



2006 IEEE-RAS International Conference on Humanoid Robots

December 4-7, 2006, Genoa, Italy

Workshop

Towards Cognitive Humanoid Robots

December 4, 2006

Organizers:

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In this workshop we continue the series of workshops we organized at past Humanoids conferences, in 2004 (Building Humanoid Heads), and 2005 (Cognitive Architectures for Humanoids). In 2006 we focus on the recent methodologies towards the realization of "humanoid cognition".

Recently, roboticists and artificial intelligence researchers have been looking more closely at other disciplines in developing their systems. The main driving force is that other disciplines can offer a guiding hand in the realization of sophisticated humanoid robotic systems. Experimental paradigms from developmental psychology, neuroscience and physiology are now being better utilized. A paradigm shift toward this new scientific endeavor in the engineering of sophisticated human-like systems has been forged.

More specifically, among the key issues that can contribute to the improvement of cognitive proficiency of humanoid robots is the ability to seamlessly acquire new knowledge through learning. However, new knowledge cannot be acquired without a strong perceptual-action component that provides information about the state of the world and its changes. In order to improve the still rather primitive cognitive abilities of humanoid robots, researchers should gain better understanding of what information is needed for learning, what can be provided by humanoid sensing, especially vision, which is arguably the most important sense for humanoid robots, and how a complete cognitive system should be designed and realized. Studies of human vision and learning processes have a long tradition and can provide a good starting point towards the realization of Cognitive Humanoid Robots.

This one-day workshop will provide a forum for researchers working in these various areas pertaining to humanoid cognition, to interact and exchange ideas.

Topics of Interest:

- Cognitive architectures;
- Multi-disciplinary approaches towards humanoid cognition;
- The role of humanoid robots in realizing human-like cognition;
- Neuroscience and humanoid robots;
- Developmental approach to humanoid robotics;
- Human-like learning systems for humanoid robots;
- Imitation Architectures;
- Computational models of biological vision processes;
- Technical implementations of humanoid vision systems;
- Perception of human motion;
- Object and action recognition on humanoid robots;
- Cognitive processes in vision;



Submission of Papers

Participants of this Workshop are required to submit their abstract (300 words) or full paper in .pdf format. The maximum number of pages is limited to six, including figures. The full paper should be accordant to the paper submission requirements, please refer to <http://humanoids06.epfl.ch/>. Please send your paper directly to the Workshop organizers (asfour@ira.uka.de)

Important Dates for This Workshop:

Sending the Abstract to the Workshop organizers

or

Sending of full paper to the Workshop organizers: - AS SOON AS POSSIBLE!

Notification of acceptance: - October 15, 2006

Deadline for Submission of Final Manuscripts - November 15, 2006

We warmly thank you for submitting your paper to the workshop at the Humanoids 2006 and are looking forward to your contribution and an opportunity together with you to create a successful event.

For any further information, please contact the organizers. Seeing you in Genoa, Italy.

Contact

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