

Call for Papers

Special Issue on Multi-Robot Systems

For *IEEE Intelligent Systems*' July/August 2017 issue

Submission Deadline: 26 October 2016

Multi-robot systems involve groups of intelligent robots that perceive and act in an environment to accomplish tasks collectively in a centralized or decentralized manner. With improved efficiency and the elimination of a single point of failure, multiple robots outperform single robots in domains that require greater capability and knowledge. Some real-world multi-robot systems can be found in multi-robot surveillance, planetary exploration, search and rescue missions, service robots in smart homes and offices, warehouse management, and transportation. This special issue aims to promote multi-robot systems research and solicits articles that report the current research in multi-robot systems. Articles should explain how the work addresses challenges in multi-robot systems and present opportunities for novel applications. We especially welcome work that exploits synergies between intelligent robotics and multiagent systems, bringing together expertise from both fields.

This special issue focuses on the state-of-the-art research in all aspects of multi-robot systems. While work based on real robots is preferable, we also accept work based on simulation only. However, the perspective of intelligence is necessary; articles focusing purely on control or mechanical engineering perspectives are not a good fit for this special issue.

The topics of interest for this special issue include, but are not limited to:

- Ad hoc teamwork
- Coordination and cooperation in multi-robot systems
- Cloud robotics
- Distributed cooperative perception
- Distributed control and planning
- Distributed decision making
- Human-robot interaction, communication, and teamwork
- Machine learning in multi-robot systems
- Mapping, localization, and navigation in multi-robot systems
- Modular robots—locomotion and reconfiguration
- Multi-robot planning (including action selection, motion and path planning, and manipulation)
- Multi-robot self-organization
- Multi-vehicle coordination and interaction
- Performance metrics for robot teams
- Robot soccer
- Robotic vision in multi-robot systems
- Robotic surveillance and security
- Real-world applications of multi-robot systems (including field robotics and personal/service robots)
- Security and privacy in multi-robot systems

- Sensor and actuator networks in multi-robot systems
- Swarm robotics
- Task planning for multiple robots and multi-robot task allocation
- Theoretical foundations of multi-robot systems

Submission Guidelines

Submissions should be up to 5,400 words (counting a standard figure or table as 200 words) and should follow *IEEE Intelligent Systems* style and presentation guidelines (<http://www.computer.org/intelligent/author>). All submissions will be peer-reviewed following standard journal practices. The manuscripts cannot have been published or be currently submitted for publication elsewhere.

We strongly encourage submissions that include audio, video, and community content, which will be featured on the IEEE Computer Society website along with the accepted papers.

Please submit your article using the online manuscript submission service at <https://mc.manuscriptcentral.com/is-cs>. When uploading your article, select the appropriate special-issue title under the category "Manuscript Type." Also include complete contact information for all authors. If you have any questions about submitting your article, contact the peer review coordinator at isystems@computer.org.

Guest Editors

- **Peter Stone**, The University of Texas
- **Tsz-Chiu Au**, Ulsan National Institute of Science and Technology
- **Bikramjit Banerjee**, The University of Southern Mississippi
- **Prithviraj Dasgupta**, University of Nebraska, Omaha

Important Dates

- **Submission deadline:** October 26, 2016
- **First-round decisions:** December 21, 2016
- **First revisions due:** January 11, 2017
- **Final acceptance:** March 8, 2017
- **Target publication:** July/August 2017

Questions

- Information about the special issue's focus: is4-2017@computer.org
- General author guidelines: <http://www.computer.org/web/peer-review/magazines>
- Submission details: intelligent@computer.org
- To submit an article: <https://mc.manuscriptcentral.com/is-cs>

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