Symposium on Abstraction, Reformulation and Approximation (SARA-2000)

SARA2000.unl.edu
Horseshoe Bay Resort and Conference Club on Lake LBJ, Texas
July 26-29, 2000 (just prior to AAAI-2000)

Final Call for Papers

Invited Speakers

Patrick Cousot, École Normale Supérieure, Paris
Tom Dietterich, Oregon State University
Rich Korf, University of California, Los Angeles

Program Co-Chairs

Berthe Y. Choueiry, University of Nebraska-Lincoln
Toby Walsh, University of York

Program Committee

Ralph Bergmann, University of Kaiserlautern
Marco Cadoli, Università di Roma, La Sapienza
Tom Ellman, Vassar College
Eugene C. Freuder, University of New Hamsphire
Lise Getoor, Stanford University
Robert Holte, University of Ottawa
Hiroshi Motoda, Osaka University
Marco Schaerf, Università di Roma, La Sapienza
Joseph Sifakis, VERIMAG
Jeffrey Van Baalen, University of Wyoming
Qiang Yang, Simon Fraser University
Karl Branting, University of Wyoming
Berthe Y. Choueiry, University of Nebraska-Lincoln
Boi V. Faltings, Swiss Federal Institute of Technology
Mike Genesereth, Stanford University
Fausto Giunchiglia, University of Trento and ITC-IRST
Michael Lowry, NASA Ames Research Center
Peter Revesz, University of Nebraska-Lincoln
Bart Selman, Cornell University
Divesh Srivastava, AT&T Labs-Research
Toby Walsh, University of York

From the inception of Artificial Intelligence (AI) research it has been recognized that abstractions, problem reformulations and approximations are central to human common-sense reasoning and problem solving and to the ability of systems to reason effectively in complex domains. Abstractions, reformulations and approximations (AR&A) have been used in a variety of problem-solving settings including automatic programming, constraint satisfaction, design, diagnosis, machine learning, planning, qualitative reasoning, scheduling and theorem proving. The primary use of AR&A in such settings has been to overcome computational intractability by decreasing the combinatorial costs associated with searching large spaces. In addition, AR&A techniques are also useful for knowledge acquisition and explanation generation in complex domains.

The considerable interest in AR&A has led to a series of successful workshops over the last few years. AAAI workshops in 1990 and 1992 focused on selecting, constructing and using abstractions and approximations, while a series of workshops in 1989, 1990 and 1992 focused on problem reformulations. There was considerable intersection in the set of attendees and topics of the two separate workshop series, and this lead to holding merged workshops in 1994, 1995 and 1998. The present symposium is the fourth in this new series. The aim of this symposium is to provide a forum for intensive interaction among researchers in all areas of AI with an interest in the different aspects of AR&A. The diverse backgrounds of participants of previous workshops has lead 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. We hope and expect that the upcoming symposium will include an equally diverse group of participants.

Submissions are requested in all aspects of abstraction, reformulation and approximation, including but not limited to the following:

- New techniques for automatically constructing and selecting appropriate AR&A.
- Methods for selecting which of several applicable AR&A techniques is best for a given problem.
- Frameworks that unify and classify AR&A techniques.
- Empirical and/or theoretical studies of the costs and benefits of AR&A.
- Applications of AR&A:
  - Search, constraint satisfaction, planning, theorem-proving, logic programming.
  - Distributed data and knowledge bases, Internet search and navigation, context, knowledge-compilation, knowledge acquisition.
  - Simulation, design, diagnosis and control of physical systems.
  - Automatic programming, analogical-reasoning , case-based reasoning, machine learning and speedup learning.
- Fielded applications demonstrating the benefits of AR&A.

Attendance is limited and is by invitation only. Persons wishing to attend the workshop, but not make a presentation, should submit a 1–2 page research summary including a list of relevant publications. Persons wishing to make presentations at the workshop should submit a full paper (not exceeding 6000 words) or, if they prefer, an extended abstract (not exceeding 2500 words). Authors of extended abstracts that are accepted will be encouraged to produce full papers by the May 15th deadline.

Three copies of all submissions should be received by March 20, 2000 at the address below. Submissions will also be accepted by electronic mail in PostScript format. Please include several ways of contacting the principal author: electronic mail addresses and telephone and fax numbers are preferred, in that order. In case of multiple authors, please indicate which authors wish to participate. Notification of acceptance or rejection will be mailed to authors by April 21, 2000. Camera-ready copies of papers accepted for inclusion in the proceedings will be due May 15, 2000.

Extended abstracts and full papers accepted to the symposium will be published in Springer-Verlag's Lecture Notes in Artificial Intelligence series (see www.springer.de/comp/lncs/index.html). Research summaries will also be included in the proceedings. Final versions of all papers and summaries must be in LNCS/LNAI format. Instructions to authors for the formatting of papers can be found at www.springer.de/comp/lncs/authors.html. Final versions should not exceed the following page limits: 15 pages for a full paper, 8 pages for an extended abstract and 2 pages for a research summary. Instructions to authors for the formatting of papers can be found at www.springer.de/comp/lncs/authors.html. A copy of the proceedings will be included in the registration package. Papers will also be available online through Springer-Verlag's comprehensive full-text electronic service.

Papers may contain work published elsewhere provided the authors make the necessary acknowledgments and use the generous page limit here to extend the work in some significant manner (e.g., the inclusion of additional technical details, new experimental results, or more complete comparison with related approaches). Authors will be able to submit updated versions of their papers to major conferences such as AAAI, ECAI and IJCAI, as well as journals, provided they meet all restrictions placed by the conference or journal organizers on prior publication.

Additional information may be obtained from the symposium home page on the World Wide Web: `SARA2000.unl.edu`. SARA is an AAAI Affiliate.

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Student support: We have limited funds to support student travel. Students wishing to be considered for travel awards should send a research summary, and an estimate of their expected travel costs.

Venue: Horseshoe Bay Resort is located within the "Golden Triangle of Texas." The resort is less than an hour scenic drive from Austin, the State Capital of Texas. Nestled along the shores of Lake LBJ in the historic and fabled Texas Hill Country, the resort is surrounded by awe-inspiring natural beauty. It is described as "a playground created for those individuals who have earned and deserve the finer things of life." The resort offers luxurious lodging, swimming pools, golf courses, putting greens, a tennis center, watersports facilities, a fitness club and spa, and horseback riding. The weather is near perfect all year round. For more details, see www.horseshoebaytexas.com.

To prevent any confusion, the symposium was originally planned for Lago Vista Clubs & Resort. This facility however has been closed for failing to pay its taxes. Fortunately, Horseshoe Bay Resort promises an even better location that continues the fine tradition set by earlier SARA's.

We aim to organize transportation from Austin-Bergtrom International Airport on July 26, 2000, and back to downtown Austin on July 29, 2000 for AAAI. However, the resort has its own 6,000 foot long lighted airstrip which can accommodate private aircraft and corporate jets up to a DC-9.

Sponsors: The American Association of Artificial Intelligence. The University of Nebraska-Lincoln: Office of Vice Chancellor for Research, Center for Communication and Information Science (CCIS), College of Arts and Sciences, Department of Computer Science and Engineering (CSE), and the J.D. Edwards Honors Program in Computer Science and Management.