ISoLA 2011
Software Aspects of Robotic Systems

October 17th–19th, 2011

Vienna, Austria

`http://www.cs.uni-potsdam.de/isola2011/`

Call for Papers

The development of autonomous robotic systems has experienced a remarkable boost within the last years. Away from stationary manufacturing units, current robots have grown up into autonomous, mobile systems that not only interact with real world environments, but also fulfill mission critical tasks in collaboration with human individuals on a reliable basis. Typical fields of application are unmanned vehicles for exploration but also for transportation, reconnaissance and search-and-rescue in hazardous environments, and ambient assisted living for elderly or disabled people. Hence, algorithms in cognition, computer vision, and locomotion have become hot-spots of research and development. In addition, modern concepts like evolutionary and bio-inspired design have entered the stage to tackle open issues in robotics and to cope with domain specific properties like inherent indeterminism.

The back-side of this boost is an even larger increase in complexity of modern robotic systems. Numerous actuators and sensors have to be controlled simultaneously. Complex actions have to be performed via timed parallel execution of multiple instruction streams on distinct electronic control units. Autonomy, especially long term autonomy as required by deep-sea or space exploration missions, necessitates features of fault-tolerance, error recovery, or at least well-defined fallbacks. Due to the physical interaction of robots with the real world, safety violations are extremely harmful, in the worst-case they might lead to severe damage and even to casualties.

The goal of this Workshop is to bring together researchers and practitioners who are interested in the software aspect of robotic systems. Topics of interest for the workshop include (but are not limited to):

- languages and compilation techniques
- dependability and fault tolerance
- software architectures
- computer vision
- cognitive robotics
- machine-learning

Authors are invited to submit original, unpublished papers on basic as much as applied research, which are not being considered in another forum. All submitted papers will be carefully evaluated based on originality, significance, technical soundness, and clarity of expression. All submissions must be in English. Submissions should be in PDF format and must not exceed 15 pages in the final camera-ready format. Accepted papers will be published in Communications in Computer and Information Science (Springer Verlag, Heidelberg). Selected papers will appear in the International Journal on Software Tools for Technology Transfer (Springer Verlag, Heidelberg).

Important dates:

Submission: August 21st **Acceptance**: September 5th **Final version**: September 25th