

Call for Papers

Special Issue on

“Autonomous Cognitive Robotics and Systems”

IEEE Transactions on Systems, Man, and Cybernetics: Systems

Cognitive systems are natural (i.e. animal and human) or artificial (such as software and robotic) information processing systems that can perform ‘cognitive-like’ functions such as: perception, attention, action, socio-affective and cognitive learning, memory, decision-making and control, language processing and communication, reasoning, problem solving and consciousness.

Autonomous Cognitive Systems is an emerging discipline, fusing ideas across several traditional fields and seeks to further our understanding in two problem domains. First, by instantiating brain models into a virtual, simulated or embodied form, it supplies a strong test of those models, thereby furthering our understanding of neurobiology and cognitive psychology. Second, by harnessing the insights we have about cognition, it is a potentially fruitful source of engineering solutions to problems in autonomous systems, including those in: robotics, autonomous vehicles, planetary rovers, artificial social companions and assistive technology. It therefore promises next-generation solutions in the design and study of autonomous cognitive robotics and systems, including those organized in teams, swarms or as individual robots or agents, and controlled through varying degrees of human interaction and autonomy.

The aim of this exciting Special Issue is to bring together leading scientists, engineers and industry researchers, to submit original pioneering contributions in autonomous cognitive robotics and systems research. Articles will be solicited on theoretical, computational, experimental and integrative aspects of autonomous cognitive systems, or core modules of such systems. Application environments of interest include real-world industrial, indoor, outdoor, everyday life, emergency, hostile and outer space where brain-inspired cognitive technologies are required for autonomous robots and systems to accomplish challenging real-time goals, to at least some degree of self-sufficiency. Timely review papers identifying future R&D challenges and opportunities will also be welcome.

Topics of interest:

Below is an indicative but not exhaustive list of topics/areas that would be of interest.

All applied, theoretical, computational, experimental and integrative aspects of autonomous cognitive robotics and systems research, including (but not limited to):

- perception
- action
- socio-affective and cognitive learning and memory
- attention
- autonomous decision making and control
- social cognition
- natural language processing and communication,
- reasoning
- problem solving
- consciousness
- cognitive system architectures and implementations

Manuscript and Submission

Preparation of manuscripts should refer to the guidelines in the “Information for Authors” on the IEEE Transaction on System, Man Cybernetics: System website:

<http://www.ieeesmc.org/publications/transactions-on-smc-systems/information-for-authors>

Submission for the special issue goes through the normal process. Special Issue papers are designated in the submission process as “Regular Paper - Special Issue” and “Correspondence - Special Issue”.

Manuscripts for the special issue should be submitted through the Manuscript Central web site: <http://mc.manuscriptcentral.com/systems> In the Cover Letter to Editor-in-Chief Section, authors should explicitly include the following statement: This manuscript is submitted for the Special Issue on “Autonomous Cognitive Robotics and Systems (Guest Editor: Amir Hussain).” Further questions about the special issue may be directed to the Guest Editors below.

Important Dates:

Manuscript Submission Deadline:	May 31, 2017
Notification of Paper Decision:	August 15, 2017
Revised Paper Submission Deadline:	October 15, 2017
Final Paper Submission Decision:	December 15, 2017
Publication Date:	March, 2018

Guest Editors

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