

IEEE TRANSACTIONS ON ROBOTICS

A PUBLICATION OF THE IEEE ROBOTICS AND AUTOMATION SOCIETY

FEBRUARY 2022

VOLUME 38

NUMBER 1

ITREAE

(ISSN 1552-3098)

SPECIAL SECTION ON RESILIENCE IN NETWORKED ROBOTIC SYSTEMS

Introduction to the Special Section on Resilience in Networked Robotic Systems	2
..... <i>A. Prorok, V. Kumar, B. Sadler, and G. Sukhatme</i>	
Crowd Vetting: Rejecting Adversaries via Collaboration With Application to Multirobot Flocking	5
..... <i>F. Mallmann-Trenn, M. Cavorsi, and S. Gil</i>	
Attack-Resilient Path Planning Using Dynamic Games With Stopping States	25
..... <i>S. Banik and S. D. Bopardikar</i>	
Resilient Trajectory Propagation in Multirobot Networks	42
..... <i>J. Usevitch and D. Panagou</i>	
Dynamic Resilient Containment Control in Multirobot Systems	57
..... <i>M. Santilli, M. Franceschelli, and A. Gasparri</i>	
Characterizing Trust and Resilience in Distributed Consensus for Cyberphysical Systems	71
..... <i>M. Yemini, A. Nedić, A. J. Goldsmith, and S. Gil</i>	
Detection of Nonrandom Sign-Based Behavior for Resilient Coordination of Robotic Swarms	92
..... <i>P. J. Bonczek, R. Peddi, S. Gao, and N. Bezzo</i>	
Resilient Consensus in Robot Swarms With Periodic Motion and Intermittent Communication	110
..... <i>X. Yu, D. Saldaña, D. Shishika, and M. A. Hsieh</i>	
Resilient Monitoring in Heterogeneous Multirobot Systems Through Network Reconfiguration	126
..... <i>R. K. Ramachandran, P. Pierpaoli, M. Egerstedt, and G. S. Sukhatme</i>	
A Hierarchical Coordination Framework for Joint Perception-Action Tasks in Composite Robot Teams	139
..... <i>E. Seraj, L. Chen, and M. C. Gombolay</i>	
A Resilient and Energy-Aware Task Allocation Framework for Heterogeneous Multirobot Systems	159
..... <i>G. Notomista, S. Mayya, Y. Emam, C. Kroninger, A. Bohannon, S. Hutchinson, and M. Egerstedt</i>	
Active Exploitation of Redundancies in Reconfigurable Multirobot Systems	180
..... <i>T. M. Roehr</i>	
Resilient and Consistent Multirobot Cooperative Localization With Covariance Intersection	197
..... <i>T.-K. Chang, K. Chen, and A. Mehta</i>	
Passive Multiuser Teleoperation of a Multirobot System With Connectivity-Preserving Containment	209
..... <i>Y. Yang, D. Constantinescu, and Y. Shi</i>	
Resilient Supervisory Multiagent Systems	229
..... <i>K. Baxevani, A. Zehfroosh, and H. G. Tanner</i>	
Resilient Active Information Acquisition With Teams of Robots	244
..... <i>B. Schlotfeldt, V. Tzoumas, and G. J. Pappas</i>	
Congestion-Aware Policy Synthesis for Multirobot Systems	262
..... <i>C. Street, S. Pütz, M. Mühlig, N. Hawes, and B. Lacerda</i>	
Outlier-Robust Estimation: Hardness, Minimally-Tuned Algorithms, and Applications	281
..... <i>P. Antonante, V. Tzoumas, H. Yang, and L. Carlone</i>	

REGULAR PAPERS

Adaptive Feet for Quadrupedal Walkers	302
..... <i>M. G. Catalano, M. J. Pollayil, G. Grioli, G. Valsecchi, H. Kolvenbach, M. Hutter, A. Bicchi, and M. Garabini</i>	
Cat-Like Jumping and Landing of Legged Robots in Low Gravity Using Deep Reinforcement Learning	317
..... <i>N. Rudin, H. Kolvenbach, V. Tsounis, and M. Hutter</i>	

(Contents Continued on Page 1)

Anchor Selection for SLAM Based on Graph Topology and Submodular Optimization	329
. <i>Y. Chen, L. Zhao, Y. Zhang, S. Huang, and G. Dissanayake</i>	
Robust Odometry and Mapping for Multi-LiDAR Systems With Online Extrinsic Calibration	351
. <i>J. Jiao, H. Ye, Y. Zhu, and M. Liu</i>	
View Path Planning via Online Multiview Stereo for 3-D Modeling of Large-Scale Structures	372
. <i>S. Song, D. Kim, and S. Choi</i>	
On Incremental Structure from Motion Using Lines	391
. <i>A. Mateus, O. Tahri, A. P. Aguiar, P. U. Lima, and P. Miraldo</i>	
Toward Expedited Impedance Tuning of a Robotic Prosthesis for Personalized Gait Assistance by Reinforcement Learning Control	407
. <i>M. Li, Y. Wen, X. Gao, J. Si, and H. Huang</i>	
Time-Optimal Trajectories for a Car-Like Mobile Robot	421
. <i>J. Z. Ben-Asher and E. D. Rimon</i>	
Speeding up Routing Schedules on Aisle Graphs With Single Access	433
. <i>F. B. Sorbelli, S. Carpin, F. Corò, S. K. Das, A. Navarra, and C. M. Pinotti</i>	
Source-Seeking Control of Unicycle Robots With 3-D-Printed Flexible Piezoresistive Sensors	448
. <i>T. Li, B. Jayawardhana, A. M. Kamat, and A. G. P. Kottapalli</i>	
MADER: Trajectory Planner in Multiagent and Dynamic Environments	463
. <i>J. Tordesillas and J. P. How</i>	
Eccentric Tube Robots as Multiarmed Steerable Sheaths	477
. <i>J. Wang, J. Peine, and P. E. Dupont</i>	
Shake and Take: Fast Transformation of an Origami Gripper	491
. <i>C. Liu, S. J. Wohlever, M. B. Ou, T. Padir, and S. M. Felton</i>	
Singularity Conditions for Continuum Parallel Robots	507
. <i>S. Briot and A. Goldsztejn</i>	
Continuum Robot Proprioception: The Ionic Liquid Approach	526
. <i>D. Alatorre, D. Axinte, and A. Rabani</i>	
Emergent Humanoid Robot Motion Synergies Derived From the Momentum Equilibrium Principle and the Distribution of Momentum	536
. <i>D. N. Nenchev and R. Iizuka</i>	
Agbots 3.0: Adaptive Weed Growth Prediction for Mechanical Weeding Agbots	556
. <i>W. McAllister, J. Whitman, J. Varghese, A. Davis, and G. Chowdhary</i>	
A Shared-Control Teleoperation Architecture for Nonprehensile Object Transportation	569
. <i>M. Selvaggio, J. Cacace, C. Pacchierotti, F. Ruggiero, and P. R. Giordano</i>	
Passive Impedance Control of Robots With Viscoelastic Joints Via Inner-Loop Torque Control	584
. <i>M. J. Kim, A. Werner, F. Loeffl, and C. Ott</i>	
Exploiting Redundancy to Facilitate Physical Interaction	599
. <i>J. Hermus, J. Lachner, D. Verdi, and N. Hogan</i>	
Maximizing the Probability of Task Completion for Redundant Robots Experiencing Locked Joint Failures	616
. <i>B. Xie and A. A. Maciejewski</i>	

SURVEY PAPERS

Past, Present, and Future of Aerial Robotic Manipulators	626
. <i>A. Ollero, M. Tognon, A. Suarez, D. Lee, and A. Franchi</i>	
Mobile Microrobots for <i>In Vitro</i> Biomedical Applications: A Survey	646
. <i>B. Ahmad, M. Gauthier, G. J. Laurent, and A. Bolopion</i>	
