



Call for Papers

The boundaries between Computer Science, Artificial Intelligence, and Robotics are continuing to be softened. On one hand computers are continuing to be humanized and a large number of cyber-physical systems are being developed to act upon the physical world. On the other hand the robotic community is looking into the robots of the 21st century that are versatile computing machines with high social impact potential, such as to enhance transportation safety, reduce agricultural pesticide use, and improve public safety and crime-fighting efficacy, among other things. The barriers that restrain their diffusion significantly correlate to the complexity of developing their software control systems, which must be reliable, maintainable, intelligent, and safe.

Robotic Computing (RC) addresses the synergetic interaction of computing technologies and robotic technologies. The synergy between Robotics, Artificial Intelligence, and Computer Science is both realistic and strategic. Their mutual benefit is to make it possible to build and evolve new robotic systems, to reduce their development cost, and to enhance their quality.

The Fourth IEEE International Conference on Robotic Computing (IRC 2020, aka Robotic Computing 2020) is inviting high quality research papers addressing the synergies between Computer Science, Artificial Intelligence, and Robotics in all applications, in order to fill the semantic gap among these areas:

Topics related to Computer Science

- Formal methods for analysis and design
- Software architectures
- Middleware infrastructures
- Model-driven engineering
- Component-based engineering
- Software product line engineering
- Data, ontology, and knowledge engineering
- Autonomic computing
- Service oriented computing
- Cloud computing
- Multimedia computing
- Internet of Things
- Virtual reality
- Computer security

Topics related to Artificial Intelligence

- Natural language understanding
- Machine learning
- Reasoning
- Multi agent system
- Context and intention awareness
- Affective computing
- Conversational computing
- Planning
- Problem solving
- Semantic computing
- Knowledge representation
- Human computer interaction

Topics related to Robotics

- Hardware modeling and abstraction
- Resource awareness
- Sensor fusion, integration
- Place recognition, localization
- Object recognition, tracking
- Scene interpretation
- Robot cognition
- Manipulation, grasping
- Robot kinematics, dynamics
- Motion planning, control
- Navigation
- Task planning, monitoring
- Human-robot interaction
- Robot simulation
- Multi-robot systems

SUBMISSIONS

Authors are invited to submit an 8-page (full), 4-page (short), or 6-page (industry) technical paper manuscript in double-column IEEE format following the guidelines available on the IRC2020 web page. The conference proceedings will be published by IEEE Computer Society Press. Distinguished quality papers presented at the conference will be selected for the best paper/poster awards and for publication in internationally renowned journals.

IMPORTANT DATES

September 16, 2019: Workshop proposal submission deadline
September 27, 2019: Workshop proposal acceptance notification
October 18, 2019: Paper submission deadline
December 2, 2019: Workshop paper submission deadline
December 16, 2019: Paper acceptance notification
January 24, 2020: Camera ready and registration deadline
March 9-11, 2020: Conference



Conference Website
<http://www.ieee-irc.org>