SASO-09 Workshop on Metareasoning in Self Adaptive Systems

Call for Papers

www.sis.uncc.edu/~anraja/SASOMeta09

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.

This one-day workshop will focus on techniques and benefits of metareasoning and introspection in self adaptive systems. It will include a number of short paper presentations, thematically organized discussion sessions, and a keynote speaker. We also will include panel discussions so that the audience can ask follow up questions that compare and contrast related positions.

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.

Robert Laddaga (co-chair)
Senior Research Scientist
Intelligent Computing
BBN Technologies
Cambridge, MA 02138
rladdaga@bbn.com
(617) 873-5524

Anita Raja (co-chair)
Assistant Professor
Department of Software & Information Systems
University of North Carolina at Charlotte
Charlotte, NC 28223
anraja@uncc.edu
(704) 687-8651

Michael L. Anderson, Assistant Professor. Franklin & Marshall College.
Howard Shrobe, Principal Research Scientist, MIT.
Shlomo Zilberstein, Professor, University of Massachusetts.

Program committee members.

Mark Burstein, Senior Research Scientist, BBN
Andrew Gordon, Research Assistant Professor, University of Southern California
David Leake, Professor, Indiana University
Victor Lesser, Professor, University of Massachusetts
Paul Robertson, Senior Research Scientist, BBN
Lenhart Schubert, Professor, University of Rochester

Important dates.

Submission Deadline	July 10, 2009
Acceptance Notification	August 5, 2009
Camera-ready Copy	August 15, 2009
SASO 2009 Metareasoning Workshop	September 15, 2009

Submission procedure.

We encourage the submission of high quality, original papers that are not submitted for publication elsewhere. All submissions should be 10 pages formatted according to the IEEE Computer Society Press proceedings style guide 8.5" x 11" Two-Column Format. Document templates for submissions can be downloaded here. Short position statements are also accepted.