



NIPS 2006 Workshop on Grounding Perception, Knowledge and Cognition in Sensori-Motor Experience

Whistler Resort & Spa and the Whistler Hilton Resort & Spa, BC, CANADA

<http://rlai.net/RLAI/prw2006.html>

Workshop Overview

Understanding how world knowledge can be grounded in sensori-motor experience has been a long-standing goal of philosophy, psychology, and artificial intelligence. So far this goal has remained distant, but recent progress in machine learning, cognitive science, neuroscience, engineering, and other fields seems to bring nearer the possibility of addressing it productively.

The objective of this workshop is to provide cross-fertilization of ideas between diverse research communities interested in this subject. This workshop will serve as a meeting point for researchers from these various disciplines to share their perspectives and insights on the issue of representing knowledge in terms of sensori-motor experience.

The workshop will focus on research topics such as:

- * The role of prediction in biological and neurological systems
- * Grounded state representations (PSRs, OOMs, etc)
- * Dynamical / environmental models grounded in sensori-motor experience
- * Identifying relevant sensory information, both across sensors and time (sensor bootstrapping)
- * Representations spanning multiple spatio-temporal scales
- * Signals to symbols, symbol grounding
- * Issues of grounded knowledge representations: formats, capabilities, affordances, limitations
- * Reasoning and planning in terms of grounded knowledge
- * Active perception guided by sensory-motor experience
- * Construction of perceptual or motor control primitives
- * Learning in infants, going from sensory data to representations

The workshop will be comprised of invited talks by 5-6 of the top people from a variety of disciplines related to experience based knowledge representations. The speakers will share their area-specific knowledge and understanding of these issues with the workshop attendees. Several discussion sessions will give an opportunity for all workshop participants to discuss ideas. The workshop will conclude with a poster session populated with work submitted by the community at large.

A central goal is to bring together the perspectives of different communities. We invite participants from any area, including machine learning, cognitive science, computational neuroscience, developmental robotics, and philosophy.

Confirmed Speakers

Dr. Richard Sutton	Reinforcement Learning and AI Laboratory	University of Alberta
Dr. Deb Roy	MIT Media Laboratory	MIT
Dr. Mark Bickhard	Institute for Interactivist Studies	Lehigh University
Dr. Rajesh Rao	Laboratory of Neural Systems	Washington Univeristy
Dr. Bernard Balleine	Learning and Behavior	UCLA Dept. of Psychology

Call for Participation

Participation in the form of a poster will be by invitation from the program committee based on a small written submission, either a short paper or extended abstract on your relevant work (this may be work that has been previously published elsewhere).

We encourage submissions from all disciplines that are related to the topic of the workshop. The poster session is expected to reflect that wide variety of interesting ideas surrounding our topic.

- * Submission Deadline: **November 3, 2006**
- * Acceptance Notification: **November 10, 2006**
- * Workshop date: **December 8, 2006**

All submissions or questions should be emailed to grounded.workshop@gmail.com

The official workshop website is: <http://rlai.net/RLAI/prw2006.html>