



The Eighth Symposium on Abstraction, Reformulation and Approximation

Call For Papers

July 6-9, 2009

Lake Arrowhead, CA

<http://www.cs.ualberta.ca/~nathanst/sara/>

After a successful series of seven international symposia (Jackson Hole, Ville d'Estrel, Pacific Grove, Horseshoe Bay, Kananaskis, Airth, and Whistler), the eighth symposium on Abstraction, Reformulation and Approximation will be held at Lake Arrowhead Resort outside of Los Angeles, California (USA), July 6-9, 2009.

The symposium will be co-located with the International Symposium on Combinatorial Search (SoCS). SoCS will run after SARA with a one-day overlap (July 9) for joint sessions. SARA 2009 will also be co-located with the International Joint Conference on Artificial Intelligence (IJCAI09) which will be held in Pasadena, following SARA and SoCS.

It has been recognized since the inception of Artificial Intelligence that abstractions, problem reformulations and approximations (ARA) are central to human common-sense reasoning and problem solving and to the ability of systems to reason effectively in complex domains. ARA techniques have been used in a variety of problem-solving settings such as:

Automated reasoning	Model-based reasoning
Automatic programming	Planning
Cognitive modeling	Reasoning
Constraint programming	Scheduling
Design	Search
Diagnosis	Theorem proving
Machine learning	Tutoring

The primary use of ARA techniques in such settings has been to overcome computational intractability by decreasing the combinatorial costs associated with searching large spaces. In addition, ARA techniques are also useful for knowledge acquisition and explanation generation in complex domains.

The aim of the SARA series is to provide a forum for interaction among researchers in all areas of Artificial Intelligence and Computer Science with an interest in the different aspects of ARA techniques. The diverse backgrounds of participants of previous symposia has led to a rich and lively exchange of ideas, allowed the comparison of goals, techniques and paradigms and helped identify important research issues and engineering hurdles.

Important Dates

April 8, 2009	Deadline for submissions
May 4, 2009	Notification of acceptance
May 8, 2009	Registration for Symposium
June 12, 2009	Deadline for web-ready copies of all accepted submissions
July 6-9, 2009	SARA 2009 Conference
TBA	Deadline for camera-ready papers for post-symposium proceedings

Submission Information

Submissions are requested about all aspects of abstraction, reformulation and approximation, including (but not limited to) the following topics:

- New techniques for automatically constructing and selecting appropriate ARA.
- Methods for selecting which of several applicable ARA techniques is best for a given problem.
- Frameworks that unify and classify ARA techniques.
- Empirical and theoretical studies of the costs and benefits of ARA.
- Applications of ARA to search, constraint satisfaction, deterministic and probabilistic planning, theorem proving, logic programming, game playing, distributed data and knowledge bases, internet search and navigation, knowledge compilation, knowledge acquisition, knowledge reformulation, simulation, design, diagnosis and control of physical systems (including mobile robots), automatic programming, analogical reasoning, case-based reasoning, reasoning under uncertainty, reinforcement learning, machine learning, speed-up learning.
- Fielded applications demonstrating the benefits of ARA.

Researchers who wish to attend the symposium must submit in one of the following forms:

A full paper: Full paper submissions must report on substantial, original and previously unpublished research.

An extended abstract: SARA allows researchers to submit extended abstracts on research that will be submitted to, has been submitted to, or has already been published in archival conferences or journals. However, researchers are encouraged to submit full papers, if possible. Please indicate in your submission if it is an "extended abstract".

A research summary: Researchers should submit a short report (1 or 2 pages) describing research questions that they are engaged in that is relevant to ARA.

Full papers should not exceed 8 pages in AAAI format, extended abstracts should not exceed 4 pages, and research summaries should not exceed 2 pages.

The proceedings of the symposium will be published by AAAI Press. The collective work will be copyright of AAAI Press and authors will be required to sign a form that gives AAAI Press the right to publish the paper and to grant that right to others. As symposium papers, however, the papers themselves are not copyright of AAAI Press and authors may subsequently resubmit the paper elsewhere.