccaria</i>	

Part IV: Swarm Intelligence

Jamology: Physics of Self-driven Particles and Toward Solution of All Jams	175
<i>Katsuhiro Nishinari</i>	

Towards an Engineering Science of Robot Foraging	185
<i>Alan F.T. Winfield</i>	
A Modular Robot Driven by Protoplasmic Streaming	193
<i>Takuya Umedachi, Taichi Kitamura, Koichi Takeda, Toshiyuki Nakagaki, Ryo Kobayashi, Akio Ishiguro</i>	
A Distributed Scalable Approach to Formation Control in Multi-robot Systems	203
<i>Iñaki Navarro, Jim Pugh, Alcherio Martinoli, Fernando Matía</i>	
Guiding a Robot Flock via Informed Robots	215
<i>Hande Çelikkanat, Ali Emre Turgut, Erol Şahin</i>	
Theoretical and Empirical Study of Pedestrian Outflow through an Exit	227
<i>Daichi Yanagisawa, Ayako Kimura, Ryosuke Nishi, Akiyasu Tomoeda, Katsuhiro Nishinari</i>	
Understanding the Potential Impact of Multiple Robots in Odor Source Localization	239
<i>Thomas Lochmatter, Alcherio Martinoli</i>	
Analyzing Multi-agent Activity Logs Using Process Mining Techniques	251
<i>Anne Rozinat, Stefan Zickler, Manuela Veloso, Wil M.P. van der Aalst, Colin McMillen</i>	
Altruistic Relationships for Optimizing Task Fulfillment in Robot Communities	261
<i>Christopher M. Clark, Ryan Morton, George A. Bekey</i>	
Part V: Multi-robot Cooperation	
Robotic Self-replication, Self-diagnosis, and Self-repair: Probabilistic Considerations	273
<i>Gregory S. Chirikjian</i>	
Analysis of Multi-robot Play Effectiveness and of Distributed Incidental Play Recognition	283
<i>Colin McMillen, Manuela Veloso</i>	
Sparsing of Information Matrix for Practical Application of SLAM for Autonomous Robots	295
<i>Haiwei Dong, Zhiwei Luo</i>	

Trajectory Generation for Multiple Robots of a Car Transportation System	305
<i>Mitsuru Endo, Kenji Hirose, Yusuke Sugahara, Yasuhisa Hirata, Kazuhiro Kosuge, Takashi Kanbayashi, Mitsukazu Oomoto, Koki Suzuki, Kazunori Murakami, Kenichi Nakamura</i>	
Distributed Control and Coordination of Cooperative Mobile Manipulator Systems	315
<i>Enrico Simetti, Alessio Turetta, Giuseppe Casalino</i>	
Rearrangement Task by Multiple Robots Using a Territorial Approach	325
<i>Norisuke Fujii, Reiko Inoue, Jun Ota</i>	
A Task Planner for an Autonomous Social Robot	335
<i>Samir Alili, Rachid Alami, Vincent Montreuil</i>	
A Stochastic Clustering Auction (SCA) for Centralized and Distributed Task Allocation in Multi-agent Teams	345
<i>Kai Zhang, Emmanuel G. Collins Jr., Dongqing Shi, Xiuwen Liu, Oscar Chuy Jr.</i>	
Corridors for Robot Team Navigation	355
<i>Zack Butler, Carlos Bribiescas</i>	

Part VI: Practical Control of Modular Robots

Efficient Distributed Reinforcement Learning through Agreement	367
<i>Paulina Varshavskaya, Leslie Pack Kaelbling, Daniela Rus</i>	
Morphology Independent Learning in Modular Robots	379
<i>David Johan Christensen, Mirko Bordinon, Ulrik Pagh Schultz, Danish Shaikh, Kasper Stoy</i>	
Reconfigurable Modular Robots Adaptively Transforming a Mechanical Structure (Numerical Expression of Transformation Criteria of “CHOBIE II” and Motion Experiments)	393
<i>Yosuke Suzuki, Norio Inou, Michihiko Koseki, Hitoshi Kimura</i>	
Toward Flexible and Scalable Self-reconfiguration of M-TRAN	405
<i>Haruhisa Kurokawa, Kohji Tomita, Akiya Kamimura, Satoshi Murata</i>	

Reconfigurable Teams: Cooperative Goal Seeking with Self-Reconfigurable Robots	417
<i>Zack Butler, Eric Fabricant</i>	
“Deformable Wheel”-A Self-recovering Modular Rolling Track	429
<i>Harris Chi Ho Chiu, Michael Rubenstein, Wei-Min Shen</i>	
Exploit Morphology to Simplify Docking of Self-reconfigurable Robots	441
<i>Kasper Stoy, David Johan Christensen, David Brandt, Mirko Bordignon, Ulrik Pagh Schultz</i>	
Reconfigurable Modular Universal Unit (MUU) for Mobile Robots	453
<i>Shugen Ma, Changlong Ye, Bin Li, Yuechao Wang</i>	
Part VII: Multi-robot Systems	
Design and Analysis for AGV Systems Using Competitive Co-evolution	465
<i>Ryosuke Chiba, Tamio Arai, Jun Ota</i>	
Cooperative Control of Multi-robot Nonholonomic Systems with Dynamics Uncertainties and Control Time-Delays	477
<i>Junjie Zhang, Suhada Jayasuriya</i>	
Guaranteed-Performance Multi-robot Routing under Limited Communication Range	491
<i>Alejandro R. Mosteo, Luis Montano, Michail G. Lagoudakis</i>	
Pipeless Batch Plant with Operating Robots for a Multiproduct Production System	503
<i>Satoshi Hoshino, Hiroya Seki, Yuji Naka</i>	
Control Methodology of Transfer Crane with Look-Ahead Rule in Harbor Transportation System	513
<i>Hisato Hino, Satoshi Hoshino, Tomoharu Fujisawa, Shigehisa Maruyama, Jun Ota</i>	
A Novel Marsupial Robot Society: Towards Long-Term Autonomy	523
<i>Marek Matusiak, Janne Paanajärvi, Pekka Appelqvist, Mikko Elomaa, Mika Vainio, Tomi Ylikorpi, Aarne Halme</i>	

**Predicting the Movements of Robot Teams Using
Generative Models 533**
Simon Butler, Yiannis Demiris

Interactive Mobile Robotic Drinking Glasses 543
François Rey, Michele Leidi, Francesco Mondada

Part VIII: Human-Robot Interaction

**Adaptive Supervisory Control of a Communication Robot
That Approaches Visitors..... 555**
*Masahiro Shiomi, Takayuki Kanda, Kenta Nohara, Hiroshi Ishiguro,
Norihiro Hagita*

**Behavior Design of a Human-Interactive Robot through
Parallel Tasks Optimization..... 565**
Yuichi Kobayashi, Masaki Onishi, Shigeyuki Hosoe, Zhiwei Luo

**Tracking and Following People and Robots in Crowded
Environment by a Mobile Robot with SOKUIKI Sensor 575**
Akira Ohshima, Shin’ichi Yuta

Author Index 585