

Call For Papers

Semantic Perception, Mapping and Exploration Special Issue Journal of Robotics and Autonomous Systems (Elsevier)

<http://ees.elsevier.com/robot/>

Semantic perception for intelligent systems and robots remains an active area of research with many recent advances that address a variety of problems. One key requirement that these systems have is to reason in spaces exceeding their local perceptual space. For example, a personal robot operating in human living spaces needs to continuously acquire and semantically understand perceptual information while maintaining an accurate internal representation of the environment that may change over time.

The main focus of this special issue is on the autonomous acquisition of semantic information in intelligent robots and systems, as well as the use of semantic knowledge to guide further acquisition of information from the environment. The performance of robotic systems can significantly be improved by incorporating semantic information. We are looking for research papers that aim at building bindings from raw sensor output, i.e., sub-symbolic data like 3-d point clouds, to knowledge representations, i.e., symbols e.g., parametric 3-d models.

Topics of interest include, but are not necessarily limited to:

- Semantic robot vision and scene interpretation for mobile manipulation
- Segmentation and annotation of natural scenes (e.g., from images or point clouds)
- Exploration strategies for semantic mapping and knowledge acquisition
- Semantic approaches for long-term operation in dynamic environments
- Ontologies and efficient representations for managing semantic information in robotics
- Use of semantic information in mapping (e.g., registration of sensory information) or knowledge acquisition

Guest Editors:

- Dirk Holz, Autonomous Intelligent Systems Group, University of Bonn, Germany
- Daniel Munoz, Carnegie Mellon University, USA
- Andreas Nuechter, Jacobs University Bremen gGmbH, Germany
(Managing Guest Editor)
- Radu Bogdan Rusu, Willow Garage, USA

Important Dates:

- Submission deadline: August 1, 2011
- Reviews sent to contributors: November 1, 2011,
- Submission of revised papers: February 18, 2012
- Notifications sent to authors: March 13, 2012
- Final papers due: May 1, 2012
- PUBLICATION: Mid-2012