



Photo courtesy Tom Ryan, Tourism Vancouver

## *Preliminary Call for Papers and Participation*

# **AAAI-07**

**22-26 July 2007**

**Vancouver, British Columbia, Canada**

*Sponsored by the American Association for Artificial Intelligence*

AAAI-07 IS THE TWENTY-SECOND NATIONAL CONFERENCE ON ARTIFICIAL INTELLIGENCE (AI). The purpose of this conference is to promote research in AI and scientific exchange among AI researchers, practitioners, scientists and engineers in related disciplines. AAAI-07 will have multiple technical tracks, student abstracts, poster sessions, invited speakers, and exhibit programs, all selected according to the highest reviewing standards. In this booklet, you will find preliminary calls for papers or proposals or participation for the technical program at the National Conference on Artificial Intelligence (AAAI-07), the AAAI-07 Tutorial Forum, the AAAI-07 Workshop Program, the AAAI-07 Student Abstract and Poster Program, the Twelfth AAAI/SIGART Doctoral Consortium, the AAAI-07 Intelligent Systems Demonstrations, the Sixteenth Annual AAAI Mobile Robot Competition and Exhibition, and the Nineteenth Innovative Applications of Artificial Intelligence Conference, all of which will take place in Vancouver, British Columbia from 22-26 July.

### **The Conference Venue**

Vancouver, British Columbia is a dynamic, multicultural city set in a spectacular natural environment. The site of the 2010 Olympics, British Columbia's majestic mountains, ocean, rainforests, and beautiful foliage make Vancouver one of the most beautiful cities in the world. A clean, safe city, Vancouver was voted the "Best City in the Americas" for 2004 and 2005, based on the categories of ambience, friendliness, culture and sites, restaurants, lodging, and shopping. We look forward to your participation at AAAI-07 in Vancouver, British Columbia, Canada!

AAAI-07 Preliminary Call for Papers

# Twenty-Second National Conference on Artificial Intelligence

July 22–26, 2007 Vancouver, British Columbia

Sponsored by the American Association for Artificial Intelligence

Photo courtesy John Sinai, Tourism Vancouver

**A**AAI-07 is the Twenty-Second National Conference on Artificial Intelligence (AI). The purpose of this conference is to promote research in AI and scientific exchange among AI researchers, practitioners, scientists and engineers in related disciplines. AAAI-07 will have multiple technical tracks, student abstracts, poster sessions, invited speakers, and exhibit programs, all selected according to the highest reviewing standards.

AAAI-07 welcomes submissions on mainstream AI topics as well as novel cross-cutting work in related areas. Topics include but are not limited to the following:

Agents, cognitive modeling and human interaction, commonsense reasoning, constraint satisfaction, evolutionary computation, game playing and interactive entertainment, information integration and extraction, knowledge acquisition and ontologies, knowledge representation and reasoning, machine learning and data mining, model-based systems, natural language processing, planning and scheduling, probabilistic reasoning, robotics, search, semantic web, vision and perception

## Special Tracks

As in AAAI-06, we will be including several special tracks. The Nectar and AI and the Web special tracks are confirmed for AAAI-07. Other tracks are currently under consideration and will be announced in later calls for participation. The AAAI Nectar Papers track encourages cross-fertilization of ideas between specific areas of AI and the general AI community. This track will consist of papers that are based on results that have previously been presented at a sister conference. The Special Track on Artificial Intelligence and the Web focuses on the use and extension of AI techniques and concepts to the World Wide Web.

## Timetable for Authors

*December 1, 2006 - February 1, 2007:* Authors register on the AAAI web site  
*February 1, 2007:* Electronic abstracts due  
*February 6, 2007:* Electronic papers due  
*March 26–28, 2007:* Author feedback about initial reviews  
*April 6, 2007:* Notification of acceptance or rejection  
*April 24, 2007:* Camera-ready copy due at AAAI office

## Author Registration

Authors must register at the AAAI-07 web-based technical paper submission site. The software will assign a password, which will enable the author to log on to submit an abstract 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, 2006.

## 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](http://www.aaai.org)) in the fall of 2006. Papers may be no longer than 6 pages including references, and formatted in AAAI two-column, camera-ready style. We can-

not accept submissions by e-mail or fax. Reviewing for AAAI-07 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-07 web site.

Authors should submit abstracts and papers through the technical paper submission software on or (preferably) before the dates shown in the timetable above. The software will assign paper ID number at the time of the submission.

Authors will receive confirmation of receipt of their papers shortly after submission. AAAI will contact authors again only if problems are encountered with papers. Inquiries regarding lost papers must be made no later than February 13, 2007.

## 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 will be fully detailed at the AAAI-07 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.

Authors will have a limited opportunity to respond to initial reviews. This author's feedback may then be taken into account in the final reviews and recommendations. 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. Final 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 [aaai07@aaai.org](mailto:aaai07@aaai.org). Concerning suggestions for the conference and other inquiries, write to the Program Cochairs. A complete listing of the Senior Program Committee members will be available in the fall.

Robert C. Holte, University of Alberta ([holte@cs.ualberta.ca](mailto:holte@cs.ualberta.ca))  
Adele Howe, Colorado State University ([howe@cs.ColoState.edu](mailto:howe@cs.ColoState.edu))

*Call for Proposals*

# AAAI-07 Tutorial Forum

July 22-23, 2007 Vancouver, British Columbia

*Sponsored by the American Association for Artificial Intelligence*

Photo courtesy John Sinai, Tourism Vancouver

The AAAI-07 Program Committee invites proposals for the Tutorial Forum of the Twenty-Second National Conference on Artificial Intelligence (AAAI-07). The Tutorial Forum will be held July 22-23, 2007 in Vancouver, Canada. Anyone interested in presenting a tutorial at AAAI-07 should submit a proposal to the 2007 Tutorial Forum Cochairs listed below.

## 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 are particularly interested in tutorials that offer two types of knowledge. The first type provides in-depth background tools to help educate researchers and students for the purpose of conducting AI research; examples of this type of tutorials from AAAI-06 include "Empirical Methods for Artificial Intelligence," and "Temporal and Resource Reasoning for Planning, Scheduling and Execution." A second type of tutorial provides a broad overview for an AI area that potentially crosses boundaries with an interesting application area; examples of this type of tutorial from AAAI-06 include "Computational Biology: Perspective and Approaches Based on Feature Extraction and Selection" and "Semantic Web Services."

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.

## 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:

*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, email 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 27, 2006. Decisions about the tutorial program will be made by December 1, 2006. Speakers should be prepared to submit completed course materials by May 25, 2007. Please e-mail proposal material to Carla Gomes and Andrea Danyluk at the following addresses. Hard copy submissions will also be accepted.

## Tutorial Cochairs

Carla Gomes  
Department of Computer Science  
5133 Upson Hall  
Cornell University  
Ithaca, NY 14853, USA  
607-255-9189  
607-255-4428 (fax)  
gomes@cs.cornell.edu

Andrea Danyluk  
Department of Computer Science  
47 Lab Campus Drive  
Williams College  
Williamstown, MA 01267  
413-597-2178  
413-597-4250 (fax)  
andrea@cs.williams.edu

*Call for Proposals*

# AAAI-07 Workshop Program

July 22–26, 2007 Vancouver, British Columbia

*Sponsored by the American Association for Artificial Intelligence*

Photo courtesy John Sinai, Tourism Vancouver

The AAAI-07 Program Committee invites proposals for the Workshop Program of the American Association for Artificial Intelligence's Twenty-Second National Conference on Artificial Intelligence (AAAI-07).

Workshops are tentatively scheduled to be held at the beginning of the conference, July 22–23, 2007. 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 the following:

*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—three or four people knowledgeable in the field—and short descriptions of their relevant expertise. (Please specify main contact.) 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 10, 2006. This Call will be posted 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. Organizers are encouraged to maintain their own web site with updated information about the workshop.

*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 April 10, 2007. Workshop organizers will need to provide AAAI with a preliminary list of the participants by April 25, 2007.

*Coordinating the production of the workshop notes.* AAAI coordinates the collection, production, and distribution of the technical reports or working notes for the workshops. Workshop papers and abstracts must be received by AAAI no later than May 15, 2007, and volumes 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-07 Technical Program.

## Proposal Submission

Workshop proposals should be submitted to the workshop cochairs at [aaai07-workshops@ecn.purdue.edu](mailto:aaai07-workshops@ecn.purdue.edu) as soon as possible and must be received no later than October 6, 2006. PDF format is preferred. Organizers will be notified of the committee's decision by October 27, 2006. Please address inquiries concerning workshop submissions to the email address above.

## Workshop Cochairs:

Simon Parsons  
Department of Computer and Information Science  
Brooklyn College  
City University of New York

Robert Givan  
School of Electrical and Computer Engineering  
Electrical Engineering Building  
Purdue University

*Call for Participation*

# AAAI-07 Student Abstract and Poster Program

July 22-26, 2007 Vancouver, British Columbia

*Sponsored by the American Association for Artificial Intelligence*

Photo courtesy John Sineai, Tourism Vancouver

**A**AAI-07 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.

## Submissions and Dates

Electronic submission in PDF format is required. Students should submit an abstract describing their research no later than January 25, 2007. Abstracts must be no longer than 2 pages including references, and formatted in AAAI two-column, camera-ready style. Instructions about how to submit abstracts will be available at the AAAI conference web site ([www.aaai.org/Conferences/AAAI/aaai07.php](http://www.aaai.org/Conferences/AAAI/aaai07.php)) after October 1, 2006. Papers exceeding the specified length and formatting requirements are subject to rejection without review.

The abstract 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. The abstract should also contain a 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 23, 2007. Camera-ready copy of accepted abstracts will be due by April 10, 2007.

## Submissions to AAAI-07 or Other Conferences

Students are free to submit abstracts for work reported in a regular paper submitted to the AAAI-07 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.

## Student Abstract Inquiries

Registration and call clarification inquiries may be sent to:

AAAI-07 Student Abstracts  
American Association for Artificial Intelligence  
445 Burgess Drive  
Menlo Park, CA 94025-3442 USA  
[aaai07@aaai.org](mailto:aaai07@aaai.org)

All other inquiries and suggestions should be directed to the Student Abstract and Poster Program Cochairs:

Mehran Sahami  
Google Inc.  
[sahami@google.com](mailto:sahami@google.com)

Kiri Wagstaff  
Jet Propulsion Laboratory  
[kiri.wagstaff@jpl.nasa.gov](mailto:kiri.wagstaff@jpl.nasa.gov)

Matt Gaston  
University of Maryland Baltimore County  
[mgasto1@cs.umbc.edu](mailto:mgasto1@cs.umbc.edu)

*Call for Applications*

# Twelfth AAI/SIGART Doctoral Consortium

July 22–26, Vancouver, British Columbia

Sponsored by the American Association for Artificial Intelligence  
Collocated with AAI-07

Photo courtesy John Sinai, Tourism Vancouver

AAI and ACM/SIGART invite students to apply for the Twelfth AAI/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: (1) to provide a setting for mutual feedback on participants' current research and guidance on future research directions; (2) develop a supportive community of scholars and a spirit of collaborative research; (3) support a new generation of researchers with information and advice on academic, research, industrial, and non-traditional career paths; and (4) 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 22–23, 2007, 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 2, 2007: Application Package Submission Deadline

March 23, 2007: Acceptance Notification

July 22-23, 2007: Doctoral Consortium

## The Application Packet

Applicants to the Doctoral Consortium must submit the following materials via the AAI online submission site. Please combine all materials into one PDF document, formatted for US letter paper (8.5 x 11").

**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. The most successful applications directly address all three of these components. 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. The thesis summary MUST be in AAI two-column format, with references.

**Curriculum Vita.** Include a CV (at most two pages) that describes your background and relevant experience (research, education, employment). Your CV MUST include your anticipated graduation date, or it may be rejected without review. Please include any additional items that may indicate your potential contribution to, and benefit from, the DC.

**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.

**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. For best consideration, your statement must address both of these expectations.

Please submit your application materials via the online AAI Doctoral Consortium submission site ([www.aaai.org/Conferences/AAAI/aaai07.php](http://www.aaai.org/Conferences/AAAI/aaai07.php)). Full instructions regarding your submission will be available at this site in December 2006.

## 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 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.

## Acknowledgements

Support for the 2007 Doctoral Consortium is provided by AAI and ACM's SIGART.

## Inquiries

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

Terran Lane  
The University of New Mexico  
Department of Computer Science  
Mail stop: MSC01 1130  
1 University of New Mexico  
Albuquerque NM 87131-0001 USA  
505-277-9609 (phone)  
[www.cs.unm.edu/~terran/](http://www.cs.unm.edu/~terran/)  
[terran@cs.unm.edu](mailto:terran@cs.unm.edu)

Call for Proposals

# Intelligent Systems Demonstrations

July 22–26, 2007 Vancouver, British Columbia

Sponsored by the American Association for Artificial Intelligence  
Held in Conjunction with AAAI-07

Photo courtesy John Sinai, Tourism Vancouver

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 usability, 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-07 Exhibits program). Demonstrations that can be used by the audience and/or that interact with the audience are particularly encouraged.

It is likely that this program will be part of a conference-wide poster and demonstration session one evening during the conference. Demonstration systems should be available during the entire session. 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/Conferences/AAAI/aaai07.php](http://www.aaai.org/Conferences/AAAI/aaai07.php) for further details after October 1, 2006. In addition to contact information, proposals must include the following items. All should be submitted via the online form, unless a video is being submitted. Please send videos directly to the cochairs.

*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.*

*A 150-word summary of the demonstration in plain text. Please include title, demonstrator names, and affiliation(s). This summary will be used to compile a program for the demonstrations. Please keep the descriptions under the 150-word limit.*

*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.*

*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 TVs and VCRs, as well as a network connection. Each demonstration will be assigned a table-top in the exhibition area.

Demo proposals must be received in their entirety, including any supporting materials, by Tuesday, April 3, 2007. Authors will be notified of acceptance by April 16, 2007.

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 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 chair, Rob Miller ([rcm@mit.edu](mailto:rcm@mit.edu)).



Photo courtesy Tourism Vancouver

*Call for Participation*

# Sixteenth Annual AAAI Mobile Robot Competition and Exhibition

July 22–26, 2007 Vancouver, British Columbia

*Sponsored by the American Association for Artificial Intelligence*

Photo courtesy John Sinai, Tourism Vancouver

**W**e invite you to participate in the Sixteenth Annual AAAI Mobile Robot Competition and Exhibition, sponsored by the American Association for Artificial Intelligence. The Competition brings together teams from universities, colleges, and research laboratories to compete and to demonstrate cutting edge, state of the art research in robotics and artificial intelligence.

The 2007 AAAI Mobile Robot Contest and Exhibition will be held in Vancouver, Canada, as part of AAAI-07, from July 22-26, 2007. The program will include the Scavenger Hunt, Human-Robot Interaction event, Integration Challenge, the Robot Exhibition, and the Mobile Robot Workshop. Registration and full details of the events will soon be available at the competition website. You will be required to complete the AAAI registration form as well and submit it with your payment.

## Scavenger Hunt

In this competition, robots are given a listing of objects that they must locate and recognize. In order to determine what these objects look like, the robots are given an opportunity to search the web for images of the objects in their list before starting their search. This competition attempts to push the state of the art of semantic image understanding by requiring that robots make use of the wealth of unstructured image data that exist on the Internet today.

We welcome a variety of teams to enter with one or more robots and/or human operators. More specific rules and guidelines will be posted shortly. We particularly encourage object recognition researchers and urban search and rescue teams to consider joining this event.

## Human-Robot Interaction

This event will take the place of the Robot Host event from past years and will involve interacting with conference attendees to achieve a particular task in an unstructured environment. The goal is to entertain attendees using robots and to provide AI and robotics researchers a refreshing venue for demonstrating AI techniques for interactive, entertainment, and social robots. Some of the topics include navigation, cognitive modeling, perception, emotional state modeling, natural language processing, and human-robot interaction.

Entrants may be any system that demonstrates some level of AI. In particular, we are looking for systems that include human-robot interaction as part of their entry.

## Integration Challenge

The goal of the integration challenge is to integrate various existing algorithms and architectural components that have been developed independently within one architecture to produce a working system on a mobile robot that is (1) robust, (2) fault-tolerant, (3) flexible, and (4) easily adaptable to new tasks. All participating teams will be provided with a set

of existing open-source components available for the research community (e.g., speech recognizers, vision processing components, etc.).

## The Robot Exhibition

The mission of the Robot Exhibition is to demonstrate state of the art research in a less structured environment than the competition events. The exhibition gives researchers an opportunity to showcase current robotics and embodied-AI research that does not fit into the competition tasks. In addition to research, exhibits that demonstrate how robotics can be used to enhance education in AI and other related courses are highly encouraged.

## The Mobile Robot Workshop

A robotics workshop will be held on the last day of the conference. Teams who receive travel support must attend and present at the workshop. All other participants are strongly encouraged to attend and present. A research paper will be required within one month after the end of the workshop, and will be published in a workshop proceedings by AAAI.

## Travel Funding

Limited travel funding will be available. If you wish to receive travel funding, the deadline for registering your intent to participate is May 15, 2007 (via the web registration).

## Participation Fees

Each team will be required to pay a \$250 participation fee that will help AAAI to defray the cost of the competition. This fee is in line with fees charged by other competitive robotic events, and helps AAAI to move towards a sustainable funding model for the annual robot competition.

General Cochairs: Jeffrey Forbes ([forbes@cs.duke.edu](mailto:forbes@cs.duke.edu)) and Paul Oh ([paul@cbis.ece.drexel.edu](mailto:paul@cbis.ece.drexel.edu))

IAAI-07 Call for Papers

## Nineteenth Innovative Applications of Artificial Intelligence Conference

July 24–26, 2007 Vancouver, British Columbia

Sponsored by the American Association for Artificial Intelligence

Collocated with AAAI-07

Photo courtesy John Sinai, Tourism Vancouver

The Nineteenth Annual Conference on Innovative Applications of Artificial Intelligence (IAAI-07) will focus on successful applications of AI technology. The conference will use technical papers, invited talks, and panel discussions to explore issues, methods, and lessons learned in the development and deployment of AI applications; and to promote an interchange of ideas between basic and applied AI.

IAAI-07 will consider papers in two tracks: (1) deployed application case studies and (2) emerging applications or methodologies. Submissions should clearly identify which track they are intended for, as the two tracks are judged on different criteria. Applications are defined as deployed once they are in production use by their final end-users (not the people who created the application) for sufficiently long that experience can be reported (usually greater than three months of use by the end-users).

### Deployed Application Case Study Papers

Case-study papers must describe deployed applications with measurable benefits that include some aspect of AI technology. The case study may evaluate either a stand-alone application or a component of a complex system.

Review criteria for deployed applications are: significance of the application, use of AI technology, innovation, evaluation, technical quality, and clarity. The reviewers will grade the deployed application papers on each of the following issues:

*Task or Problem Description:* Describe the task the application performs or the problem it solves. State the objectives of the application and explain why an AI solution was important. If other solutions were tried and failed outline these solutions and the reasons for their failure.

*Application Description:* Describe the application, providing key technical details about design and implementation. What are the system components, what are their functions, and how do they interact? What languages and tools are used in the application? How is knowledge represented? What is the hardware and software environment in which the system is deployed? Provide examples to illustrate how the system is used.

*Uses of AI Technology:* On what AI research results does the application depend? What key aspects of AI technology allowed the application to succeed? How were the techniques modified to fit the needs of the application? If applicable, describe how AI technology is integrated with other technology. If a commercial tool is used, explain the decision criteria used to select it. Describe any insights gained about the application of AI technology. What AI approaches or techniques were tried and did not work? Why not?

*Application Use and Payoff:* How long has this application been deployed? Explain how widely, how often, and by whom the application is being used. Also describe the application's payoff. What measurable benefits have resulted from its use? What additional benefits do you expect

over time? What impacts has it had on the users' business processes?

*Application Development and Deployment:* Describe the development and deployment process. How long did they take? How many developers were involved? What were the costs? What were the difficulties, and how were they overcome? What are the lessons learned? What, if any, formal development methods were used?

*Maintenance:* Describe your experience with and plans for maintenance of the application. Who maintains the application? How often is update needed? Is domain knowledge expected to change over time? How does the design of the application facilitate update?

Original papers on the deployment issues in AI applications are welcome, even if other papers on the AI technology have been presented at or submitted to other conferences. We encourage updates on applications that have been in use for an extended period of time (i.e., multiple years). Each of the accepted deployed application papers will receive the IAAI "Innovative Application" Award.

### Emerging Application or Methodologies Papers

The goal of the emerging application track is to "bridge the gap" between basic AI research and deployed AI applications, by discussing efforts to apply AI tools, techniques, or methods to real world problems. Emerging applications are on aspects of AI applications that are not appropriate for deployed application case studies, or are not sufficiently deployed to be submitted as case studies. This track is distinguished from reports of scientific AI research appropriate for AAAI's National Conference in that the objective of the efforts reported here should be the engineering of AI applications.

Emerging application papers may include any aspects of the technology, engineering, or deployment of AI applications, including discussions of prototype applications; performance evaluation of AI applications; ongoing efforts to develop large-scale or domain-specific knowledge bases or ontologies; development of domain or task focused tools, techniques, or methods; evaluations of AI tools, techniques or methods for domain suitability; unsuccessful attempts to apply particular tools, techniques or methods to specific domains (which shed insight on the applicability and limitations of the tool, technique or method); system architectures that work; scalability of techniques; integration of AI with other technologies; development methodologies; validation and verification; lessons learned; social and other technology transition issues.

The following questions will appear on the review form for emerging technology papers. Authors are advised to bear these questions in mind while writing their papers. Reviewers will look for papers that meet at least some (although not necessarily all) of the criteria in each category.

*Significance:* How important is the problem being addressed? Is it a difficult or simple problem? Is it central or peripheral to a category of applications? Is the tool or methodology presented generally applicable

or domain specific? Does the tool or methodology offer the potential for new or more powerful applications of AI?

*AI Technology:* Does the paper identify AI research needed for a particular application or class of applications? Does the paper characterize the needs of application domains for solutions of particular AI problems? Does the paper evaluate the applicability of an AI tool or methodology for an application domain? Does the paper describe AI technology that could enable new or more powerful AI applications?

*Innovation:* Does the tool, technique, or method advance the state-of-the-art or state-of-the-practice of AI technology? Does the tool, technique, or method address a new or previously reported problem? If it is a previously reported problem, does the tool, technique, or method solve it in a different, new, more effective, or more efficient way? Does the reported work integrate AI with other AI or non-AI technologies in a new way? Does the work provide a new perspective on an application domain? Does the work apply AI to a new domain?

*Content:* Does the paper motivate the need for the tool or methodology? Does the paper adequately describe the task it performs or the problem it solves? Does it provide technical details about the design and implementation of the tool or methodology? Does the paper clearly identify the AI research results on which the tool or methodology depends? Does it relate the tool or methodology to the needs of application domains? Does it provide insights about the use of AI technology in general or for a particular application domain? Does it describe the development process and costs? Does it discuss estimated or measured benefits? Does it detail the evaluation method and results?

*Evaluation:* Has the tool or methodology been tested on real data? Has it been evaluated by end users? Has it been incorporated into a deployed application? Has it been compared to other competing tools or methods?

*Technical Quality:* Is the paper technically sound? Does it carefully evaluate the strengths and limitations of its contribution? Are the results described and evaluated? Are its claims backed up? Does it identify and describe relevant previous work?

*Clarity:* Is the paper clearly written? Is it organized logically? Are there sufficient figures and examples to illustrate the key points? Is the paper accessible to those outside the application domain? Is it accessible to those in other technical specialties?

### Invited Talks and Panels

Nominations and suggestions for invited talks and panels are welcome and will be considered by the program committee. Invited talks and panels should address issues or themes in the development and deployment of AI applications. Invited speakers should be distinguished members of the research, business, or government communities who have special insights or experiences relating to directions of AI development. Invited speaker nominations should include full contact information, and a preliminary title and abstract of the talk. Panels should focus on the issues underlying AI applications, and should include panelists with a diversity of viewpoints or interests. Case studies can be used to illustrate the issues, but should not be the principal focus of the panels or invited talks. Panel proposals should include a description of the topic, contact information for the organizer, a moderator and list of participants.

### Submission Format

Electronic submissions are required. Papers must be in trouble-free, high resolution PDF format and formatted for United States Letter (8.5" x 11") paper. Submissions need to be in AAAI two-column format, ([www.aaai.org/Publications/Author/author.php](http://www.aaai.org/Publications/Author/author.php)). Deployed papers can be up to eight (8) pages. Emerging papers are expected limited to six (6) complimentary pages and two (2) optional additional pages at \$275 each. The title page does not count as one of these pages.

Papers must have a title page, including the title of the paper; the track to which it is submitted; the names, affiliations, postal and e-mail addresses, and telephone and fax numbers of all authors; a designation of the application domain(s); identification of AI techniques employed or issues addressed; an indication of application status (e.g., feasibility analysis, research prototype, operational prototype, deployed application, etc.); and an abstract of fewer than 200 words.

Authors should register on the IAAI-07 web-based paper submission software at [www.aaai.org/Conferences/IAAI/iaai07.php](http://www.aaai.org/Conferences/IAAI/iaai07.php). A login and password, as well as detailed instructions about how to submit an electronic paper, will be sent to the author in a subsequent email message. Authors must then submit a formatted electronic version of their paper through this software no later than Tuesday, January 23, 2007. We cannot accept papers submitted by email or fax.

Submissions received after the deadlines or that do not meet the length or formatting requirements detailed above and at the IAAI-07 web site will not be accepted for review. Notification of receipt of the electronic paper will be mailed to the first author (or designated author) soon after receipt. If there are problems with the electronic submission, AAAI will contact the primary author by email. Papers, invited speaker nominations, and panel proposals will be reviewed by the Program Committee and notification of acceptance or rejection will be mailed to the contact author in early March. PDFs of accepted papers will be due on April 3, 2007. Authors will be required to transfer copyright.

Registration or clarification inquiries may be sent to AAAI at [iaai07@aaai.org](mailto:iaai07@aaai.org), 650-328-3123, or 650-321-4457 (fax).

William Cheetham, Conference Chair  
General Electric Global Research