AAAI News

*Winter News from the American Association
for Artificial Intelligence*

Fellows Nominations Solicited

The 1999 Fellows Selection Committee is currently accepting nominations for AAAI Fellow. The AAAI Fellows Program is designed to recognize people who have made significant, sustained contributions to the field of artificial intelligence, usually over at least a ten year period. All regular members in good standing are encouraged to consider nominating a candidate. Two references (at least one from a current AAAI Fellow) must accompany nominations. For further information about the Fellows Program or to receive nomination and reference forms, please contact AAAI at 650-328-3123; by fax at 650-321-4457; or by e-mail at fellows@aaai.org. Nomination materials are also available on our web site. The deadline for nominations is February 15, 1999.

AAAI-99

Mark your calendars now for AAAI-99! The Sixteenth National Conference on Artificial Intelligence (AAAI-99) will be held July 18–22, 1999 in Orlando, Florida, at the Omni Rosen Hotel and adjacent Orange County Convention Center. The conference will feature the usual array of programs, including the Tutorial Forum, Workshop Program, Innovative Applications of Artificial Intelligence, Hall of Champions, Mobile Robot Competition and Exhibition, and Robot Building Laboratory. The Intelligent Systems Demonstrations Program will continue for its second year, after a highly successful debut at AAAI-98 in Madison, Wisconsin.

The AAAI-99 keynote address, entitled , "Why I Am Optimistic," will be given by Patrick Winston. Winston is Ford Professor of Artificial Intelligence and Computer Science at the Massachusetts Institute of Technology, and was the director of the MIT Artificial Intelligence Laboratory from 1972 to 1997. Professor Winston is also chairman and cofounder of Ascent Technology, Inc., and is a member of the Naval Research Advisory Committee (NRAC). He is a Fellow and past president of the American Association for Artificial Intelligence.

Plan to Bring the Whole Family!

AAAI is happy to announce its sponsorship of the CHIKids program during AAAI-99. This program, which provides childcare for conference attendees' children, first started two years ago at the SIGCHI-96. It combines traditional childcare with creative and educational opportunities to use technology for an extended period of time. Children, ages 7 and up, can participate in a variety of activities, including the Newsroom, the Multimedia Storytelling area, or the Technology Workouts/CD-ROM Fieldtrips. This program, combined with the host of family entertainment in Orlando, makes AAAI-99 the perfect destination for a family vacation.

Please check the AAAI web site for all the details and deadlines for these programs as well as announcements about other new features.

A few important deadlines to note on your calendar:

- *January 20:* AAAI-99 Electronic Title Pages, IAAI-98 Papers, and Student Abstracts due
- *January 21:* AAAI-99 Papers due
- *February 5:* Doctoral Consortium Submission Due
- *March 11:* Workshop Submissions due
- *February 26:* Intelligent Systems Demonstration Proposals due

Information about the conference is available by writing to ncai@aaai.org or www.aaai.org/Conferences/National/1999/aaai-iaai99.html.

Collocated Conferences in Orlando

AAAI is delighted to announce the collocation in Orlando of the following AI-related events:

- 1999 Genetic and Evolutionary Computation Conference (GECCO-99)—A Joint Meeting of the Eighth International Conference on Genetic Algorithms (ICGA-99) and the Fourth Annual Genetic Programming Conference (GP-99 Omni Rosen Hotel, Orlando, Florida, July 14–17, 1999 (www-illigal.ge.uiuc.edu/gecco/)
- Sixth International Workshop on Agent Theories, Architectures and Languages (ATAL-99), July 15–17, 1999 (www.elec.qmv.ac.uk/dai/atal)

AAAI-99 Workshop Program

The following 6 workshops have been chosen for inclusion in the AAAI-99 Workshop Program. The workshops will be held Sunday and Monday, July 18–19 in Orlando, Florida. Several other workshop proposals are pending, so please check the AAAI web site for updated information about the Workshop Program. All AAAI members will receive a Call for Participation in January. Submissions are due March 11, 1999.

- *Knowledge Management and Case-Based Reasoning.* Cochairs: David W. Aha (aha@aic.nrl.navy.mil), Irma Becerra-Fernandez (becferi@fiu. edu), Frank Maurer (maurer@ cpsc.ucalgary.ca), and Hector Munoz-Avila: (munoz@cs.umd.edu)
- *Spatial and Temporal Reasoning for Collaborating Mobile Agents.* Chair: Frank D. Anger (fanger@nsf.gov)
- *Mixed-Initiative Intelligence.* Chair: Michael T. Cox (mcox@cs.wright.edu)
- *Agent-Based Systems in the Business*

Context. Chair: Brian Drabble (drabble@cirl.uoregon.edu)

- *Intelligent Information Systems* (two-day workshop). Cochairs: Kristian J. Hammond (hammond@ils.nwu.edu) and Larry Birnbaum (birnbaum@ils.nwu.edu)
- *Machine Learning for Information Extraction.* Chair: Mary Elaine Califf (mecalif@ilstu.edu)

AAAI-99 Student Programs

AAAI is pleased to announce the continuation of its Student Abstract and Poster Program, the SIGART/AAAI Doctoral Consortium, and the AAAI Scholarship and Volunteer Programs. Students interested in attending the National Conference on Artificial Intelligence in Orlando, July 18–22, 1999, should consult the AAAI web site for further information about all these programs at www.aaai.org/Conferences/National/student.html.

Student Abstract and Poster Program

AAAI-99 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. Accepted abstracts will be allocated presentation time and space in the student poster display area at AAAI-99. Submissions are due at the AAAI office no later than January 20, 1999.

Doctoral Consortium

ACM/SIGART and AAAI invite students to participate in the Fourth SIGART/AAAI 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 together with a panel of established researchers. The Doctoral Consortium will be held as a workshop on July 18–19, 1999. Student participants in the Doctoral Consortium will receive complimentary conference registration and a travel reimbursement. To support additional feedback on students' research, each DC participant will be given a place at the AAAI Student Poster Session. Submissions are due at the AAAI office no later than February 5, 1999.

Scholarship Program

The Scholarship Program provides partial travel support and a complimentary technical program registration for students who (1) are full-time undergraduate or graduate students at colleges and universities; (2) are members of AAAI; (3) submit papers to the technical program or letters of recommendation from their faculty adviser; and (4) submit scholarship applications to AAAI by April 15, 1999. In addition, repeat scholarship applicants must have fulfilled the volunteer and reporting requirements for previous awards.

In the event that scholarship applications exceed available funds, preference will be given to students who have an accepted technical paper and then to students who are actively participating in the conference in some way. However, all eligible students are encouraged to apply.

After the conference, an expense report will be required to account for the funds awarded. For further information about the Scholarship Program or to obtain an application, please contact AAAI at scholarships@aaai.org, or 445 Burgess Drive, Menlo Park, CA 94025, (650) 328-3123.

All student scholarship recipients will be required to participate in the Student Volunteer Program to support AAAI organizers in Orlando. The Volunteer Program is an essential part of the conference, and student participation is a valuable contribution.

Students not requiring travel assistance should only apply for the Volunteer Program, which provides complimentary registration to full-time students, including conference proceedings, in exchange for assisting AAAI-99 organizers in Orlando. This program does not provide any scholarship funds and is designed for local students or students who have other sources for travel funds. AAAI membership is required for eligibility. For further information regarding the Student Volunteer Program, please contact AAAI at volunteer@aaai.org or the 1999 Volunteer Coordinator, Thomas Haynes, at thomas@adept.cs.twsu.edu. The deadline for volunteer applications is May 31, 1999.

1999 Spring Symposium Series

The 1998 Spring Symposium Series will be held March 23–25, 1998 at Stanford University and will feature seven symposia on the following subjects:

- Agents with Adjustable Autonomy
- AI Equipment Maintenance Service and Support
- Artificial Intelligence and Computer Games
- Hybrid Systems and AI: Modeling, Analysis and Control of Discrete + Continuous Systems
- Intelligent Agents in Cyberspace
- Predictive Toxicology of Chemicals: Experiences and Impact of AI Tools
- Search Techniques for Problem Solving under Uncertainty and Incomplete Information

Registration materials have been mailed to all AAAI members and to invited participants. They are also available on the AAAI web site. Please note that the deadline for registration for invited participants is February 5, and the general registration deadline is February 26.

1999 Fall Symposium Series

The following five symposia have been selected for the 1999 Fall Symposium Series. The exact dates and location of the symposia will be posted on the AAAI web site in December 1998.

- *Modal and Temporal Logics Based Planning for Open Networked Multimedia Systems.* Chair: Fawzi Daoud (daoud @cs.toronto.edu)
- *Narrative Intelligence.* Cochairs: Michael Mateas (michaelm@cs.cmu.edu) and Phoebe Sengers (phoebe@zkm.de)
- *Question Answering Systems.* Cochairs: Vinay K. Chaudhri (vinay@ai.sri.com) and Richard Fikes (fikes@hpp.stanford.edu)

The fruits of AI research to date have been many and some quite significant such as graphic user interfaces and object-oriented programming to name two of the most ubiquitous. Clearly, the research agenda for AI continues to challenge and stimulate the AI community.

- *Psychological Models of Communication in Collaborative Systems.* Chair: David Traum (traum@cs. umd.edu)
- *Using Layout for the Generation, Understanding, or Retrieval of Documents.* Chair: Donia Scott (Donia. Scott@itri.brighton.ac.uk)

The deadline for submissions is March 31, 1999. The Call for Participation has been sent to all AAAI members and posted on the AAAI web site.

AAAI Executive Council Minutes

Through e-mail discussions and votes, the AAAI Executive Council has taken the following actions since the July 26 meeting in Madison, Wisconsin.

Bruce Porter and Henry Kautz were appointed by AAAI President David Waltz and approved by the Executive Council as Program Cochairs for AAAI-00 in Austin, Texas.

The Executive Council has approved a proposal by David Miller of the KISS Institute of Practical Robotics to hold the high school National Botball finals at AAAI-99, drawing on the winners from the contests in Florida; Washington, D.C.; and California. The top eight teams will be given travel grants on the order of $3K each. The total cost is anticipated at $25–30K.

The Executive Council allocated an additional $5,000 to the PATHFINDER (AI Information) project, currently being directed by Bruce Buchanan. This project will result in a set of web pages with pointers to a wide variety of AI resources. In addition, Buchanan will collaborate with Raj Reddy to develop a plan and proposal for collecting, digitizing, and archiving videotapes and films about AI for instructional purposes.

AAAI President David Waltz and Publications Chair Kenneth Ford have approved a proposal from Steve Minton and Joe Halpern to list AAAI as a sponsor of the online Computing Research Repository (CoRR) preprint server. Other sponsors include ACM, the Los Alamos e-Print archive, and NCSTRL (Networked Computer Science Technical Reference Library). AAAI has agreed to encourage authors who submit preprints to our site to also submit their preprints to the CoRR site. Current AAAI preprint authors will also be notified of this opportunity.

AAAI Member News

The National Science Foundation (NSF) has named University of Pennsylvania computer science and engineering professor Ruzena Bajcsy, Ph.D., to be Assistant Director for NSF's Computer and Information Science and Engineering Directorate (CISE). Bajcsy will assume her new position in December, replacing Juris Hartmanis of Cornell University.

Bajcsy is a pioneering researcher in machine perception, robotics, and artificial intelligence. She is a professor both in the Computer and Information Science Department and in the Mechanical Engineering and Applied Mechanics Department and is a member of the Neuroscience Institute in the School of Medicine. She is also director of the university's General Robotics and Active Sensory Perception Laboratory, which she founded in 1978. Bajcsy is the sixth person to be named to this position since the directorate was created in 1986. Her selection followed a national search chaired by Stanford University Dean of Engineering John Hennessy.

The degree of Doctor Honoris Causa has been awarded to Wolfgang Wahlster (Director of DFKI, the German Research Center for AI) by the Institute of Technology at Linkoeping University, Sweden. After his lecture entitled "Language Engineering: Integrating Statistical and Symbolic Methods for Spoken Dialog Systems" he received the traditional pleated hat, a golden ring and the diploma during a conferment ceremony on June 6, 1998. The previous foreign recipients of this honorary degree were Grace Murray Hopper and John McCarthy. The laudatio prepared by Erik Sandewall highlighted the candidate's outstanding contributions to the areas of intelligent user interfaces, multimodal presentation planning, user modeling, and speech translation. His key role in establishing DFKI as a center of excellence for the theory and application of AI was also recognized. Wolfgang Wahlster has been a AAAI Fellow since 1993.

The degree of Laurea Honoris Causa was awarded to Peter L. Hammer (Director, Rutgers Center for Operations Research, Rutgers University) by La Sapienza University in Rome on March 23, 1998. The motivation on the diploma states,

> He has given fundamental contributions to the solution of important problems of recognition, synthesis, explanation, choice, and decision through the methods of Mathematical Logic and Combinatorics. He has vigorously promoted the diffusion and the use of quantitative methods for Science, Technology, and Society.

AAAI National Conference Report

The Fifteenth National Conference on Artificial Intelligence (AAAI-98), held 26–30 July in Madison, Wisconsin, car-

ried on the time-honored tradition of providing a venue for researchers, practitioners, and funders of the field to gather. Not only is the conference a place to share and learn about the current state of AI but also a place to stand back from one's own area(s) of expertise to examine progress in the diversity of disciplines that make up AI.

AAAI-98: This Year's National Conference on AI an Indicator of the Field's Vitality and Diversity

Because AI is concerned with the understanding and modeling of intelligence, it is by definition a broad field encompassing a wide range of technology pursuits, such as vision, audition, gesture and face recognition, tactile recognition, natural language, and speech recognition. It also includes more cerebral functions, such as planning, scheduling, diagnosis, chess playing, and data mining.

Application developers are well aware that it is often important to incorporate more than one AI-based algorithm into any given application. Indeed, intelligence is not simply the ability to see, or plan, or understand what someone says to you at the grocery store. In humans, intelligence is a wondrously complex set of capabilities orchestrated by the various parts of the human brain. Such complex interconnections and interdependencies are also characteristic of AI.

Providing a Common Ground

Providing a common ground poses significant challenges for the American Association for Artificial Intelligence (AAAI) in a field that is increasingly specialized; some call it fragmented. As researchers pursue their own lines of study, AAAI works to create a conference that offers a place for cross-fertilization and synergy, a place where attendees can stand back and examine the field as a whole, exploring other branches beyond their own.

The table of contents for the 1998 conference proceedings (available through AAAI Press) is a quick walk through many of the areas that make up AI, such as intelligent agents, automated reasoning, constraint satisfaction and search, evolvable hardware, knowledge representation, learning, natural language, nonmonotonic reasoning, planning, and robotics. Each of these areas, in turn, has a variety of approaches within it, all of which illustrates the diversity that is the field of AI.

In its continuing efforts to provide a common meeting ground for the various threads of AI, for the first time nine related conferences were colocated with AAAI-98: (1) Tenth Innovative Applications of Artificial Intelligence (IAAI-98), (2) Inductive Logic Programming, (3) Genetic Programming, (4) Genetic Algorithms, (5) Computational Learning Theory, (6) Machine Learning, (7) Uncertainty in AI, (8) Text and Discourse, and the (9) Cognitive Science Society. AAAI-98 also included a panel discussion with eight of the organizers of the colocated conferences. Each panelist was asked to identify the most interesting or most important result in his/her field at this point in time that they felt is not well understood or appreciated by the larger AI audience. Although the presentations were brief, they were varied and offered a useful overview and "teaser" of the colocated conferences. For example, David Page, chair of the Inductive Logic Programming Conference, asserted that first-order logic offers a useful representation for knowledge discovery. He described drug design by way of illustration. John Koza, chair of the Genetic Programming Conference briefly described genetic programming, techniques for a computer system to automatically create computer programs. He then informed attendees that "there is considerable evidence that it works on a wide variety of problems; is scalable; and, most important, it's useful."

Multithreaded Program

AAAI-98, sponsored by AAAI and cosponsored by the Defense Advanced Research Projects Agency (DARPA), the National Aeronautics and Space Administration (NASA) Ames Research Center, Microsoft Corporation, and the National Science Foundation, in cooperation with the University of Wisconsin at Madison, included many different components:

Tutorials, workshops, and 143 technical papers: The technical track of the conference unveiled some of the latest scientific research and advances in the field of AI throughout the five days of the conference.

Mobile Robot Exhibition and Competition: This ever-popular component of the national conference assembled some three dozen robots this year from many of the leading robot research labs. Some of the robots competed in the two events that tested abilities in planning and navigation; others showed some of the diverse and creative kinds of robot that are being dreamed up and built in labs—from robotic office plants to search and rescue teams.

Hall of Champions: Last year's victory by IBM's deep blue chess machine over world chess champion Gary Kasparov was a milestone in the world of AI. However, deep blue is not the only smart game-playing computer that has achieved world-class play. Back for its second year, this tournament again pitted world champion computers against human champions in Bridge, Backgammon, Scrabble, Poker, and Go. Conference attendees also had time to try their hand against the cyberchampions. A related panel discussion explored the relationship between game playing and real-world problems.

IAAI-98: This conference highlighted 22 cutting-edge computer systems that show new trends in the use of AI for solving problems in industry, government, and education. In this, its tenth year, the IAAI conference had an expanded format, including not only fully deployed systems but also emerging, experimental systems that offer promise for intriguing new directions for AI (see discussion later).

15 invited talks and panels: These contributions brought together leading specialists and AI notables to discuss technical topics such as an interactive museum tour-guide robot, the anthropomorphism of computers, AI in medicine, natural language, AI and science fiction, and experiments in musical intelligence.

Robot-building lab: Back by popu-

lar demand, the lab again enabled attendees to build and race small Lego-based robots and learn some of the basics of robotics.

Intelligent systems demonstrations: There is nothing quite like seeing a working program. This new component of the conference showcased 22 prototype systems, giving a glimpse of today's experiments that portend tomorrow's systems.

Looking toward Next Year

In his AAAI presidential address, David Waltz outlined what AI is doing well and what it needs to focus on in the future. The good news, according to Waltz, is that AI is thriving. There is a significant industrial effort and applications in the range of "impressive and interesting" at IAAI. A lot of the long-stated grand challenges of AI have been achieved, such as truly autonomous vehicles on land and in space, automatic gene finding, automatic classification of galaxies and stars, and winning programs in games. Now that there is more computing power, and computers have revolutionized the world, there are a number of important applications that "will require advances in AI," according to Waltz. Some of these applications include high-quality translation, high-precision web search, content-based image matching, truly intelligent robots, and intelligent environments (smart offices and houses). Some involve essential research topics such as perception, deep understanding, language, creativity, and logic.

The fruits of AI research to date have been many and some quite significant such as graphic user interfaces and object-oriented programming to name two of the most ubiquitous. Clearly, the research agenda for AI continues to challenge and stimulate the AI community.

AAAI is already planning the Sixteenth National Conference on AI, to be held 18–22 July 1999 in Orlando, Florida. We'll have to wait until then to see what AI holds in store for the end of the millennium. If you are interested in helping organize the conference or in participating, please visit our web site at www.aaai.org/Conferences/conferences.html.

Tenth Innovative Applications of AI Conference Continues Highlighting Where AI Is Proving Useful

IAAI-98 continued the tradition of bringing to light some of the novel ways that AI technology is being used to solve strategic problems in business, government, and education. IAAI-98 not only honored fully deployed systems with high payback but, for the first time, also included experimental, emerging systems that point the way toward new trends in AI.

Eleven Deployed Applications

This year's featured deployed applications included 11 cutting-edge systems from various companies, government agencies, and universities. Together, they represent a sampling of the kinds of impact AI systems are having around the world. This year's winners included the following applications and their creators:

■ Simulated intelligent pilots for training (University of Michigan for the Department of Defense)

■ Dynamic planning system for evacuation of military patients to medical treatment facilities (Carnegie Group for U.S. Transportation Command)

■ Doctor advisory system to assist with identifying effective drug therapies for AIDS patients (University of California at Irvine)

■ NASDAQ stock trade monitor that identifies potential regulatory violations (National Association of Securities Dealers)

■ Automatic home appraisal system (Countrywide Home Loans)

■ World champion computer bridge game (Great Game Products with Hood College and University of Maryland)

■ Dynamic page layout for publishing (University of Edinburgh)

■ Telecommunications network monitoring (AT&T Labs)

■ Tank engine diagnosis (U.S. Army Research Laboratory)

■ Data miner of radar imagery for planetary geology (Jet Propulsion Lab and Arizona State University)

■ Multiple parallel machine scheduler for manufacturing (IBM T. J. Watson Research Center)

Emerging Applications

In its second year, the Emerging Applications track of the innovative applications conference showcased systems in the working prototype to early deployment stages. This year's applications included the following:

■ Semiautonomous life-support system control for recycling air in remote-space habitats (NASA Johnson Space Center)

■ Novel approach to planning used for manufacture of microwave transmit-receive components (University of Maryland, Hood College, and Intelligent Automation Inc.)

■ Assistant for teachers in grading students' writing samples (Sienna College)

■ Training simulations for crisis management (Beckman University, University of Illinois)

■ Interactive virtual three-dimensional filmmaker (North Carolina State University)

■ Automatic generator of security plans for alarm systems (SECOM, Japan)

■ Battlefield data dissemination (University of Southern California, Lockheed Martin, and ISX Corp. for the Department of Defense)

■ Judicial assistant to help with marital property following a divorce in Australia (University of Ballarat and Applied Computing Research Institute, Australia)

■ Talking bank machines and other natural language phone dialog systems (IBM T. J. Watson Research Center)