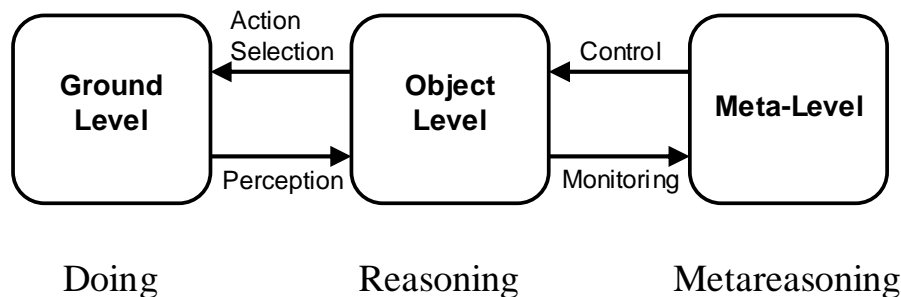


AAAI-08 Workshop on Metareasoning: Thinking about thinking

Call for Papers

www.sis.uncc.edu/~anraja/Metareasoning

The 21st century is experiencing a renewed interest in an old idea within artificial intelligence that goes to the heart of what it means to be both human and intelligent. This idea is that much can be gained by thinking of one's own thinking. *Metareasoning* is the process of reasoning about reasoning itself. As shown below, it is composed of both meta-level control of computational activities and the introspective monitoring of reasoning to evaluate and to explain computation. Meta-level control is the ability of an agent to efficiently trade off its resources between object level actions (computations) and ground level actions to maximize the quality of its decisions. Introspective monitoring is necessary to gather sufficient information with which to make effective meta-level control decisions or to explain failed object-level reasoning. This workshop will explore the implications of this model by examining the various aspects of metareasoning and models of self and their role in single-agent and multiagent applications.



The above figure and an accompanying manifesto are available on the web (www.mcox.org/Metareasoning/Manifesto). To increase coherence of the workshop sessions and to help attendees to relate heterogeneous positions, all authors are encouraged to include and reference at least one of a set of provided figures, either positively, negatively, or as a contrast to their own alternative models. The goal is to use this as a unifying theme. This is especially important because authors of selected papers will be invited to prepare chapters based on their workshop contributions for a forthcoming book on metareasoning. The workshop will not simply collect a loosely affiliated set of technical papers; rather, the objective is to present a cohesive story of what metareasoning is, what its limitations are, what benefits it promises, and how these promises can be implemented computationally.

This two day workshop will include a number of short paper presentations, thematically organized discussion sessions, a break-out problem-solving session with discussion, and two speakers. Professor Don Perlis from the University of Maryland, College Park, will

present on day one, and a speaker to be determined will present on the second day. We also will include panel discussions after each group of paper presentations so that the audience can ask follow up questions that compare and contrast the related positions. Finally a special track will be targeted for the topic of evaluation of metareasoning systems.

Potential Topics

- Theoretical models of metareasoning
- The integration of meta-level control and monitoring
- Multiagent coordinated metareasoning
- Meta-explanation and self-explanation
- Self-adaptive systems and autonomic computing
- Centralized versus distributed meta-level control
- Human metacognition and metamemory
- The role of state abstraction in metareasoning
- Computational models of self and consciousness
- Logical introspection and reflective logic programming
- Bounded rationality
- Learning agents and metareasoning
- Evaluation of metareasoning systems

Organizing committee members.

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Program committee members.

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Stefania Constanini, Professor, Univ. of L'Aquila, Italy

Ed Durfee, Professor, University of Michigan

Stan Franklin, Research Professor, University of Memphis

Andrew Gordon, Research Assistant Professor, University of Southern California

Eric Horvitz, Principal Researcher, Microsoft Research

Victor Lesser, Professor, University of Massachusetts

Paul Robertson, Senior Research Scientist, BBN

Lenhart Schubert, Professor, University of Rochester

Steve Smith, Research Professor, Carnegie Mellon University

Important dates.

Submission Deadline April 7, 2008
Acceptance Notification April 21, 2008
Camera-ready Copy May 5, 2008
AAAI-08 Workshop July 13-14, 2008

Submission procedure.

We encourage the submission of high quality, original papers that are not submitted for publication elsewhere. The submission should not exceed 8 pages in the AAAI style (www.aaai.org/Publications/Author/author.php), either in PostScript or PDF format. Surface mail address, e-mail addresses should be included for all contributing authors. Submissions must be emailed to either chair (mcox@bbn.com or anraja@uncc.edu) by the deadline period and must include and reference at least one of the figures from www.mcox.org/Metareasoning/Figs. Short position statements are also accepted.