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**Contact: ieee-irc@uci.edu**

# Call for Papers

The boundaries between Computer Science and Robotics are continuing to be softened. On the 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 designing robots for the 21st century that are versatile computing machines with high social impact potential, able 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 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 First IEEE International Conference on Robotic Computing (IRC 2017, aka Robotic Computing 2017) is inviting high quality research papers addressing the synergies between Computer Science and Robotics in all applications:

| Topics related to Computer Science | Topics related to Robotics |
| --- | --- |
| • Formal methods for analysis and design | • RAMS abilities of robotic systems |
| • Software architectures | • Hardware modeling and abstraction |
| • Middleware infrastructures | • Resource awareness |
| • Model-driven engineering | • Sensor fusion, integration |
| • Component-based engineering | • Place recognition, localization |
| • Software product line engineering | • Object recognition, tracking |
| • Data, ontology, and knowledge engineering | • Scene interpretation |
| • Autonomic computing | • Robot cognition |
| • Natural language understanding | • Manipulation, grasping |
| • Service oriented computing | • Robot kinematics, dynamics |
| • Cloud computing | • Motion planning, control |
| • Semantic computing | • Navigation |
| • Multimedia computing | • Task planning, monitoring |
| • Internet of Things | • Human-robot interaction |
| • Virtual reality | • Robot simulation |
| • Computer security | • Multi-robot systems |
| • Software development | |
| • Software fault tools and analysis | |

The Conference is also inviting innovative contributions that discuss the future of the field including, but not limited to:

- What are the challenges to robotic computing?
- What are the main unresolved theoretical and/or methodological controversies?
- What are the stakeholders' (e.g., industries, public bodies, educators) research and development problems?
- What can be learned from other disciplines and what can they learn from robotic computing?
- What is the real world experience of Robotic Computing over the past 10 years, and how might it continue to evolve as we look toward the next decade?

## Important Dates

| | |
| --- | --- |
| June 15, 2016: | Submission open |
| October 22, 2016: | Main conference paper submission deadline |
| October 28, 2016: | Workshop/tutorial proposal submission deadline |
| November 15, 2016: | Workshop/tutorial proposal acceptance notification |
| December 15, 2016: | Main conference paper acceptance notification |
| February 15, 2017: | Camera ready deadline |
| April 10-12 2017: | Conference |

**Conference Website**
**http://www.RoboticComputing.org**