



AAAI 2004

**Nineteenth National Conference
on Artificial Intelligence
Calls for Papers, Proposals,
& Participation**

July 25-29, 2004

*San Jose Convention Center
San Jose, California USA*

Sponsored by the

American Association for Artificial Intelligence
445 Burgess Drive, Menlo Park, CA 94025
(650) 328-3123 ☎ (650) 321-4457 (fax)
aaai04@aaai.org ☎ www.aaai.org/Conferences/National/2004/



San Jose Museum of Art, downtown San Jose.

You are Invited to Participate!

The Nineteenth National Conference on Artificial Intelligence (AAAI-04) will be held in San Jose, California—in the heart of California's silicon valley, at the San Jose Convention center. The purpose of this conference is to promote research in AI and scientific interchange among AI researchers, practitioners, and scientists and engineers in related disciplines. AAAI-04 will have multiple technical tracks, poster sessions, invited speakers, and exhibit programs, all selected according to the highest reviewing standards. There are many opportunities available for participation at this event, whether it be delivering a technical paper, teaching a tutorial, demonstrating an intelligent system, exhibiting a product, entering the mobile robot competition, discussing career objectives, presenting a student abstract, or simply attending and networking with colleagues, your participation is welcome and solicited! In this booklet, you will find the first of a number of "calls" for AAAI-04 (IAAI-04 is contained in a separate booklet):

- AAAI-04 Call for Papers (page 4)
- AAAI-04 Tutorial Forum Call for Proposals (page 6)
- AAAI-04 Workshop Program Call for Proposals (page 8)
- AAAI-04 Intelligent Systems Demonstrations Call for Proposals (page 10)
- AAAI-04 Student Abstract Program Call for Participation (page 12)
- Ninth AAAI/SIGART Doctoral Consortium Call for Applications (page 14)

For more general information about these and other programs at AAAI-04, or if instructed to mail submissions to AAAI, please contact us at 445 Burgess Drive, Suite 100, Menlo Park, California 94025 USA. Telephone: (650) 328-3123. Fax: (650) 321-4457. E-mail: aaai04@aaai.org. Web: www.aaai.org/Conferences/National/2004/

- **Program Cochairs**
Deborah McGuinness, Stanford University
George Ferguson, Rochester University
Technical Paper Submission Deadline: January 20, 2004
- **Tutorial Forum Chair**
Matthew Stone, Rutgers University
Tutorial Proposal Deadline: October 15, 2003
- **Workshop Program Chair and Cochair**
Milos Hauskrecht, University of Pittsburgh
Dieter Fox, University of Washington
Workshop Proposal Deadline: October 3, 2003
- **Intelligent Systems Demonstrations Program Chair**
Chris Welty, IBM Research
Intelligent Systems Demonstrations Proposal Deadline: February 20, 2004
- **Doctoral Consortium Program Chair**
Rob St. Amant, North Carolina State University
Doctoral Consortium Application Deadline: February 6, 2004
- **Student Abstracts Program Chair and Cochair**
Avi Pfeffer, Harvard University
Mark Craven, University of Wisconsin, Madison
Student Abstracts Program Submission Deadline: January 23, 2004

AAAI-04 Technical Sessions

AAAI-04 is the Nineteenth National Conference on Artificial Intelligence (AI). The purpose of this conference is to promote research in AI and scientific interchange among AI researchers, practitioners, and scientists and engineers in related disciplines. AAI-04 will have multiple technical tracks, poster sessions, invited speakers, and exhibit programs, all selected according to the highest reviewing standards.

The conference provides a forum for a broad range of topics, including (but not limited to) knowledge representation, machine learning, autonomous agents, planning, robotics and machine perception, expert systems, theorem proving, common-sense reasoning, probabilistic inference, constraint satisfaction, game playing, automated diagnosis, data mining, natural language processing, neural networks, reinforcement learning, and cognitive modeling.

As the national conference for all of AI, AAI encourages the presentation of results both from core AI technical areas and from efforts to synthesize and unify approaches to the problems faced by intelligent systems. Contributions involving the role of AI techniques and systems in other emerging areas of computer science, science, and society (such as grid computing, biotechnology, and health care, to name just a few) are particularly encouraged.

Timetable for Authors

- December 1, 2003 – January 20, 2004: Authors register on the AAI web site
- January 20, 2004: Electronic submission of title page, abstract and paper
- January 23, 2004: Submission of hard copy of one formatted title page, including tracking number, title, authors, contact information, and keywords
- March 12, 2004: Notification of acceptance or rejection
- April 6, 2004: Camera-ready copy due at AAI office

Author Registration

Authors must register at the AAI-04 web-based technical paper submission site. The software will assign a password, which will enable the author to log on to submit a title page and paper. In order to avoid a rush at the last minute, authors are encouraged to register as soon as the software is available, scheduled for December 1, 2003.

Title Page

Authors should submit a title page through the technical paper submission software no later than January 20, 2004, and preferably prior to that date. The software will assign a tracking number at the time of the title page submission, and this number should be included on the pdf of the final electronic paper. It is, therefore, necessary to allow some time between the submission of the title page and the submission of the electronic paper to receive an email with the tracking number.

Authors are also requested to submit one copy of the formatted version of their title page no later than January 23, 2003. This page will be retained by the AAI office for author identification and author order. Please note that author information should not be included on the pdf of the submitted paper because AAI-04 papers will have a blind review. Please send title pages to AAI, *Attn:* AAI-04 (the complete address is on page 3.)

Paper Submission

Electronic paper submission is required. Instructions about how to submit papers electronically will be available at the AAAI web site (www.aaai.org) in the fall of 2003. Papers may be no longer than 6 pages including references, and formatted in AAAI two-column, camera-ready style. We cannot accept submissions by e-mail or fax. Reviewing for AAAI-04 will be blind to the identities of the authors. Details on formatting and preparing the paper for blind review can be found at the AAAI-04 web site.

Submissions to Other Conferences or Journals

Papers submitted to this conference must not have been accepted for publication elsewhere or be under review for another AI conference. However, to encourage interdisciplinary contributions, we may consider work that has been submitted or presented in part to a forum outside of AI. The guidelines of the AAAI policy on multiple submissions are fully detailed at the AAAI-04 web site and must be carefully followed.

Review Process

Program committee members will identify papers they are qualified to review based on the information submitted electronically (the paper's title, keywords, and abstract). Their reviewing will be done blind to the identities of the authors and their institutions. The program committee's reviews will make recommendations to the senior program committee, which in turn will make recommendations to the program cochairs. Although the program cochairs will formally make all final decisions, in practice almost all will be made earlier in the process.

Publication

Accepted papers will be allocated six (6) pages in the conference proceedings. Up to two (2) additional pages may be used at a cost to the authors of \$275 per page. Papers exceeding eight (8) pages and those violating the instructions to authors will not be included in the proceedings. Authors will be required to transfer copyright of their paper to AAAI.

Questions and Suggestions

Concerning author instructions and conference registration, write to: aaai04@aaai.org. Concerning suggestions for the conference and other inquiries, write to the Program Cochairs:

- George Ferguson, University of Rochester
ferguson@cs.rochester.edu
- Deborah L. McGuinness
dldm@ksl.stanford.edu

For a complete listing of the Senior Program Committee members, please see www.aaai.org/Conferences/National/2004/.

Call for Proposals

The Tutorial Forum

The AAAI-04 Program Committee invites proposals for the Tutorial Forum of the Nineteenth National Conference on Artificial Intelligence (AAAI-04). The Tutorial Forum will be held July 25–29, 2004 in San Jose, California. Anyone interested in presenting a tutorial at AAAI-04 should submit a proposal to Matthew Stone, 2004 Tutorial Forum Chair, at the address on page 7.

What Is the Tutorial Forum?

The Tutorial Forum provides an opportunity for junior and senior researchers to spend two days each year freely exploring exciting advances in disciplines outside their normal focus. We believe this type of forum is essential for the cross fertilization, cohesiveness, and vitality of the AI field. We all have a lot to learn from each other; the Tutorial Forum promotes the continuing education of each member of the AAAI.

Topics

AAAI is interested in proposals for advanced tutorials at the leading edge of AI. We especially encourage tutorials taught by a strong team of two established researchers, providing a balanced perspective on a topic of broad potential interest across the AI community. We are interested in tutorials that explore a specific research area in depth by summarizing its recent technical and methodological advances, educating participants about its important outstanding challenges and opportunities, and exploring its general ramifications for AI practice, including training as well as research. Our goal is to present a diverse program that includes core areas of AI, new techniques from allied disciplines that can inform research within AI, and conversely emerging applications of AI techniques to new areas. Previous years' tutorial programs provide an indication of the scope and variety of possible topics. The list is not exclusive; indeed, we are expressly interested in topics that we would not have imagined to mention. Finally, note that we very much welcome proposals for educational approaches that go beyond the traditional format of four-hour tutorials, exploiting the flexibility that the one-fee program offers.

AAAI-02's forum included tutorials on language modeling; AI in space; greedy on-line planning; qualitative spatial and temporal reasoning; practical approaches to handling uncertainty in planning and scheduling; collaborative multi-agent systems; practical machine learning for software engineering; information integration on the web; AI techniques for personalized recommendation; algorithms for combinatorial auctions and exchanges; phase transitions and structure in combinatorial problems; and rational action in autonomous agents. This list serves merely as an example. We are looking for continued innovation in the forum's program that incorporates novel and under-represented topic areas.

Submission Requirements

We need two kinds of information in the proposals: information that will be used for selecting proposals and information that will appear in the tutorial description brochure. The proposal should provide sufficient information to evaluate the quality of the technical content being taught, the quality of the educational material being used, and the speakers' skill at presenting this material. Each proposal should include at least the following:



The Tech Musuem, downtown San Jose.

- *Goal of the tutorial:* Who is the target audience? What will the audience walk away with? What makes the topic innovative?
- *Content:* Detailed outline and list of additional materials, augmented with samples, such as past tutorial slides and survey articles, whenever possible. Be as complete as possible.
- *Tutorial description:* A short paragraph summarizing the tutorial outline.
- *Prerequisite knowledge:* What knowledge is assumed.

Please also submit the following information about the team of presenters: name, mailing address, phone number, e-mail address; background in the tutorial area, including a list of publications and/or presentations; any available examples of work in the area (ideally, a published tutorial-level article or presentation materials on the subject); evidence of teaching experience (courses taught or references); and evidence of scholarship in AI or computer science.

Submission Deadline

Proposals must be received by October 15, 2003. Decisions about the tutorial program will be made by December 1, 2003. Speakers should be prepared to submit completed course materials by May 25, 2004.

Please e-mail proposal material to the tutorial chair at the following address. Hard copy submissions will also be accepted:

- Matthew Stone
Department of Computer Science
Rutgers University
110 Frelinghuysen Road
Piscataway NJ 08854-8019
Telephone: 732 445 3546 / Fax: 732 445 1494
E-mail: mdstone@cs.rutgers.edu

Workshop Program

The AAAI-04 Program Committee invites proposals for the Workshop Program of the American Association for Artificial Intelligence's Nineteenth National Conference on Artificial Intelligence (AAAI-04).

Workshops will be held at the beginning of the conference, July 25–26, 2004. Workshop participants will have the opportunity to meet and discuss issues with a selected focus—providing an informal setting for active exchange among researchers, developers and users on topics of current interest. Members of all segments of the AI community are encouraged to submit proposals.

To foster interaction and exchange of ideas, the workshops will be kept small, with 25–50 participants. Attendance is limited to active participants only. The format of workshops will be determined by their organizers, who are encouraged to leave ample time for general discussion. Workshops will typically be one full day in length, although half-day and two-day proposals will be considered.

Proposal Content

Proposals for workshops should be about two (2) pages in length, and should contain:

- A description of the workshop topic. Identify the specific issues on which the workshop will focus.
- A brief discussion of why the topic is of particular interest at this time.
- A brief description of the proposed workshop format, regarding the mix of events such as paper presentations, invited talks, panels, and general discussion.
- An indication as to whether the workshop should be considered for a half-day, one or two-day meeting.
- The names and full contact information (e-mail and postal addresses, fax and telephone numbers) of the organizing committee—3 to 4 people knowledgeable in the field—and short descriptions of their relevant expertise. Strong proposals include organizers who bring differing perspectives to the workshop topic and who are actively connected to the communities of potential participants.
- A list of potential attendees.

Workshops are an excellent forum for exploring emerging approaches and task areas, for bridging the gaps between AI and other fields or between subfields of AI, for elucidating the results of exploratory research, or for critiquing existing approaches. Because workshops are intended for focused exploration of special topics, topics that are already the subject of regular meetings are not appropriate.

Workshop Organization

Workshop organizers will be responsible for:

- *Producing a call for participation.* The Call is due November 14, 2003. This Call will be mailed to AAAI members by AAAI and placed on the AAAI web site. Organizers are responsible for additional publicity such as distributing the Call to relevant newsgroups and electronic mailing lists, and especially to potential audiences from outside the AAAI community.
- *Selecting participants.* Workshop attendance is by invitation of the organizers. Selection of attendees will be made by the organizers on the basis of submissions due March 12, 2004. Organizers will need to provide AAAI with a preliminary list of the participants by April 23, 2004.



San Jose Convention Center.

- *Coordinating the production of the workshop notes.* AAAI provides a small budget to cover publication, mailing and administrative support. AAAI can reproduce and mail copies of the working notes if materials are received by May 25, 2004. Working notes may contain a collection of statements by participants or other relevant material, but are limited to a total of 200 pages.

Workshop organizers who want to publish the papers from their workshop (or significant portions of it) will have the opportunity to do so through the AAAI Press. The Press (which retains the right of first refusal to publish) will furnish details of its program to interested organizers and authors.

AAAI will provide logistic support, and meeting places for the workshops, and will determine the dates and times of the workshops. AAAI reserves the right to drop any workshop if the organizers miss the above deadlines. Workshops are not to be used as a vehicle for marketing products. All workshop participants must register for the AAAI-04 Technical Program.

Proposal Submission

Workshop proposals should be submitted as soon as possible and must be received no later than October 3, 2003. Email submissions in PDF format are preferred. Organizers will be notified of the committee's decision by October 27, 2003.

The Workshop Program is chaired by Milos Hauskrecht of the University of Pittsburgh and cochaired by Dieter Fox of the University of Washington. Please submit workshop proposals and address inquiries concerning workshops to:

- Milos Hauskrecht
University of Pittsburgh
Computer Science Department
5329 Sennott Square Pittsburgh, PA 15260
Telephone: 412-624-8845
Fax: 412-624-8854
E-mail: milos@cs.pitt.edu /
www.cs.pitt.edu/~milos/

Intelligent Systems Demonstrations

The AAAI Intelligent Systems Demonstrations program showcases state-of-the-art AI implementations and provides AI researchers with an opportunity to show their research in action. Implemented intelligent systems allow us not only to experimentally validate AI research, but also to make AI research accessible to each other, to the broader scientific community, and to the public at large.

Researchers from all areas of AI are encouraged to submit proposals to demonstrate their systems. Submissions will be evaluated on the basis of their innovation, relevance, scientific contribution, presentation, and "user friendliness," as well as potential logistical constraints. This program is primarily to encourage the early exhibition of research prototypes, but interesting mature systems and commercial products are also eligible (commercial sales and marketing activities are not appropriate in the Intelligent Systems Demonstration program, and should be arranged as part of the AAAI-04 Exhibits program). Demonstrations that can be used by the audience and/or that interact with the audience are particularly encouraged.

Demonstration systems should be available as much as possible during the conference exhibition. Each demonstration will have a scheduled and advertised time during which it is the "featured" demonstration. Each accepted demonstration system must be attended by at least one knowledgeable representative (preferably an architect of the system) who will be available to answer in-depth technical questions at scheduled times.

Demonstration proposals must be made electronically using the forms at the AAAI web site. Please check www.aaai.org for further details after October 1, 2003. In addition to contact information, proposals must include the following, all of which must be submitted via the internet:

1. A two-page description in AAAI paper format of the technical content of the demo, including credits and references. These descriptions will appear in the conference proceedings, space permitting.
2. A 150-word summary of the demo in plain text. Please include title, demonstrator names, and affiliation(s). This summary will be used to compile a program for the demonstrations. Please try to keep the descriptions under the 150-word limit.
3. A demo storyboard of not more than six pages total or an informal video of the demo (in MPEG or Quicktime format), that describes how the demonstration will proceed (as opposed to the technical merits of the research being demonstrated). This is the committee's primary method of evaluating your proposal. Please emphasize the elements that make your demonstration exciting and interesting.
4. A detailed description of hardware and software requirements. Demonstrators are encouraged to be flexible in their requirements (possibly with different demos for different logistical situations). Please state what you can bring yourself and what you absolutely must have provided. Generally speaking, we can provide computer monitors and peripherals such as televisions and VCRs, as well as a network connection. Each demonstration will be assigned a booth in the Exhibit Hall.

Demo proposals must be received in their entirety including any supporting materials by Friday, February 20, 2004. Authors will be notified of acceptance by March 19, 2004.

We especially hope that authors of papers accepted for presentation at the conference technical program will be able to demonstrate their research in the AAAI Intelligent Systems Demonstration Program. To present a system demonstration, however, the authors



Downtown San Jose.

must still submit a proposal conforming to the above requirements by the Demonstration program deadline. Submitters who wish to demonstrate intelligent mechanical systems that interact with the real world (aka “robots”) should direct their efforts toward the Robot Exhibition.

If you have any questions or comments about the AAAI Intelligent Systems Demonstration program, we encourage you to address them to the program organizer:

- Chris Welty
welty@us.ibm.com.

Student Abstract & Poster Program

The AAAI-04 committee invites submissions to the student abstract and poster program. The goal of this program is to provide a forum in which students can present and discuss their work during its early stages, meet some of their peers who have related interests, and introduce themselves to more senior members of the field. The program is open to all pre-Ph.D students. Nonstudent advisors or collaborators should be acknowledged appropriately, as coauthors or otherwise. However, students are requested to honor the spirit of the program by submitting only work for which they are primary investigators.

Summary of Dates

Authors must submit six (6) printed copies of a two-page abstract describing their research, to arrive at the AAAI office no later than January 23, 2004. We also request that authors submit the URL of a location where reviewers can access complementary material about the student's research. The URL is critical to reviewers because of the brevity of the hard-copy submission.

Notification of acceptance or rejection of submitted abstracts will be mailed to the author by March 19, 2004. Camera-ready copy of accepted abstracts will be due by April 6, 2004.

Summary of Format

Submissions must be printed on 8 1/2 x 11 inch or A4 paper using 12 point type (10 characters per inch for typewriters). Each page must have a maximum of 38 lines and an average of 75 characters per line (corresponding to the LaTeX article-style, 12 point). All abstracts must be no more than two pages, not including the bibliography. The first two pages must include the following: title; the primary author's full name, affiliation, postal address, phone number, URL (if available), and e-mail address; all coauthors' full names and affiliations; text; and any figures, tables, or diagrams. Up to one additional page may be used exclusively for the bibliography if necessary. Papers exceeding the specified length and formatting requirements are subject to rejection without review.

Submissions to AAAI-04 or Other Conferences

Students are free to submit abstracts for work reported in a regular paper submitted to the AAAI-04 or another conference, but not for work that has already been published. Abstracts will be accepted or rejected for the student session regardless of the outcomes of related paper submissions.

Publication

Accepted abstracts will be allocated two (2) pages in the conference proceedings. Students will be required to transfer copyright of the abstract to AAAI.

Poster Session

Accepted abstracts will be allocated presentation time and space in the student poster display area at the conference. Student authors of accepted abstracts must agree to prepare a poster representing the work described in their abstracts and to be available to discuss their work with visitors during their allocated time in the student poster display area.



AAAI's Mobile Robot Competition began in San Jose in 1992.

Student Abstract Submissions and Inquiries

Please send abstracts to AAAI, *Attn:* AAAI-04 Student Abstracts (the complete address is on page 3).

Registration and call clarification inquiries may be sent to aaai04@aaai.org. All other inquiries and suggestions should be directed to the Student Abstract and Poster Program Cochairs:

- Avì Pfeffer
Division of Engineering and Applied Science
Harvard University
251 Maxwell Dworkin
33 Oxford Street
Cambridge, MA 02138-0001
Telephone: (617) 496-1876
Fax: (617) 496-1066
E-mail: avi@eecs.harvard.edu
- Mark Craven
Department of Biostatistics and Medical Informatics
University of Wisconsin, Madison
1300 University Avenue
Madison, WI 53706
Telephone: (608) 265-6181
Fax: (608) 265-7916
E-mail: craven@biostat.wisc.edu

Ninth AAAI/SIGART Doctoral Consortium

AAAI and ACM/SIGART invite students to apply for the Ninth AAAI/SIGART Doctoral Consortium. The Doctoral Consortium (DC) provides an opportunity for a group of Ph.D. students to discuss and explore their research interests and career objectives with a panel of established researchers in artificial intelligence.

The consortium has the following objectives:

- To provide a setting for mutual feedback on participants' current research and guidance on future research directions
- To develop a supportive community of scholars and a spirit of collaborative research
- To support a new generation of researchers with information and advice on academic, research, industrial, and non-traditional career paths
- To contribute to the conference goals through interaction with other researchers and participation in conference events.

The Doctoral Consortium will be held as a workshop on July 25–26, 2004, immediately before the start of the main conference. Student participants in the Doctoral Consortium will receive complimentary conference registration and a fixed allowance for travel/housing.

Important Dates for Application Submission

- *February 6, 2004*: Application Package Submission Deadline
- *March 19, 2004*: Acceptance Notification
- *July 25-26, 2004*: Doctoral Consortium

The Application Packet

Applicants to the Doctoral Consortium must submit a packet consisting of six copies of the following items. Hard copy submissions are required; no electronic submissions will be accepted.

1. *Thesis Summary*. A two-page thesis summary that outlines the problem being addressed, the proposed plan for research, and a description of the progress to date. Please be sure to distinguish between work that has already been accomplished and work that remains to be done. Be sure to include a title for your work.
2. *Background Information*. Information (at most two pages) on your background and relevant experience. This should include information typically found in a curriculum vita, plus additional information that may indicate your potential contribution to the DC.
3. *Letter of Recommendation*. A letter of recommendation from your thesis advisor. It must include an assessment of the current status of your thesis research, and an *expected date for thesis submission*. In addition, your advisor should indicate what he or she hopes you would gain from participation in the DC.
4. *Participant's Expectations*. A short (one page or less) statement of what you expect to gain from presenting and participating in the DC, as well as what you think you can contribute to the DC.

Mail your submission packet to AAAI (the address is on page 3), *Attn*: AAAI/SIGART Doctoral Consortium.

Review Process

The consortium organizing committee will select participants on the basis of their anticipated contribution to the workshop goals. We solicit applications from any topic area and



San Jose has a vibrant, diverse downtown; for more information, see www.sanjose.org.

methodology within artificial intelligence. Students will be selected who have settled on their thesis direction, but still have significant research to complete. The perfect stage is having just had a research proposal accepted by the thesis committee. Students will be selected based on clarity and completeness of the submission packet, stage of research, advisor's letter, and evidence of promise such as published papers or technical reports.

At the Conference

The organizers invite all students to attend and participate in the Doctoral Consortium, whether or not they apply to present their work. In previous years, many nonpresenting students said they found it useful to observe their peers' presentations and to participate in the ensuing discussions.

All participants selected to present their work at the Doctoral Consortium are expected to be present throughout the consortium. Our experience has been that participants gain almost as much by interacting with their peers as by having their presentations critiqued by the faculty panel. As such, we expect a commitment from participating students to attend the entire DC.

Inquiries

Additional information may be obtained by contacting the organizing committee chair:

- Rob St. Amant
Box Campus Box 8207,
900 Main Campus Drive
Department of Computer Science
North Carolina State University
Raleigh, North Carolina 27695-8207
Telephone: (919) 515-7938
E-mail: stamant@eos.ncsu.edu

See you in San Jose!



For the latest information about
the AAI-04 Conference, please
visit the conference website:

**[http://www.aaai.org/
Conferences/National/2004/](http://www.aaai.org/Conferences/National/2004/)**

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