Conference Program

Twenty-First National Conference on Artificial Intelligence (AAAI-06)
Eighteenth Conference on Innovative Applications of Artificial Intelligence (IAAI-06)

July 16 – 20, 2006
Seaport Hotel and World Trade Center
Boston, Massachusetts

Sponsored by the American Association for Artificial Intelligence

Cosponsored by the National Science Foundation, Naval Research Laboratory, Microsoft Research, The Boeing Company, Michael Genesereth, ITA Software, Inc., Google, Intel Corporation, Yahoo! Research, Idaho National Laboratory, IBM Research, Ask Jeeves, Intelligent Information Systems Institute, Cornell University, Teknowledge Corporation, ACM/SIGART, K-Team/RoadNarrows, MobileRobots Inc.
The Defense Advanced Projects Research Agency also provided funds.
Acknowledgments
The American Association for Artificial Intelligence acknowledges and thanks the following individuals for their generous contributions of time and energy to the successful creation and planning of the Twenty-First National Conference on Artificial Intelligence and the Eighteenth Conference on Innovative Applications of Artificial Intelligence.

AAAI Conference Committee Chair
James Hendler (University of Maryland)

AAAI-06 General Conference Chair
Kenneth D. Forbus (Northwestern University)

AAAI-06 Technical Program Cochairs
Yolanda Gil, (Information Sciences Institute, University of Southern California) and Raymond Mooney (University of Texas at Austin)

IAAI-06 Program Chair and Cochairs
Bruce Porter (University of Texas at Austin) and William Cheetham (General Electric Research)

Special Track on Artificial Intelligence and the Web Cochairs
Tim Finin (University of Maryland, Baltimore County) and Dragomir Radev (University of Michigan)

Special Track on Integrated Intelligent Capabilities Cochairs
Art Graesser (University of Memphis) and Reid Simmons (Carnegie Mellon University)

Senior Member Papers Cochairs
Kathy McKeown (Columbia University) and Dan Weld, University of Washington

AAAI Nectar Papers Cochairs
AnHai Doan (University of Illinois at Urbana-Champaign) and Elaine Rich (University of Texas at Austin)

Member Abstracts and Posters Cochairs
Dieter Fox (University of Washington) and Ion Muslea (Language Weaver)

Tutorial Forum Cochairs
Qiang Yang (Hong Kong University of Science and Technology) and Carla Gomes (Cornell University)

Workshop Cochairs
Joyce Chai (Michigan State University) and Keith Decker (University of Delaware)

Doctoral Consortium Chair and Cochair
Kiri Wagstaff (Jet Propulsion Laboratory) and Terran Lane (University of New Mexico)

Student Abstract and Poster Cochairs
Maria Fox (University of Strathclyde), Salesh Ramakrishnan (University of Michigan), and Lynn Andrea Stein (Franklin W. Olin College of Engineering)

Intelligent Systems Demonstrations Cochairs
Rob Miller (Massachusetts Institute of Technology) and Biplov Srivastava (IBM India Research Labs)

Game Playing Competition Chair
Michael Genesereth (Stanford University)

Mobile Robot Competition and Exhibition General Cochairs
Paul Rybski (Carnegie Mellon University) and Jeffrey Forbes (Duke University)

Poker Competition Cochairs
Jonathan Schaeffer (University of Alberta) and Michael Littman (Rutgers University)

Sponsorship Chair
Illah Nourbakhsh (Carnegie Mellon University)

Student Participation Associate Chairs
Martin Michalowski and Matt Michelson (Information Sciences Institute, University of Southern California)

Technical Program Software Chair
Ken Barker (University of Texas at Austin)

A complete listing of the AAAI-06 and IAAI-06 program committee members appears in the conference proceedings.

Sponsoring Organizations
AAAI gratefully acknowledges the generous contributions of the following organizations to AAAI-06:

- National Science Foundation
- Naval Research Laboratory
- Microsoft Research
- The Boeing Company
- Michael Genesereth
- ITA Software, Inc.
- Google
- Intel Corporation
- Yahoo! Research
- Idaho National Laboratory
- IBM Research

- Ask Jeeves
- Intelligent Information Systems Institute, Cornell University
- Teknowledge Corporation
- ACM/SIGART
- K-Team RoadNarrows
- MobileRobots Inc.

The Defense Advanced Projects Research Agency also provided funds.

Awards
All AAAI-06, IAAI-06, and AAAI Special Awards will be presented Tuesday, July 18, 8:30 - 9:00 AM, in the Commonwealth Complex on the Harbor Level of the World Trade Center.

AAAI-06 Awards
The AAAI-06 Awards will be presented by program cochairs Yolanda Gil and Raymond C. Mooney.

Outstanding Paper Awards
Model Counting: A New Strategy for Obtaining Good Bounds by Carla P. Gomes, Ashish Sabharwal, and Bart Selman (Cornell University)

Towards an Axiom System for Default Logic by Gerhard Lakemeyer (Aachen University of Technology), and Hector J. Levesque (University of Toronto)

Outstanding Senior Program Committee Member Award
Brian Williams (Massachusetts Institute of Technology)

Outstanding Program Committee Member Awards
Ernie Davis (New York University), and Rosemary Emery-Montemero (Stanford University)

IAAI-06 Deployed Applications Awards
The six IAAI-06 Deployed Application Awards will be announced by the IAAI-06 chair Bruce Porter and cochair William Cheetham. Please see the schedule for paper titles. Certificates will be presented during paper sessions.

Robert S. Engelmore Memorial Award and Lecture
The Robert S. Engelmore Award is sponsored by IAAI-06 and AI Magazine, and will be presented by Bruce Porter and William Cheetham, IAAI-06 chair and cochair, and David B. Leake, editor-in-chief, AI Magazine. The award and lecture was established in 2003 to honor Robert Engelmore's extraordinary service to AAAI, AI Magazine, and the AI applications community, and his contributions to applied AI. The 2006 award will be presented to Bruce Buchanan, University
Professor of Computer Science Emeritus (University of Pittsburgh), for leadership in artificial intelligence and pioneering contributions to knowledge-based systems, machine learning, and automated discovery, along with significant applications in medicine, biology and chemistry. The lecture will be held Wednesday, July 19, 4:20 PM, in Harborview II.

AAA! Special Awards
Special awards will be presented by Ronald J. Brachman, Awards Committee chair and AAAI past president, and Alan Mackworth, AAAI president.

Classic Paper Award
The 2006 AAAI Classic Paper Award will be given jointly to the authors of two papers considered to be the most influential from the Sixth National Conference on Artificial Intelligence, held in 1987 in Seattle, Washington.


The authors of two additional papers have received honorable mention, including Richard E. Korf for Real-Time Heuristic Search: First Results and Judea Pearl and Thomas Verma for The Logic of Representing Dependencies by Directed Graphs.

Distinguished Service Award
The AAAI Distinguished Service Award recognizes one individual each year for extraordinary service to the AI community. The 2006 award winner is Edward Feigenbaum (Kumagai Professor of Computer Science and Coscientific Director, Knowledge Systems Laboratory, Stanford University) for a lifetime of service to artificial intelligence as a tireless and effective champion of the field, including seminal contributions to the theory and practice of knowledge-based systems, codirectorship of the first major collection of AI papers, mentorship of numerous leading AI researchers, facilitation of the commercialization of AI technology, and service to the AI and computer science communities in many key leadership roles, including president of AAAI and chief scientist of the US Air Force.

General Game Playing Competition
The AAAI General Game Playing Competition is designed to test the abilities of general game playing systems by comparing their performance on a variety of games. The competition will consist of two phases: a qualification round and a runoff competition during AAAI. A $10,000 award will be presented to the winning entrant. AAAI gratefully acknowledges the generous contribution of Michael Genesereth, who has made this award possible. The Award will be presented by Michael Genesereth, Competition Chair.

2006 AAAI Fellows Recognition Dinner
Each year, the American Association for Artificial Intelligence recognizes a small number of members who have made significant sustained contributions to the field of artificial intelligence, and who have attained unusual distinction in the profession. AAAI is pleased to announce the seven newly elected Fellows for 2006:

- Fahiem Bacchus (University of Toronto)
- Craig Boutilier (University of Toronto)
- Anthony G. Cohn (University of Leeds)
- Gregory F. Cooper (University of Pittsburgh)
- Jude W. Shavlik (University of Wisconsin)
- Olivier Stock (ITC-IRST)

New and Special Programs
AAA!-06 will include several new and special programs as AI celebrates the 50th anniversary of the Dartmouth Conference. The program chairs have added two special tracks to the technical program — AI & the Web and Integrated Intelligent Capabilities — which will run consecutively in the Cityview I room in the World Trade Center, July 18-19. AAAI Senior Member papers and Nectar papers (new scientific and technical advances in research) have been integrated into the technical program schedule throughout the conference, and AAAI members will present posters during the poster session on Wednesday evening, July 19.

AAA! Fellows 50th Anniversary Panel
A special Fellows 50th Anniversary Panel will be held Tuesday, July 18, 5:30 – 6:30 pm in the Commonwealth Complex of the World Trade Center.

Open Scientific Questions Blog
Please take a moment to visit this exhibit in the registration area on the upper level of the World Trade Center. An offshoot of the recent AAA! Fellows Symposium, AAAI-06 conference attendee feedback will be solicited regarding open scientific questions that will help shape the next 50 years of research in AI.

AAAI Fellow / Student Lunches
A small number of students will have the opportunity to chat with a AAAI Fellow over an informal lunch during the conference. For more information, check out the Student Activities site described below.

Opening Reception
The AAAI-06 Opening Reception will be held Monday, July 17, 6:00 – 7:00 pm in the Plaza Ballroom of the Seaport Hotel. This event will provide the traditional opportunity for attendees to socialize in a relaxed setting prior to the beginning of the first day of technical sessions. A variety of

### Keynote Address

**Tim Berners-Lee** (Director, World Wide Web Consortium)

**Tuesday, July 18, 9:00 – 10:00 AM**

Commonwealth Complex, World Trade Center

The relationship between AI and the semantic web has been something that has provoked a lot of heated corridor discussion over the years. This talk will try to outline what the semantic web is and is not, at a conference where there may be some anniversary reflection on what AI is and is not. It is not always obvious how to transfer existing AI techniques into a fractal weblike space, or what the effect will be. But it is certainly exciting.

A graduate of Oxford University, England, Berners-Lee now holds the 3Com Founders chair at the Laboratory for Computer Science and Artificial Intelligence Lab (CSAIL) at the Massachusetts Institute of Technology (MIT), where he leads the Decentralized Information group (DIG). He directs the World Wide Web Consortium, an open forum of companies and organizations with the mission to lead the Web to its full potential. With a background of system design in real-time communications and text processing software development, in 1989 he invented the World Wide Web, an internet-based hypermedia initiative for global information sharing, while working at CERN, the European Particle Physics Laboratory. He wrote the first web client (browser-editor) and server in 1990.
hors d’oeuvres and a no-host bar will be available. Admittance to the reception is free to AAAI-06 registrants. A $40.00 per person fee ($10.00 for children) will be charged for spouses and other nontechnical conference registrants.

**AAAII/SIGART Doctoral Consortium**

The Eleventh AAAI/SIGART Doctoral Consortium program will be held on Sunday, July 16, 8:45 AM – 5:30 PM, and Monday, July 17, 9:00 AM – 5:40 PM in the Constitution Room on the mezzanine level of the Seaport Hotel. The Doctoral Consortium provides an opportunity for a group of Ph.D. students to discuss and explore their research interests and career objectives in an interdisciplinary workshop together with a panel of established researchers. The thirteen students accepted to participate in this program, as well as several other DC-06 applicants, will participate in the Poster Session on Wednesday evening. All interested AAAI-06 student registrants are invited to observe the presentations and participate in discussions at the workshop. AAAI and SIGART gratefully acknowledge grants from the National Science Foundation, Google Inc. and Microsoft that provide partial funding for this event.

**Student Blog & Forums**

AAAI06blog is a student run blog that will describe and document AAAI-06 and IAAI-06 from a student’s perspective. A small group of student bloggers attending the conferences will post daily items at aaai06.blogspot.com describing their observations, experiences, reactions, thoughts and questions. Pictures from the conference will be uploaded to the linked photo blog. Other students attending AAAI are welcome to participate by adding their own observations via comments attached to posts and photographs. In addition, several student-run forums are available via the AAAI-06 Student Activities website at pegasus2.isi.edu/aaai06-studentinfo/.

**Fifth Americas School on Agents and Multiagent Systems**

The Fifth Americas School on Agents and Multiagent Systems will be held July 14-17 at Harvard University and The Seaport
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AAAI-06 technical registrants may attend up to four consecutive tutorials and receive one copy of the comprehensive AAAI-06 Tutorial Forum Notes for an additional registration fee. Tutorial attendees may redeem their tutorial syllabi tickets at the proceedings distribution area. All tutorials will be held in the World Trade Center.

I: Sunday, July 16
9:00 AM - 1:00 PM
SA1: Auction-Based Agent Coordination, M. Bernardine Dias, Gil Jones, Nidhi R. Kalra, Pinar Keskinocak, Sven Koenig, Michail G. Lagoudakis, and Robert Zlot (Cityview II, Upper Level)
SA2: Case-Based Reasoning: Theory and Application, Cynthia Marling and William Cheatham (Harborview I, Upper Level)
SA3: Computational Biology: Perspective and Approaches Based on Feature Extraction and Selection, Weixiong Zhang (Federal Complex, Mezzanine Level)
9:00 AM - 6:00 PM
SA4: Getting the Most from ResearchCyc, Larry Lefkowitz, Michael Witbrock, and Keith Goolsbey (Back Bay I, Mezzanine Level)
SA5: USARSim and MOAST: Advanced Tools for High-Fidelity Simulation of Distributed Robot Systems, Stephen Balakirsky, Mike Lewis, and Stefano Carpin (Back Bay II, Mezzanine Level)
II: Sunday, July 16
2:00 - 6:00 PM
SP1: Constraint-Based Local Search, Laurent Michel and Pascal Van Hentenryck (Cityview II, Upper Level)
SP2: State-Space Traversal Techniques for AI Planning, Juuso Rintanen (Harborview I, Upper Level)
SP3: Trading Agent Design and Analysis, Michael P. Wellman (Federal Complex, Mezzanine Level)
III: Monday, July 17
9:00 AM - 1:00 PM
MA1: The Art and Science of Action Programming Languages, Michael Thielscher (Cityview II, Upper Level)
MA2: Scenario-based Design of User Interfaces: Theory from AI and Application in HCI, Hermann Kaindl (Harborview I, Upper Level)
9:00 AM - 6:00 PM
MAP3: Empirical Methods for Artificial Intelligence, Paul Cohen (North End Complex, Harbor Level)
MAP4: Semantic Web Services, Michael Stolberg, Emilia Cimpan, Liliana Cabral, and John Domingue (Waterfront II, Harbor Level)
MAP5: Temporal and Resource Reasoning for Planning, Scheduling and Execution, Nicola Muscettola and Martha E. Pollack (Waterfront III, Harbor Level)
IV: Monday, July 17
2:00 - 6:00 PM
MP1: Intelligent User Interfaces: An Introduction, Mark T. Maybury (Cityview II, Upper Level)
MP2: Language Independent Methods of Clustering Similar Contexts (with applications), Ted Pedersen (Harborview I, Upper Level)

All invited talks will be held in the World Trade Center.

Tuesday, July 18

AAAI-06 Keynote Address
AI and the Semantic Web
Tim Berners-Lee (World Wide Web Consortium). Commonwealth Complex, Harbor Level, 9:00 - 10:00 AM (see page 3)

IIAAI-06 Invited Talk
Winning the DARPA Grand Challenge
Sebastian Thrun (Stanford University). Commonwealth Complex, Harbor Level, 1:50 - 2:50 PM

The DARPA Grand Challenge was the most significant event in the field of robotics in more than a decade. A mobile ground robot had to traverse 132 miles of punishing desert terrain in less than ten hours. In 2004, the best robot only made 7.3 miles. A year later, Stanford won this historical challenge and cashed the $2M prize. This talk, delivered by the leader of the Stanford Racing Team, will provide insights into the software architecture of Stanford’s winning robot “Stanley.” The robot heavily relied on advanced sensor technology, and advanced artificial intelligence to make sense out of the massive amounts of sensor data acquired by the vehicle. The talk will introduce you into the fascinating world of autonomous robotics, share with you many of the race insights, and discuss with you some of the implications for the future of our society.

AAAI Fellows 50th Anniversary Panel
Commonwealth Complex, Harbor Level, 5:30 - 6:30 PM

Wednesday, July 19

AAAI-06 Invited Talk
Developing an Intelligent Personal Assistant: The CALO Project
Karen Myers, (SRI International). Amphitheater, Mezzanine Level, 9:00 - 10:00 AM

Knowledge workers today must juggle a range of tasks and responsibilities while maintaining awareness of deadlines, resources and events that could impact objectives. I will describe a collaboration by a team of 25 organizations to produce an intelligent personal assistant for improving the productivity of such workers. This assistant, called CALO (cognitive as-
sistant that learns and organizes), both performs tasks on its user’s behalf and assists with the filtering, organization, and preparation of information. CALO is seeded with default problem-solving knowledge but learns to expand and improve its capabilities over time by observing and interacting with its user.

AAAI-06 Invited Talk
Global Inference and Learning: Towards Natural Language Understanding
Dan Roth (University of Illinois at Urbana-Champaign). Cityview I, Upper Level, 9:00 - 10:00 AM

The maturity of machine learning techniques allows us today to learn many low level natural language predicates and generate an appropriate vocabulary over which reasoning methods can be used to make significant progress in natural language understanding. I will describe research on a framework that combines learning and inference. Our Inference with Classifiers approach allows the output of local classifiers for different problem components to be assembled into a whole that reflects global preferences and constraints. Examples will be drawn from “wh” attribution in natural language processing (determining who did what to whom when and where) and textual entailment (determining whether one utterance is a likely consequence of another).

AAAI-06 Invited Talk
Neil Jacobstein (Teknowledge Corporation). Harborview II, Upper Level, 10:20 - 11:20 AM

Early stage artificial intelligence has already produced a wide range of valuable applications in industry and government. Many of these applications have performed complex tasks such as planning, monitoring, design, risk assessment, diagnosis, training, process control, classification, and analysis. AAAI’s Innovative Applications of AI Conference has published over 360 successful applications of AI in fields as diverse as biotechnology, space flight, manufacturing, security, paleontology, construction, energy, music, military, intelligence, banking, telecommunications, news media, management, law, emergency services, agriculture, treaty verification, and many others. This talk will review the patterns that connect these applications over 18 years of the AAAI conference: what worked, what didn’t, and what were the key trends. None of these systems exhibited general intelligence, but each documented our ability to codify and distribute human problem solving knowledge, and put it to work.

Robert S. Engelmore Memorial Lecture
What Do We Know About Knowledge?
Bruce G. Buchanan (University Professor of Computer Science Emeritus, University of Pittsburgh). Harborview II, Upper Level, 4:20 - 5:20 PM

Intelligent systems need knowledge. However, the simple equation “knowledge is power” leaves three major questions unanswered. First what do we mean by “knowledge,” second, what do we mean by “power,” and third, what do we mean by “is?” In this talk Buchanan will examine these questions. In particular he will focus on some of the milestones in understanding the nature of knowledge and some of what we have learned from fifty years of AI. The discipline and detail required to write programs that use knowledge have given us some valuable lessons for implementing the knowledge principle. But there are still interesting challenges ahead.

Thursday, July 20

AAAI-06 Invited Talk
Unifying Logical and Statistical AI
Pedro Domingos (University of Washington). Amphitheater, Mezzanine Level, 9:00 - 10:00 AM

Intelligent agents must be able to handle the complexity and uncertainty of the real world. Logical AI has focused mainly on the former, and statistical AI on the latter. Markov logic combines the two by attaching weights to first-order formulas and viewing them as templates for features of Markov networks. Inference algorithms for Markov logic draw on ideas from satisfiability, Markov chain Monte Carlo and knowledge-based model construction. Learning algorithms are based on the voted perceptron and inductive logic programming. Markov logic has been successfully applied to problems in entity resolution, link prediction, information extraction and others, and is the basis of the open-source Alchemy system.

AAAI-06 Invited Talk
Cognitive Tutors and Opportunities for Convergence of Human and Machine Learning Theory
Ken Koedinger (Carnegie Mellon University). Cityview I, Upper Level, 9:00 - 10:00 AM

Cognitive tutors are computer-based intelligent tutors that are based on cognitive psychology theory and employ artificial intelligence methods. Cognitive tutors have led to significant improvements in student learning and are now in regular use in mathematics classrooms in over 2,000 schools across the country. They have also been an important basic research vehicle to test and advance both psychology and AI theory. Besides illustrating this important application of AI, I will also discuss how we have diverged from a time when theoretical explorations of machine and human learning were more closely aligned and how it is now time to reconvene and to fruitfully compare and contrast the independent theoretical advances both fields have made.

Special Meetings

AAAI Business Meeting
The AAAI Annual Business Meeting will be held Monday, July 17, 12:45 - 1:15 pm, Seaport B, Seaport Hotel

AAAI Conference Committee Meeting
The Conference Committee Meeting will be held Thursday, July 19, 7:45 - 8:45 AM, 16th Floor Boardroom, Seaport Hotel

AAAI Publications Committee Meeting
The Publications Committee Meeting will be held Wednesday, July 19, 12:30 - 1:50 PM, Aura Restaurant, Seaport Hotel

AI Magazine Editorial Board Meeting
The AI Magazine Editorial Board Meeting will be held Tuesday, July 18, 12:30 - 2:00 PM, 16th Floor Boardroom, Seaport Hotel

Executive Council Meeting
The AAAI Executive Council Meeting will be held Monday, July 17, 9:00 am - 5:00 pm, 16th Floor Boardroom, Seaport Hotel. Continental breakfast will be available at 8:30 AM.

Strategic Planning Committee Meeting
The AAAI Strategic Planning Committee Meeting will be held Wednesday, July 19, 7:30 - 9:00 AM, 16th Floor Boardroom, Seaport Hotel.
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<td>8:30 - 9:00</td>
<td>Seaport B&amp;C</td>
<td><strong>AAAI-06 Welcome and Opening Remarks</strong> and Paper Award Presentations, Yolanda Gil and Raymond Mooney, Commonwealth Complex, Harbor Level, WTC</td>
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<td>9:00 - 10:00</td>
<td>Seaport B&amp;C</td>
<td><strong>AAAI-06 Keynote Address:</strong> AI and the Semantic Web, Tim Berners-Lee; Introduction by Yolanda Gil, Commonwealth Complex, Harbor Level, WTC</td>
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<td>10:20 - 11:20</td>
<td>Harborview I (WTC)</td>
<td><strong>Machine Learning I</strong></td>
<td>Chair: Weixiang Zhang; Active Learning with Near Misses, Nela Gurevich, Shaul Markovitch, and Ehud Rivlin.</td>
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<td><strong>Multiagent Systems I</strong></td>
<td>Chair: Shlomo Zilberstein; Analysis of Privacy Loss in Distributed Constraint Optimization, Rachel Greenstadt, Jonathan P. Pearce, and Milind Tambe.</td>
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<td>11:30 - 12:30</td>
<td>Harborview I (WTC)</td>
<td><strong>Planning</strong></td>
<td>Chair: Jussi Rintanen; Senior: Deconstructing Planning as Satisfiability, Henry Kautz.</td>
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<td><strong>Human Computer Interaction &amp; Cognitive Modeling: Life-Like Characters &amp; Music</strong></td>
<td>Chair: Bryan Lewis; Using Anticipation to Create Believable Behavior, Carlos Martino and Ana Paiva.</td>
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<td><strong>Planning Robust Planning</strong></td>
<td>Chair: David E. Wilkins; Contingent Planning with Goal Preferences, Dmitry Shaparau, Marco Pistore, and Paolo Traverso.</td>
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<td>12:30 - 12:45</td>
<td>Cityview II (WTC)</td>
<td><strong>Multiagent Systems II</strong></td>
<td>Chair: Jeff Rosenschein; Overlapping Coalition Formation for Efficient Data Fusion in Multi-Sensor Networks, Viet Dung Dang, Rajdeep K. Dash, Alex Rogers, and Nicholas R. Jennings.</td>
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<td>1:50 - 2:50</td>
<td>Cityview II (WTC)</td>
<td><strong>Planning Plan Recognition</strong></td>
<td>Chair: Sem Koenig; Sensor-Based Understanding of Daily Life via Large-Scale Use of Common Sense, William Penney, Ana Popescu, Shikai Wang, Henry Kautz, and Matthew Philipose.</td>
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<td>2:50 - 3:00</td>
<td>Cityview II (WTC)</td>
<td><strong>Model-Based Systems</strong></td>
<td>Chair: Jon Herlocker; Evolving Shared Mental Models, Kaivan Kamali, Xiaocong Fan, and John Yen.</td>
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<tr>
<td>3:00 - 4:00</td>
<td>Seaport B&amp;C</td>
<td><strong>Machine Learning and Analogology</strong></td>
<td>Chair: David Aha; Nectar: Progress in Textual Case-Based Reasoning; Predicting the Outcome of Legal Cases from Text, Stefanie Brüninghaus and Kevin D. Ashley.</td>
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<td><strong>Planning under Uncertainty</strong></td>
<td>Chair: David E. Smith; Compiling Uncertainty about Solving Conformant Planning Problems using a Classical Planner (Sometimes), Hector Palacios and Heeter Goller.</td>
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<td>4:20 - 5:20</td>
<td>Cityview II (WTC)</td>
<td><strong>Perception &amp; Cognition</strong></td>
<td>Chair: Benjamin Kuipers; Self-Supervised Acquisition of Vowels in American English, Michael H. Coen.</td>
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<td><strong>Overlapping Coalition Formation for Efficient Data Fusion in Multi-Sensor Networks</strong>, Viet Dung Dang, Rajdeep K. Dash, Alex Rogers, and Nicholas R. Jennings.</td>
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<td>Chair: Sem Koenig; Sensor-Based Understanding of Daily Life via Large-Scale Use of Common Sense, William Penney, Ana Popescu, Shikai Wang, Henry Kautz, and Matthew Philipose.</td>
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<td>Time</td>
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<td>Chair/Presenter</td>
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<tr>
<td>10:00 AM</td>
<td>Seaport A</td>
<td>Natural Language I</td>
<td>Shaub Markovitch</td>
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<tr>
<td>11:00 AM</td>
<td>Cityview I (WTC)</td>
<td>AI &amp; the Web: Collaborative Filtering</td>
<td>Sofus MacKasky</td>
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<tr>
<td>1:00 PM</td>
<td>Seaport A</td>
<td>Natural Language II</td>
<td>Dayne B. Freitag</td>
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<td>2:00 PM</td>
<td>Cityview I (WTC)</td>
<td>AI &amp; the Web: Trust &amp; Security</td>
<td>Biplaw Sriastava</td>
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<tr>
<td>4:00 PM</td>
<td>Seaport A</td>
<td>Natural Language III</td>
<td>Ted Pedersen</td>
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<tr>
<td>5:00 PM</td>
<td>Cityview I (WTC)</td>
<td>AI &amp; the Web: Ontologies</td>
<td>Vinay K. Chaudhari</td>
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<tr>
<td>6:00 PM</td>
<td>Harborview II (IAAI)</td>
<td>IAAI-06 Invited Talk</td>
<td>Sebastian Thrun</td>
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<tr>
<td>7:00 PM</td>
<td>Seaport A</td>
<td>Knowledge-Based Systems</td>
<td>Michael Witbrock</td>
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<tr>
<td>9:00 PM</td>
<td>Harborview II (IAAI)</td>
<td>IAAI-06 Biomedical Applications 1</td>
<td>Elaine Rich</td>
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<tr>
<td>10:00 PM</td>
<td>Seaport A</td>
<td>Information Integration</td>
<td>Eyal Amir</td>
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<tr>
<td>11:00 PM</td>
<td>Cityview I (WTC)</td>
<td>AI &amp; the Web: Information Extraction</td>
<td>Sofus MacKasky</td>
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<tr>
<td>12:00 AM</td>
<td>Harborview II (IAAI)</td>
<td>IAAI-06 Software Agents</td>
<td>Bill Cheatham</td>
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### Talks

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<tr>
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<th>Session Title</th>
<th>Chair</th>
<th>Speakers</th>
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<tr>
<td>9:00 - 10:00 AM</td>
<td>Harborview I (WTC)</td>
<td>Developing an Intelligent Personal Assistant: The CALO Project</td>
<td>Karen Myers, Introduced by Martha E. Pollack</td>
<td>Amphitheater, Mezzanine Level</td>
</tr>
<tr>
<td>9:00 - 10:00 AM</td>
<td>Cityview II (WTC)</td>
<td>Global Inference and Learning Towards Natural Language Understanding</td>
<td>Dan Roth, Introduced by Leslie Valiant</td>
<td>Cityview I, World Trade Center</td>
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<td>10:20 - 11:20 AM</td>
<td>Seaport B&amp;C</td>
<td>AAAI-06 Invited Talk Session</td>
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<tr>
<td>3:00 – 4:00 PM</td>
<td>Harborview I (WTC)</td>
<td>Knowledge Representation I</td>
<td>Michael Thielscher</td>
<td>Towards an Axiom System for Default Logic, Gerhard Lakemeyer and Hector J. Levesque Forgetting and Conflict Resolving in Disjunction Logic Programming, Thomas Eiter and Kewen Wang Finding Maximally Satisfiable Terminologies for the Description Logic ALC, Thomas Meyer, Kevin Lee, Richard Booth, and Jeff Z. Pan</td>
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<tr>
<td>1:50 – 2:50 PM</td>
<td>Cityview II (WTC)</td>
<td>Constraint Satisfaction I</td>
<td>Abdul Sattar</td>
<td>Temporal Preference Optimization as Weighted Constraint Satisfaction, Michael D. Moffitt and Martha E. Pollack Simple Randomized Algorithms for Tractable Row and Tree Convex Constraints, T. K. Satish Kumar Length-Lex Ordering for Set CSPs, Carmen Gervet and Pascal van Hentenryck</td>
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<tr>
<td>3:00 – 4:00 PM</td>
<td>Cityview I, World Trade Center</td>
<td>Knowledge Representation II</td>
<td>Xiaodan (Shelye) Zhang</td>
<td>Explaining Qualitative Decision under Uncertainty by Argumentation, Leila Amgoud and Henri Prade On the Complexity of Linking Deductive and Abstract Argument Systems, Michael Wooldridge, Paul E. Dunne, and Simon Parsons Model-Checking Memory Requirements of Resource-Bounded Reasoners, Alexandre Albrecht, Natasha Aichina, Piergorgio Bertoli, Chiara Ghidini, Brian Logan, and Luciano Serafini</td>
</tr>
<tr>
<td>5:30–9:30 PM</td>
<td>Seaport B&amp;C</td>
<td>AAAI-06 Technical Posters &amp; Intelligent Systems Demonstrations</td>
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<tr>
<td>11:30 – 12:30 PM</td>
<td>Cityview II (WTC)</td>
<td>Machine Learning: Transfer Learning II</td>
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<td>1:50 – 2:50 PM</td>
<td>Seaport B&amp;C</td>
<td>Knowledge Representation II</td>
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<td>3:00 – 4:00 PM</td>
<td>Harborview I (WTC)</td>
<td>Game Theory I</td>
<td>Amy Greenwald</td>
<td>Senior: Methods for Empirical Game-Theoretic Analysis, Michael P. Wellman Impersonation-Based Mechanisms, Moshe Babaioff, Ron Lav, and Elan Pavlov Strong Mediated Equilibrium, Dov Monderer and Moshe Tennenholtz</td>
</tr>
<tr>
<td>3:00 – 4:00 PM</td>
<td>Cityview II (WTC)</td>
<td>Game Theory II</td>
<td>Judy Goldsmith</td>
<td>Chair: Judy Goldsmith Compact, Convex Upper Bound Iteration for Approximate POMDP Planning, Tao Wang, Pascal Paupert, Michael Bowling, and Dale Schuurman Point-Based Dynamic Programming for DEC-POMDPs, Daniel Ser and Francois Charpillet On the Difficulty of Achieving Equilibrium in Interactive POMDPs, Prashant Doshi and Piotr J. Mytrasiewicz</td>
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<td>4:20 – 5:20 PM</td>
<td>Cityview II (WTC)</td>
<td>Game Theory III</td>
<td>Judy Goldsmith</td>
<td>Chair: Toby Walsh Senior: Constraints: The Ties that Bind, Eugene C. Freuder Local-Search techniques for Boolean Combinations of Pseudo-Boolean Constraints, Lening Liu and Hirokawa Truszczyński A Quadratic Propagator for the Inter-Distance Constraint, Claude-Guy Quimper, Alejandro Lopez-Ortiz, and Gilles Pesant</td>
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<td>4:20 – 5:20 PM</td>
<td>Harborview I (WTC)</td>
<td>Game Theory III</td>
<td>Makoto Yokos</td>
<td>A Computational Model of Logic-Based Negotiation, Dongmo Zhang and Yan Zhang Regret-based Incremental Partial Revelation Mechanisms, Nathanael Hyafil and Craig Boutilier Nectar: Handling Self Interest in Groups, with Minimal Cost, Ruggiero Cavallo</td>
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Coffee breaks will be held at 10:00-10:20 AM and 4:00 – 4:20 PM. The lunch break will be held from 12:30 - 1:50 PM.

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<tr>
<th>Seaport A</th>
<th>Cityview I (WTC)</th>
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<tr>
<td><strong>Search: Games I</strong></td>
<td><strong>AI &amp; the Web: Information Retrieval</strong></td>
<td><strong>IAAI-06 Invited Talk</strong></td>
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<tr>
<td><strong>Search: Games II</strong></td>
<td><strong>AI &amp; the Web: Information Interaction</strong></td>
<td><strong>IAAI-06 Biomedical Applications 2</strong></td>
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<tr>
<td>Chair: Makoto Yokota</td>
<td>Chair: Tony Cohn</td>
<td>Chair: Howard Shrobe</td>
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<td><strong>Search: Games &amp; Applications</strong></td>
<td><strong>IIC: Agent Architectures</strong></td>
<td><strong>IAAI-06 Constraint-Based Systems</strong></td>
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<td>Chair: Vladimir Bulloko</td>
<td>Chair: Karen Myers</td>
<td>Chair: Bruce Porter</td>
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<tr>
<td><strong>Search I</strong></td>
<td><strong>IIC: Integrated Natural Language Processing</strong></td>
<td><strong>IAAI-06 Knowledge-Based Systems 2</strong></td>
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<td>Chair: Vadim Bulloko</td>
<td>Chair: Candy Sidner</td>
<td>Chair: Karen Haigh</td>
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<tr>
<td>Estimating Search Tree Size, Philip Kilby, John Slaney, Sylvie Thibaux, and Toby Walsh Planning with First-Order Temporally Extended Goals using Heuristic Search, Jorge A. Baier and Sheila A. McIlraith Dual Search in Permutation State Spaces, Uzi Zahavi, Ariel Felner, Robert Holte, and Jonathan Schaeffer</td>
<td>Deeper Natural Language Processing for Evaluating Student Answers in Intelligent Tutoring Systems, Vasile Rus and Art C. Graesser WALL: the Talk: Connecting Language, Knowledge, and Action in Route Instructions, Matt MacDowhan, Brian Stankiewicz, and Benjamin Kupers Integrating Joint Intention Theory, Belief Reasoning, and Communicative Action for Generating Team-Oriented Dialogue, Rajah Annamalai Subramanian, Sanjeev Kumar, and Philip Cohen</td>
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<td><strong>Search II</strong></td>
<td><strong>IIC: Human-Robot Interaction</strong></td>
<td><strong>IAAI-06 Robert S. Engelmore Memorial Lecture</strong></td>
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<td>Chair: Xiaohui Liu</td>
<td>Chair: Candy Sidner</td>
<td>What Do We Know About Knowledge? Bruce G. Buchanan, introduced by David Leake</td>
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Conference Schedule—Wednesday, July 19
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<td>11:30 – 12:30 PM</td>
<td>1:50 – 2:50 PM</td>
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<td>Unifying Logical and Statistical AI</td>
<td>Cognitive Tutors and Opportunities for Convergence of Human and Machine Learning Theory</td>
<td>Pedro Domingos, Introduced by Tom Mitchell</td>
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<td>Amphitheater, World Trade Center</td>
<td>Cityview I, World Trade Center</td>
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<td>Chair: Brian Milich</td>
<td>Chair: Vladimir Lifschitz</td>
<td>Chair: Yves Leserpace</td>
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<td>Sound and Efficient Inference with Probabilistic and Deterministic Dependencies, Hofung Poon and Pedro Domingos</td>
<td>Elementary Sets of Logic Programs, Martin Geiger, Joohyun Lee, and Yuliyi Lierler</td>
<td>Optimal Scheduling of Contract Algorithms for Anytime Problems, Alejandro López-Ortiz, Spyros Angelopoulos, and Angelo M. Hamel</td>
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<td>Memory-Efficient Inference in Relational Domains, Parag Singla and Pedro Domingos</td>
<td>Answer Sets for Logic Programs with Arbitrary Abstract Constraint Atoms, Tran Cao Son, Enrico Pontelli, and Phan Huy Tu</td>
<td>Tractable Classes of Metric Temporal Problems with Domain Rules, T. K. Satish Kumar</td>
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<td>Identification and Evaluation of Weak Community Structures in Networks, Jianhua Ren and Weixing Zhang</td>
<td>Bounded Treewidth as a Key to Tractability of Knowledge Representation and Reasoning, Georg Gottlob, Reinhard Pichler, and Fang Wei</td>
<td>Learning Partially Observable Action Schemas, Dafna Shahaf and Eyai Amir</td>
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<tr>
<td>11:30 - 12:30 PM</td>
<td>Machine Learning: Evolutionary Computation</td>
<td>UA1: Decision Theory</td>
<td>UA1: Satisfiability I</td>
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<td>Chair: Shimon Whiteson</td>
<td>Chair: Judy Goldsmith</td>
<td>Chair: Miroslav Velev</td>
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<td>A Direct Evolutionary Feature Extraction Algorithm for Classifying High-Dimensional Data, Qijun Zhao, David Zhang, and Hongtao Lu</td>
<td>Nectar: Preference Elicitation and Generalized Additive Utility, Darius Brazdinis and Craig Boutilier</td>
<td>Nectar: Acquiring Constraint Networks Using a SAT-based Version Space Algorithm, Christian Biessiere, Remi Cottetta, Friederic Koriche, and Barry O’Sullivan</td>
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<td>1:30 - 2:30 PM</td>
<td>Machine Learning: Ensemble Learning</td>
<td>UA1: Probabilistic Inference</td>
<td>UA1: Satisfiability II</td>
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<td>Chair: Draga D. Margineantu</td>
<td>Chair: Richard Koh</td>
<td>Chair: Ashish Sabharwal</td>
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<td>On Combining Multiple Classifiers Using an Evidential Approach, Yaxin Bi, Sally Mclean, and Terry Anderson</td>
<td>MPE and Partial Inversion in Lifted Probabilistic Variable Elimination, Rodrigo de Salvo Braz, Eyal Amir, and Dan Roth</td>
<td>Efficient Inference Rules for Efficient Max-SAT Solving, Federico Heras and Javier Larrosa</td>
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<td>Boosting Expert Ensembles for Rapid Concept Recall, Achim Rettinger, Martin Zinkevich, and Michael Bowling</td>
<td>Solving MAP Exactly by Searching on Compiled Arithmetic Circuits, Jinbo Huang, Martin Chavira, and Adnan Darwiche</td>
<td>Efficient Haplotype Inference with Boolean Satisfiability, Indra Lynce and João Marques-Silva</td>
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<td>Gradient Boosting for Sequence Alignment, Charles Parker, Alan Fern, and Prasad Tadepalli</td>
<td>An Edge Deletion Semantics for Belief Propagation and Its Practical Impact on Approximation Quality, Arthur Choi and Adnan Darwiche</td>
<td>Fast SAT-based Answer Set Solver, Zhijun Lin, Yuanlin Zhang, and Hector Hernandez</td>
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<td>1:50 - 2:50 PM</td>
<td>AI &amp; the Turing Test</td>
<td>UA1: Bayesian Networks</td>
<td>UA1: Satisfiability III</td>
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<td>Chair: Stuart Shapiro</td>
<td>Chair: Miroslav Velev</td>
<td>Chair: Jussi Rintanen</td>
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<td>Senior: Turing’s Dream and the Knowledge Challenge, Lenhart Schubert</td>
<td>Identifiability in Causal Bayesian Networks: A Sound and Complete Algorithm, Yimin Huang and Marco Valverde</td>
<td>Abstract Branching for Quantified Formulas, Marco Benedetti</td>
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<td>Senior: Does the Turing Test Demonstrate Intelligence or Not? Stuart M. Shieber</td>
<td>Identification of Joint Interventional Distributions in Recursive Semi-Markovian Causal Models, Ilya Shpitser and Judea Pearl</td>
<td>Solving QBF by Combining Conjunctive and Disjunctive Normal Forms, Lintao Zhang</td>
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<td>A Bayesian Network for Outbreak Detection and Prediction, Xia Jiang and Garrick L. Wallstrom</td>
<td>Efficient Knowledge Compilation and Quantified Boolean Formulas, Federico Heras and Javier Larrosa</td>
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<td>DHNF-based Belief State Estimation, Paul Elliott and Brian Williams</td>
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12  Conference Schedule—Thursday, July 20
### Robotics I
Chair: Bernadine Dias

- **Integrated AI in Space: The Autonomous Science-craft on Earth Observing One, Steve Chien**
- **Exploiting Spatial and Temporal Flexibility for Plan Execution for Hybrid, Under-actuated Robots, Andreas G. Hoffmann and Brian C. Williams**
- **A Manifold Regularization Approach to Calibration Reduction for Sensor-Network Based Tracking, Jeffrey Junfeng Pan, Qiang Yang, Hong Chang, and Dit-Yan Yeung**

### Robotics II
Chair: Bernadine Dias

- **Bayesian Calibration for Monte Carlo Localization, Armita Kaboli, Michael Bowling, and Petr Musilek**
- **Subjective Mapping, Michael Bowling, Dana Wilkinson, and Ali Ghodsi**
- **Efficient Triangulation-Based Pathfinding, Douglas Demyen and Michael Buro**

### Robotics III
Chair: Sven Koenig

- **From the Programmer’s Apprentice to Human-Robot Interaction: Thirty Years of Research on Human-Computer Collaboration, Charles Rich and Candace L. Sidner**
- **Reinforcement Learning with Human Teachers: Evidence of Feedback and Guidance with Implications for Learning Performance, Andras L. Thomaz and Cynthia Breazeal**
- **Diagnosis of Multi-Robot Coordination Failures Using Distributed CSP Algorithms, Meir Kalech, Gal A. Kaminka, Amnon Meisels, and Yehuda Elmaleich**

### Computer Vision

- **Object Boundary Detection in Images using a Semantic Ontology, Anthony Hoops and Roderic Collins**
- **Motion-Based Autonomous Grounding: Inferring External World Properties from Encoded Internal Sensory States Alone, Yoonsuck Choe and Noah H. Smith**
- **The Role of Context in Head Gesture Recognition, Louis-Phillippe Morency, Candace Sidner, Christopher Lee, and Trevor Darrell**

### General Game Playing / Hall of Champions
Chair: Mark T. Maybury

- **Automatic Heuristic Construction in a Complete General Game Player, Gregory Kuhlmann and Petar Stone**
- **Winning the DARPA Grand Challenge with an AI Robot, Michael Montemerlo, Sebastian Thrun, Hendrik Dahlkamp, David Stavens, and Sven Strohband**
- **Running the Table: An AI for Computer Billiards, Michael Smith**

### Human-Computer Interaction & Cognitive Modeling: Intelligent Tutoring Systems
Chair: Mark T. Maybury

- **Classifying Learner Engagement through Integration of Multiple Data Sources, Carole R. Beal, Lei Qu, and Hyokyung Lee**
- **A Dynamic Mixture Model to Detect Student Motivation and Proficiency, Jeff Johns and Beverly Woolf**
- **Probabilistic Goal Recognition in Interactive Narrative Environments, Bradford Mott, Sunyoung Lee, and James Lester**

### Human-Computer Interaction & Cognitive Modeling: Cognitive Modeling
Chair: Mark T. Maybury

- **Modeling Human Decision Making in Cliff-Edge Environments, Ron Katz and Sari Kraus**
- **From Pigeons to Humans: Grounding Relational Learning in Concrete Examples, Marc T. Tomlinson and Bradley C. Love**
- **AI Support for Building Cognitive Models, Robert St. Amant, Sean P. McBride, and Frank E. Ritter**

### AAI-06: Knowledge-Based Agents
Chair: Neil Jacobstein

- **Emerging Application: Multagent Coalition Formation for Computer-Supported Cooperative Learning, Len-Kiat Soh, Nobel Khandaker, and Hong Jiang**
- **Emerging Application: Design and Implementation of the CALO Query Manager, Jose-Luis Amrit, Vinay K. Chaudhri, Richard Fikes, Jessica Jenkins, Sunil Mishra, Maria Muslea, Tomas Uribe and Guizhen Yang**

### AAI-06: Constraint-Based Reasoning
Chair: Bruce Porter

- **Emerging Application: CPM: Context-Aware Power Management in WLANs, Fahd Albinali and Chris Gniady**
- **Emerging Application: Trip Router with Individualized Preferences (TRIP): Incorporating Personalization into Route Planning, Julia Letchner, John Krumm, and Eric Horvitz**

### AAI-06: Personalization Technologies
Chair: Karen Haigh

- **Emerging Application: TPBOSCourier: A Transportation Procurement System (for the Procurement of Courier Services), Andrew Lim, Zhou Xu, Brenda Cheang, Ho Wee Kit, and Steve Au-yeung**
- **Emerging Application: Hand Grip Pattern Recognition for Mobile User Interfaces, Kee-Eung Kim, Wook Chang, Sung-Jung Cho, Junghyun Shim, Hyoungjeong Lee, Joonnah Park, Youngbem Lee, and Sangryoung Kim**

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**A limited number of Proceedings (in both book and CD form) are available for purchase in Registration.**
AAAI-06 Technical Papers

Conflict Satisfaction and Satisfiability
Extending Dynamic Backtracking to Solve Weighted Conditional CSPs, Robert T. Effinger and Eric C. Williams
Detecting Disjoint Inconsistent Subformulas for Computing Lower Bounds for Max-SAT, Chun Min Li, Filip Manyá, and Jordi Planes
An Asymptotically Optimal Algorithm for the Max k-Armed Bandit Problem, Matthew J. Streeter and Stephen F. Smith

Human Computer Interaction and Cognitive Modeling
Evaluating Critiquing-based Recommender Agents, Li Chen and Pearl Pu
Salience in Orientation-Filter Response Measured as Suspicious Coincidence in Natural Images, Subramonia Sarma and Yoonsuck Choe

Knowledge Representation and Logic
Goal Specification, Non-Determinism and Quantifying over Policies, Chitta Baral and Jicheng Zhao
Belief Change in the Context of Fallible Actions and Observations, Aaron Hunter and James P. Delgrande
Characterizing Data Complexity for Conjunctive Query Answering in Expressive Description Logics, Magdalena Ortiz, Diego Calvanese, and Thomas Eiter
Reconciling Situation Calculus and Fluent Calculus, Stephan Schaal and Michael Thielscher

Machine Learning
On the Difficulty of Modular Reinforcement Learning for Real-World Partial Programming, Sooraj Bhat, Charles L. Isbell, Jr., and Michael Matas
Identifying and Generating Easy Sets of Constraints for Clustering, Ian Davidson and S. S. Ravi
Nonnegative Matrix Factorization and Probabilistic Latent Semantic Indexing: Equivalence Chi-Square Statistic, and a Hybrid Method, Chris Ding, Tao Li, and Wei Peng
Incremental Lesieur Scores Temporal Difference Learning, Alborz Geramifard, Michael Bowling, and Richard S. Sutton
Improving Approximate Value Iteration Using Memories and Proactive State Representations, Michael R. James, Tom Welling, and Nikos Vlassis
Quantifying the Impact of Learning Algorithm Parameter Tuning, Niklas Lavesson and Paul Davidson
Multi-Conditional Learning: Generative/Discriminative Training for Clustering and Classification, Andrew McCallum, Chris Pal, Greg Druck, and Xuexi Wang
Learning Blocking Schemes for Record Linkage, Michael Michelson and Craig A. Knoblock
Thresholding for Making Classifiers Cost-sensitive, Victor S. Sheng and Charles X. Ling
Cost-Sensitive Test Strategies, Charles X. Ling and Shengli Sheng
A Fast Decision Tree Learning Algorithm, Jiang Su and Harry Zhang
Hard Constrained Semi-Markov Decision Processes, Wei-Leng Yeow, Chen-Khong Tham, and Wei-Chong Wong
On Multi-Class Cost-Sensitive Learning, Zhi-Hua Zhou and Xu-Ying Liu

Multiagent Systems
Keeping in Touch: Maintaining Biconnected Structure by Homogeneous Robots, Mazda Ahmadi and Peter Stone
Quantifying Incentive Compatibility of Ranking Systems, Alan Altman and Moshe Tennenholtz
Computing Sater Rankings Using Similarities among Candidates, Vincent Conitzer

Distributed Interactive Learning in Multi-Agent Systems, Jian Huang and Adrian R. Pearce
A Compact Representation Scheme for Coalitional Games in Open Anonymous Environments, Nakia Ohta, Atsushi Iwasaki, Makoto Yoklo, Kohki Maruani, Vincent Conitzer, and Tuomas Sandholm
ODPOP: An Algorithm for Open/Distributed Constraint Optimization, Adrian Petcu and Boi Faltings
Behaviours: Multiplication of Multiagent System Behavior through Parasitic Infection, Amit Shataby, Zinovi Rabinovich, and Jeffrey S. Rosenschein
Simultaneous Team Assignment and Behavior Recognition from Spatio-Temporal Agent Traces, Gita Sunkthankar and Kasthuri Sycara
Contract Enforcement in Virtual Organizations: A Commitment-Based Approach, Yathiraj B. Udupi and Munindar P. Singh
Mechanisms for Partial Information Elicitation: The Truth, but Not the Whole Truth, Aviv Zohar and Jeffrey S. Rosenschein

Natural Language Processing
Script and Language Identification in Degraded and Distorted Document Images, Shijian Lu and Chen Lin
Reasoning about Plans and Actions
Adaptive Sampling Based Large-Scale Stochastic Resource Control, Balázs Császár Csöjé and László Monostori
Cost-Optimal External Planning, Stefan Edelkamp and Shahid Jabbar
Reasoning about Discrete Event Sources, Shue-Hong Lin
Learning Partially Observable Action Models: Efficient Algorithms, Dafna Shapira, Allan Chang, and Eyad Amir

Robotics and Computer Vision
Probabilistic Self-Localization for Sensor Networks, Dimitri Marinakis and Gregory Dudek
Search and Game Playing
Sequential and Parallel Algorithms for Frontier A*, with Delayed Duplicate Detection, Robert Nieuwland, José Nelson Amaral, and Robert C. Holte
Discord — Nuevo — GoGo: Integrating Local Search and Constraint Search with Restarts, Manolf Sellemann and Carlos Ansotegui
Uncertainty in AI
An Iterative Algorithm for Solving Constrained Decentralized Markov Decision Processes, Aurélie Beynier and Abdel-Illah Mouaddib
An Anytime Scheme for Bounding Posterior Beliefs, Bozhen Bidxuk and Rina Dechter
Preferences over Sets, R. I. Brafman, C. Domshlak, S. E. Shimony, and Y. Silver
When Gossip is Good: Distributed Probabilistic Inference for Detection of Slow Network Intrusions, Denver Dash, Branislav Kveton, John Mark A. Boga, Eve Schoolar, Jaidip Chandrashekar, Abraham Bachrach, and Alex Neeman
Learning Basis Functions in Hybrid Domains, Branislav Kveton and Milos Hauskrecht
Incremental Least-Squares Policy Iteration for POMDPs, Hui Li, Xuejun Liao, and Lawrence Carin
Performing Incremental Bayesian Inference by Dynamic Model Counting, Wei Li, Peter van Beek, and Pascal Poupart
Functional Value Iteration for Decision-Theoretic Planning with General Utility Functions, Yaxiong Liu and Sven Koenig
Learning in Continuous and Control in Continuous Markov Decision Processes, Sridhar Mahadevan, Mauro Maggioni, Kimberly Ferguson, and Sarah Oserotski

Memory Intensive Branch-and-Bound Search for Graphical Models, Radu Marinescu and Rina Dechter
Bayesian Reputation Modeling in E-Marketplaces Sensitive to Subjectivity, Deception and Change, Kevin Regan, Pascal Poupart, and Robin Littman
Focused Real-Time Dynamic Programming for MDPs: Squeezing More Out of a Heuristic, Trey Smith and Reid Simmons
A Characterization of Interventional Distributions in Semi-Markovian Causal Models, Jin Tian, Changsheng Kang, and Judea Pearl

Special Track on Artificial Intelligence and the Web
A Platform to Evaluate the Technology for Service Discovery in the Semantic Web, Cedile Aberg, Johan Aberg, Patrick Lambrix, and Nahid Shahnezhad
Comparative Experiments on Sentiment Classification for Online Product Reviews, Hang Cui, Vibhu Mittal, and Mayur Deshpande
On the Update of Description Logic Ontologies at the Instance Level, Giuseppe De Giacomo, Maurizio Lenzerini, Antonella Poggi, and Riccardo Rosati
Mining and Re-ranking for Answering Biographical Queries on the Web, Donghui Feng, Deepak Ravichandran, and Eduard Hovy
Inconsistencies, Negations and Changes in Ontologies, Giorgos Floros, Zhiheng Huang, Jeff Z. Pan, Dimitris Plexousakis, and Hedger Wacher
Deciding Semantic Matching of Stateless Services, Duncan Hull, Evgenii Zolot, Andrey Boykov, Ian Horrocks, Ulrike Sattler, and Robert Stevens
Detecting Spam Blogs: A Machine Learning Approach, Pranam Kolari, Askhay Java, Tim Finin, Tim Oates, and Anupam Joshi
Novel Relationship Discovery Using Opinions Mined from the Web, Lun-Wei Ku, Hsiu-Wei Ho, and Hsin-Hsi Chen
An Investigation into the Feasibility of the Semantic Web, Zhengxiang Pan, Abir Qasem, and Jeff Hefflin
Inferring User’s Preferences using Ontologies, Vincent Schickel-Zuber and Boi Faltings

Work Scientific and Technical Advances in Research Papers (NECTAR)
Building Semantic Mappings from Databases to Ontologies, Yuan An, John Mylopoulos, and Alex Borgida
Maintaining Cooperation in Noisy Environments, Ts-Chiu Au and Dana Nau
B-RDC Curves for the Assessment of Classifiers over Imbalanced Data Sets, Alvaro A. Cárdenas and John S. Baras
Constraint Symmetry and Solution Symmetry, David Cohen, Peter Jeavons, Christopher Jefferson, Karen E. Petrie, and Barbara M. Smith
Traffic Intersections of the Future, Kurt Dresner and Peter Stone
Towards a Validated Model of “Emotional Intelligence,” Jonathan Gratch, Stacy Marsella, and WeiJian Mao
The Power of Sequential Single-item Auctions for Agent Coordination, Sven Koenig, Craig Tovey, Michail Lagoudakis, Vangelis Markakis, David Kempe, Pinar Keskinocak, Anton Kleywegt, Adam Meyerson, and Sonal Jain
Controlled Search over Compact State Representations, in Nondeterministic Planning Domains and Beyond, Ufuk Kuter and Dana Nau
The Synthpy Approach for End to End Web Services Composition: Planning with Decoupled Causal and Resource Reasoning, Biplov Srivastava

AAAI-06 Poster Session

The poster session will be held Wednesday, July 19, in the Plaza Ballroom, Seaport Hotel, from 5:30-9:30 PM.
Explanation-Based Learning for Image Understanding, Qiang Sun, Li-Lun Wang, and Gerald Dejong

Automatic Wrapper Generation Using Tree Matching and Partial Tree Alignment, Yanhong Zhao and Bing Liu

Responsive Information Architecture: Enabling Context-Sensitive Information Seeking, Michelle X. Zhou, Keith Houck, Chandra Pan, James Shaw, Vikram Agarwala, and Zhen Wen

AAA1 Member Abstracts

Semantic Tagging at the Sense Level, Alina Andreiavlakia and Sabine Berger

Slashpack: An Integrated Tool for Gathering and Managing Hypertext Data, Christopher H. Brooks, Monica Agarwal, Jason Endo, Ryan King, Nancy Montanez, and Ruid Stevens

Lookahead Pathology in Real-Time Path-Finding, Vadim Bulitko and Miitka Lustrek

Explicit Passive Analysis in Electronic Catalogs, David Portabella Closet and Martin Rajman

A Negotiation Protocol for Agents with Nonlinear Utility Functions, Takayuki Ito, Mark Klein, and Hironobu Hattori

A Decision-Theoretic Planner with Dynamic Compound Reconfiguration for Distributed Real-Time Applications, John S. Kinneyrew, Nishanth Shankaran, Gautam Biswas, and Douglas Schmidt

Using an Ontology for Knowledge Acquisition, Stacy Lovell and Webb Stacy

PB-smodels a Pseudo-Boolean Solver, Gastrapri Na-masivayam

Bayesian Network Based Reparameterization of Haar-like Feature, Hirokata Niitsuma

Locally Optimal Algorithms and Solutions for Distributed Constraint Optimization, Jonathan P.佩林

Wavelet Statistics for Human Motion Classification, Kevin Quinnnesson, Elias Ioup, and Charles Isbell

Evaluation of Solving Models for Conditional Constraint Satisfaction Problems, Mihaela Sabin and Esther Gelle

Machine LifeLong Learning with cstML Networks, Daniel L. Silver and Ryan Pörter

How to Put the Pieces of AI Together Again, Aaron Sloman

Decision Making in Uncertain Real-World Domains Using DT-Golog, Mikhail Southcantski, Huy Pham, and John Mylopoulos


When is Constrained Clustering Beneficial, and Why? Kiri Wagstaff, Sugato Basu, and Ian Davidson

Interpretation of Design Drawings by Analogy, Patrick W. Yuner and Ashok K. God

Student Abstracts

Biconnected Structure for Multi-Robot Systems, Mazda Ahmadi and Peter Stone

A Benchmark for Cooperative Learning Agents, Jason M. Black and Dean F. Hougen

Permutation Evaluation Methods for the Trading Agent Competition, Brett Borghetti and Eric Mackworth

Can We Work around Numerical Methods? An Insight, Sandeep Chanda and Rene V. Mayorga

Local Consistency in Junction Graphs for Constraint-Based Inference, Le Chang and Alan K. Mackworth

RL-CD: Dealing with Non-Stationarity in Reinforcement Learning, Bruno C. da Silva, Eduardo W. Basso, Ana L. C. Bazzan, and Paulo M. Engel

Making Autonomous Intersection Management Backwards-Compatible, Kurt Dresner and Peter Stone

Exploring GnuGo's Evaluation Function with a SVM, Christopher Fellows, Yuri Malitsky, and Gregory Wolniakiewicz

Robot Self-Recognition Using Conditional Probability-Based Contingency, Kevin M. Godby and Jesse A. Lane

Multiclass Support Vector Machines for Articulatory Feature Classification, Brian Hutchinson and Jianna Zhang

Further Investigations into Regular XORSAT, Matti Järvelin


KDMAS: A Multi-Agent System for Knowledge Discovery via Planning, Li Jin and Keith Dick

Kernel Methods for Word Sense Disambiguation and Acronym Expansion, Mahesh Joshi, Ted Pedersen, Richard Madin, and Sargue Pakhomov

Memeta: A Framework for Multi-Relational Analytics on the Blogosphere, Pranam Kolar and Tim Finin

Automatic Heuristic Construction for General Game Playing, Gregory Kuhlmann and Peter Stone

How Many Different 'I'ohn Smiths', and Who Are They? Anagha Kulkarni and Ted Pedersen

Population and Agent Based Models for Language Convergence, Kiran Lakkaraju and Leg Gasser

Boot Camp for Cognitive Systems, Douglas S. Lange

Algorithms for Control and Interaction of Large Formations of Robots, Ross Mad and Jerry B. Weinberg

Learning of Agents with Limited Resources, Slawomir Nowaczyk

Unsupervised Order-Preserving Regression Kernel for Sequence Analysis, YoungLin Shin

Curiosity-Driven Exploration with Planning Trajectories, Tyler Streeter

Expectation-Based Vision for Self-Localization on a Legged Robot, Daniel Stronger and Peter Stone

Inter-Task Action Correlation for Reinforcement Learning Tasks, Matthew F. Taylor and Peter Stone

Doctoral Consortium Abstracts

A Value Theory of Meta-Learning Algorithms, Abraham Bagherian

A Computational Model of Narrative Generation for Suspense, Yun-Gyung Cheong

Multi-Resolution Learning for Knowledge Transfer, Eric Eaton

Learning Models of Macrobehavior in Complex Adaptive Systems, Andrew Fast

Techniques for Generating Optimal, Robust Plans when Temporal Uncertainty is Present, Janae N. Foss

Automatic Summarization of Conversational Multi-Party Speech, Michel Galley

Privatizing Constraint Optimization, Rachel Greenstadt

Darshak - An Intelligent Cinematic Camera Planning System, Arvay Jhala

Cross System Personalization by Learning Manifold Alignments, Bhaskar Mehta

A Generalized Query Framework for Geospatial Reasoning, Martin Michalowski

Robust Autonomous Structure-based Color Learning on a Mobile Robot, Mohan Sridharan

Closest Pairs Data Selection for Support Vector Machines, Chaofan Sun

Action Selection in Bayesian Reinforcement Learning, Tao Wang
The exhibits are located in the Upper Level Atrium of the World Trade Center. Exhibits will take place Tuesday through Thursday, July 18–20.

Exhibit Hours
Tuesday, July 18, 9:00 AM – 6:00 PM
Wednesday, July 19, 9:00 AM – 6:00 PM
Thursday, July 20, 9:00 AM – 12:00 PM

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General Game Playing Competition

The General Game Playing Competition will take place Monday through Wednesday, July 17-19, in the Harborside room, Upper Level, World Trade Center.

General game players are systems able to accept declarative descriptions of arbitrary games at “runtime” and able to use such descriptions to play those games effectively without human intervention. Unlike specialized game players, such as Deep Blue, general game players cannot rely on algorithms designed in advance for specific games. General game playing performance requires intelligence on the part of the programmer of the game player, and not just intelligence on the part of the programmer of the game player. In order to perform well, general game players must incorporate various Artificial Intelligence technologies, such as knowledge representation, reasoning, learning, and rational decision making; and these capabilities have to work together in integrated fashion. While general game playing is a topic with inherent interest, work in this area has practical value as well. The underlying technology can be used in a variety of other application areas, such as business process management, electronic commerce, and military operations.

The Competition

The AAAI competition is designed to test the abilities of general game playing systems by comparing their performance on a variety of previously unseen games. The 2006 competition consists of four rounds of matches held during May-July 2006, with the last round and a championship match held in Boston at AAAI. Over the four rounds, each general game player will play approximately 80 matches, and the combined scores from these matches will determine the finalists in the championship match. The winner of the championship match will be the winner of the competition, and the programmer(s) of the winning player will be awarded the $10,000 prize. Entrants will play a wide variety of competitive and cooperative games, including single player games (Towers of Hanoi, Blocks World), two player games (such as Chess) and many-player games (e.g. Chinese Checkers). In some cases, the games may be exhaustively searchable in the time allowed; in other cases, this is not possible. General game players must handle all of these possibilities.

Note that, prior to the competition, players are told nothing about the games to be played. The rules of all games are transmitted to the players electronically at the beginning of each match. A general game playing system must be able to read the rules for each game, receive runtime information from the game manager, decide on appropriate moves, and inform the manager of its decisions.

We demonstrate a system that provides flexible and responsive non-improvisatory musical accompaniment for a live soloist. The system hears the soloist with a hidden Markov model, while a Gaussian belief network models the musical interpretation and predicts future evolution. Live audio is generated by phase-vocoding a prerecorded accompaniment.
Poker Competition

The Poker Competition will take place Monday through Wednesday, July 17–19, in the Dartmouth room on the Upper Level of the World Trade Center. Recorded runs of a Texas Hold’Em game played at the University of Alberta, Canada will be shown and interactive demonstrations will be available for conference attendees to play against the bots. There will be a connection from the AAAI interface to Poker Academy showing all three bots on display. In addition, three academic posters will be on display from Monash University, Carnegie Mellon University, and the University of Alberta.

Table #12
Real-Time Interactive Learning in the NERO Video Game

Kenneth O. Stanley, The University of Central Florida, Igor Karpov, Risto Mikkulainen, and Aliza Gold, The University of Texas at Austin

In the NeuroEvolving Robotic Operatives (NERO) video game, the player trains a team of virtual robots for combat. The bots learn in real time through interacting with the player. The real-time NeuroEvolution of Augmenting Topologies (nTEAT) method drives the robots’ learning, making possible this new genre of video game.

Table #13
ScriptEase - Motivational Behaviors for Interactive Characters in Computer Role-Playing Games

Maria Cutumisu, Duane Szafron, Jonathan Schaeffer, Kevin Waugh, Curtis Onuczko, Jeff Siegel, and Allan Schumacher, University of Alberta

ScriptEase is a tool that allows authors with no programming experience to create interactive stories for computer role-playing games using design patterns that encapsulate frequent game scenarios. We show how ScriptEase can be used to generate intricate non-player character scripts that encapsulate motivational and PC-interactive behaviors for BioWare Corp.’s Neverwinter Nights game.

SEMPLAN: Combining Planning with Semantic Matching to Achieve Web Service Composition

Rama Akkiraju, Biplav Srivastava, Anca-Andreea Ivan, Richard Goodwin, and Tanveer Syeda-Mahmood, IBM Research

We present SEMPLAN, a novel system to compose Web services in the presence of semantic ambiguity by combining semantic matching and AI planning algorithms. We use cues from domain-independent and domain-specific ontologies to compute an overall semantic similarity score between ambiguous terms. This semantic similarity score is used by AI planning algorithms to guide the searching process when composing services. Experimental results indicate that planning with semantic matching produces better results than planning or semantic matching alone. The solution is suitable for semi-automated composition tools, directory and asset browsers.

Table #6
SemNews: A Semantic News Framework

Akhay Java, Tim Finin, Sergei Nirenburg, University of Maryland Baltimore County

SemNews is a semantic news service that monitors different RSS news feeds and provides structured representations of the meaning of news. As new content appears, SemNews extracts the summary from the RSS description and processes it using OntoSem, which is a sophisticated text understanding system. The text meaning representations are translated and published in Semantic Web representation language OWL.

Table #7
Strategic Sales Management in an Autonomous Trading Agent for TAC SCM

Wolfgang Ketterm, Eric Sodomka, Amrudin Agovic, John Collins, and Maria Gini, University of Minnesota

We present methods for an autonomous agent to predict price distributions and price trends in the customer market of the Trading Agent Competition for Supply Chain Management. We describe how these predictions can then be used by the agent to make strategic and tactical sales decisions.

Table #8
The Tactical Language and Culture Training System: A Demonstration

Andre Valente, W. Lewis Johnson and Hannes Vilhjalmsson, University of Southern California / Information Sciences Institute

The Tactical Language and Culture Training System (TLTS) helps learners acquire basic communicative skills in foreign languages and cultures. Learners practice social interaction in a simulated village, accompanied by a virtual aide who can provide assistance and guidance. Learners can speak and choose gestures on behalf of their character in the game.

Table #9
Using the Semantic Web to Integrate Econinformatics Resources

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We demonstrate an end-to-end use case of the semantic web’s utility for synthesizing ecological data. In particular, we describe ELVIS (the Ecosystem Location Visualization and Information System) and Triple Shop. ELVIS is a suite of tools for predicting food webs for a given location. Triple Shop is a SPARQL query tool which uses our semantic web search engine, Swoogle, to transform the semantic web into a potential dataset for answering arbitrary queries.

Fifteenth Annual AAAI Mobile Robot-Competition & Exhibition

The Fifteenth Annual Robot Competition and Exhibition will be held on the mezzanine and atrium lobby areas of the World Trade Center. The event brings together over 20 teams from universities, colleges, and research laboratories to compete and to demonstrate cutting edge, state of the art research in robotics and AI.

Scavenger Hunt

Robots search the conference hotel area for a checklist of given objects that may be distinguished using vision or other sensors. This task will require robots to reason about their spatial surroundings in a natural and dynamic environment. Both completely autonomous and shared-autonomy systems are welcome to complete, with each system judged based on the computational spatial reasoning it exhibits.

Human Robot Interaction

The Human-Robot Interaction event focuses on human-robot interaction. It includes a more structured version of last year’s Open Interaction Event as well as the past Robot Challenge. Teams are asked to submit entries of their own tasks for any of seven interaction categories. The first six demonstrate particular aspects of human-robot interaction, while the seventh is an integration category, for which only tasks that are eligible to demonstrate aspects from at least three of the first six categories.

The Robot Exhibition

The mission of the Robot Exhibition is twofold. First, 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. Second, the exhibition provides a venue for faculty using robotics in education to present their approaches and experiences. We encourage participation from all areas.

Workshop

The robot events culminate with a workshop where participants describe the research behind their entries.

General Cochairs
Paul Rybski (Carnegie Mellon University)
Jeffrey Forbes (Duke University)

Scavenger Hunt Cochairs
Zach Dodds (Harvey Mudd University)
Paul Oh (Drexel University)
Exhibition

Debra Burhans (Canisius College)
Bob Avanzato (Penn State Abington)

Robot Teams

Bridgewater State College
Team: Bridgewater wanderer
Contact: John F. Santore
Event: Scavenger Hunt

Brooklyn College, City University of New York
Team: Educational Robotics
Team members: Elizabeth Sklar, Simon Parsons, M.O. Azhar, Valerie Andrewlevich and A. Tuna Ozgelen
Event: Exhibition
Our "Educational Robotics" exhibit will feature a number of efforts to engage university students with robotics through teaching and outreach. Teaching runs the gamut from undergraduate introductory computer science to graduate-level artificial intelligence courses. Outreach involves collaborations with students and New York City public schools. We will highlight a range of curricula and team-based projects, which are often based on challenges from RoboCup Jr.

Bryn Mawr College
Team: Pyro Robotics
Contact: Doug Blank
Event: Scavenger Hunt and Exhibition

Canisius College
Team: Griffins
Team members: Debra Burhans, R. Mark Meyer, Pat VanVerth, Camille Moreno, Ben Rood, Andre Nelson, Nick Lahens, and David Puehn
Event: Scavenger Hunt and Exhibition
In the exhibition we will present several different educational projects that use Lego Mindstorms including a simulator that is currently under development. For the Scavenger Hunt we will be using an Aibo controlled through the Pyro framework. We will also demonstrate a realization of the "Wumpus World."

Canisius College & Hamilton College
Team: Snapry
Team members: Debra Burhans and Alistair Campell
Event: Exhibition
We will demonstrate robots that use SNePS, a powerful KR&R, for the knowledge level brain and Pyro for connecting to either a simulated or an actual robot (Albo). These represent two levels of a five-level cognitive architecture, GLAIR, that we have implemented using SNePS, Lisp, C, Python, and Pyro.

Carnegie Mellon University
Team: Claytronics
Contact: Seth Goldstein
Event: Exhibition

Carnegie Mellon University
Team: CMAssist
Team members: Paul E. Rybski, Kevin Yoon, Jeremy Stolarz, and Manuela Veloso
Event: Exhibition
The CMAssist RoboCup@Home team from Carnegie Mellon University studies how robots can best work around, interact with, and assist people in natural indoor environments. Specific research goals include recognition and detection of humans and their activities as well as using those detected human activities to learn about the environment.

The College of New Jersey
Team: TCNJ Interactive Robot Team
Contact: Yunfeng Wang
Events: Human Interaction and Exhibition

Drexel University
Team: DIAS
Contact: Paul Oh
Event: Exhibition
Drexel Integrated ATV System will showcase a drive-by-wire ATV. This dual-mode ATV can be operated normally with a driver, or controlled wireless by radio-control or via GPS waypoints. Also showcased is a 6-foot robotic helicopter.

Harvard University
Team: Collective Construction by Lego Robots
Contact: Radhika Nagpal
Event: Exhibition
Social insects, such as ants and termites, collectively build large and complex structures, with many individuals following simple rules and no centralized control or planning. Our goal is to design systems for automating construction that are similarly adaptive and robust, but build what we want.

Harvey Mudd College
Team: HMC Escher
Team members: Ben Tribelhorn and Zachary Dodds
Events: Scavenger Hunt and Exhibition
This entry features the ubiquitous iRobot Roomba. We have mounted a laptop and a camera to create a very powerful and very low-cost platform for teaching and experimenting with mobile robotics.

Idaho National Laboratory
Team: INL Robot and Human Systems Group
Contact: Douglas Few
Event: Exhibition

Kansas State University
Team: KSU Willie
Contact: David Gustafson
Event: Scavenger Hunt

Rowan University
Team: Rowan IMAPS
Contact: Hong Zhang
Event: Exhibition

Tulane University
Team Name: Tulane Robotics
Contact: Sheila Tejada
Event: Exhibition

University of California, Los Angeles
Team: UCLA HOBOS
Team members: Kamil Wnuk, Brian Fulker-son, and Jjeremi Sudol
Events: Scavenger Hunt and Exhibition
The HOBOS (highly organized bunch of scavengers) system is a scalable multi-agent system consisting of Evolution ER1 laptop robots capable of monocular vision. Each robot will demonstrate the ability to localize itself, recognize a set of objects, and communicate with peer robots to share location and coordinate exploration of the search space.

University of Manitoba
Team: Keystone Scavengers
Team Members: Jacky Baltes and Brian McKinnon
Events: Scavenger Hunt and Exhibition
We are working with stereo vision as the sole form of perception for Urban Search and Rescue (USAR) vehicles. Initial results demonstrate the potential of this system for USAR and other challenging domains.

University of Notre Dame
Team: ND-RUDY
Contact: Paul Schermerhorn
Event: Human Interaction

University of Sherbrooke
Team: LABORIUS
Team members: François Michaud, Dominic Létourneau, Maxime Fréchette, Éric Beaudry, Carle Côté, and Frodual Kabanza
Events: Human Interaction and Exhibition
Spartacus, our robot entry, integrates planning, sound source localization, tracking and separation, message reading, speech recognition and generation, and autonomous navigation capabilities onboard a custom-made interactive robot. Special focus is put on coordinating audio, visual, and graphical capabilities, monitoring the impacts of the capabilities in usage by the robot, and inferring the robot’s intentions and goals.

Washington University in St. Louis
Team: Lewis
Contact: Bill Smart
Events: Human Interaction, Scavenger Hunt and Exhibition

Western Washington University
Team: WWU Robots
Team members: Natasa Lazetic, Ben Greear, and Angelina Greear
Event: Exhibition
LEG0 Mindstorms robot sorts objects (into bins) based on their color features, using artificial neural networks. Objects to be sorted are LEG0 pieces, fruit, and so on. Lighting conditions will also be varied to test versatility of the robot.

General Information

Admission

Each conference attendee will receive a name badge upon registration. This badge is required for admittance to the technical, tutorial, IAAI and workshop programs. Tutorial and Workshop attendees must present their attendance tickets for admittance to the rooms. Tutorial attendees will also receive syllabi tickets, which may be redeemed for the syllabi volumes. Smoking, drinking and eating are not allowed in any of the technical, tutorial, workshop or IAAI sessions.
Banking
There is an ATM in the front lobby of the Seaport Hotel as well as by the Parking Cashier in the hotel. An ATM is also located at the entrance to the Commonwealth Exhibit Hall on the Harbor Level and on the Mezzanine Level across from the Amphitheatre in the World Trade Center.

Sovereign Bank
Sovereign Bank has two nearby locations.
200 Seaport Boulevard
Boston MA 02210
617-757-3400
Monday–Wednesday, 9 AM – 4 PM
Thursday–Friday, 9 AM – 5 PM
1.1 miles away
75 State Street
Boston MA 02210
617-345-8004
Monday–Friday, 8:30 AM – 5 PM
0.2 miles away

Business Centers
The Seaport Hotel and Seaport World Trade Center can assist you with business, entertainment or travel arrangements through the business center and resourceful, multilingual Concierge. Hours of operation are Monday – Friday, 8:00 AM – 5:00 PM; Saturday and Sunday (with advanced notice)

Seaport Hotel Business Center
One Seaport Lane
Boston, MA 02210
Voice: 617-385-4553
Fax: 617-385-4526

World Trade Center Business Center
200 Seaport Boulevard, Suite 301
Boston, MA 02210
Voice: 617-385-4349
Fax: 617-385-5491

FedEx Kinko’s
Boston MA BCEC
415 Summer Street
Boston, MA 02210
Voice: 617-954-2203
Fax: 617-954-2204
Email: usa1323@fedexkinkos.com

Career Information
A bulletin board for job opportunities in the artificial intelligence industry will be made available in the registration area, on the upper level of the World Trade Center. Attendees are welcome to post job descriptions of openings at their company or institution.

Handicapped Facilities
The Seaport Hotel and World Trade Center is equipped with handicapped facilities.

Housing
For information regarding hotel reservations, please contact hotels directly. For student housing, please contact Boston University at 617-353-8519.

Internet Access
The Seaport World Trade Center Complex offers complimentary wireless Internet access in public areas and all guest rooms, using either a laptop or handheld that is Wi-Fi 802.11b wireless enabled (for employer provided VPN access). A Wi-Fi 802.11b wireless networking card for most laptops and handhelds can be purchased at the Seaport Hotel gift shop if needed.

Public Space Wireless Instructions:
Leave your wireless network name (SSID) blank or set it to “Seaport” — minus the quotation marks — to gain access. Network encryption and authentication will not work; therefore, if your existing wireless profile encryption key (WEP) is enabled, either disable it or create a new profile without encryption. If you have difficulty, please refer to your wireless network card or operating system documentation for specific instructions on how to configure your device. You will need a standard Internet-ready browser such as Internet Explorer or Netscape Navigator on any operating system. With a properly installed wireless network card just launch your browser and connect to the Internet. For detailed information on Wi-Fi, visit www.wi-fi.org.

Please Note: The Seaport Hotel and World Trade center strongly recommends that their customers take measures to ensure the security of their Internet connections. Like any high-speed service, including DSL and cable, the Seaport wireless network is not inherently secure. Although they support customer-initiated security solutions such as virtual private networks (VPN), encryption and personal firewalls, they do not provide these solutions for their customers and cannot guarantee or otherwise be responsible for their effectiveness. It is the customer’s responsibility to adopt security measures that are best suited to their situation.

List of Attendees
A list of preregistered attendees of the conference will be available for review at the AAAI Desk in the registration area. Attendee lists will not be distributed.

Parking
The Seaport Garage is located beneath the Seaport World Trade Center West, Seaport World Trade Center East, and the Seaport Hotel. The following rates are in effect: 0–1 hour, $9; 1–12 hours, $17; 12–24 hours, $27. Seaport Hotel overnight guest rates are $36 per night for valet service and $28 per night for self-park.

Printed Materials
Display tables for the distribution of promotional and informational materials of interest to conference attendees will be located in the registration area.

Proceedings CD
Each technical registrant will receive a ticket with the registration materials for one copy of the conference CD. Tickets can be redeemed at the proceedings distribution center in the Dartmouth room, located on the upper level of the World Trade Center during registration hours. All tickets must be redeemed onsite by Thursday, July 20 at 11:00 AM. AAAI cannot mail CDs to registrants after the conference.

Restaurants at the World Trade Center and Seaport
Bakery Café on the Mezzanine level in the World Trade Center and on the lobby level of the Seaport Hotel is open for breakfast and lunch daily 7:00 AM – 2:00 PM. Starbucks is located in the lobby of the Seaport Hotel and offers gourmet blended coffee and other beverages, assorted baked goods, pastries, and light lunch items; open daily 6:30 AM – 5:30 PM. Sebastian’s Café on the Mezzanine level in the World Trade Center is open for daily lunch specials that include soups and sandwiches; open weekdays 11:30 AM – 2:00 PM. Aura Restaurant and Bar, an award winning restaurant in the Seaport Hotel serves breakfast, lunch and dinner daily.

Dunkin’ Donuts is conveniently located on the lower level of Seaport World Trade Center, adjacent to the Spirit of Boston dock.

Located in the lobby of Seaport World Trade Center East, Fresh City provides an upbeat and attractive environment combined with fast service and the freshest food. Fresh City is open Monday through Friday, 6:30 AM to 4:00 PM.

Shipping
The Seaport Hotel can assist with small deliveries, and can provide shipping labels for FedEx and UPS.

Transportation
For complete transportation options and costs in the Boston area, please see www.seaportboston.com/SeaBos/Home/RightPage.asp?PID=7463673

Taxi
Taxi service is available at the Seaport Hotel. Additionally, water taxis are available.
from the Seaport WTC to the Logan Airport marine terminal where free ground transportation awaits to all airport terminals. Rowes Wharf Water Transport picks up at the MBTA Dock on the west side of the Seaport WTC by Dunkin Donuts (between the Spirit of Boston and Spirit Elite). City Water Taxi also provides water taxi service (details follow). The City Water Taxi dock is located at the east apron of WTC, next to Sovereign Bank.

Shuttle Service
The Seaport World Trade Center complex provides free shuttle service to North Station and the Financial District. Continuous service is provided during morning and evening commute periods from the Seaport World Trade Center complex to State Street and North Station. Shuttles pick-up passengers curbside and depart either when a shuttle is filled to capacity or when an approaching vehicle is close behind.

The Seaport Express
The Seaport Express provides water shuttle service between the Seaport World Trade Center and Central Wharf (at the New England Aquarium, near the MBTA Blue Line Aquarium Stop). Daily scheduled service is $1.50 each way, and MBTA Combo Plus and Higher passes are accepted as fare for the scheduled service.

City Water Taxi
Destinations include: Logan Airport, Moakley Federal Courthouse, World Trade Center Complex, Bank of America Pavilion, Black Falcon Terminal, Long Wharf, Burrough's Wharf in the Historic North End, North Station's Lovejoy Wharf, Fan Pier / Moakley Courthouse, Marginal Street / East Boston, and Charlestown Navy Yard (Pier 4). Pick-up and drop-off for 255 State Street behind the Marriott. To request a pick up, call City Water Taxi at (617) 422-0392, or call on the two way radio located at the dock.

Rowes Wharf Water Transport
Available year round, destinations include Logan Airport, Rowes Wharf, Moakley Federal Courthouse, World Trade Center Complex, Bank of America Pavilion, Black Falcon Terminal, Central Wharf (Aquarium), North End, and Charlestown Navy Yard.

To request a pick up, call Rowes Wharf Water Transport at 617-406-8584 or call when you get to the dock.

City Transit Systems
The MBTA Silver Line provides service from the WTC Station to Logan International Airport terminals every 10 minutes during the weekday and every 15 minutes during the weekend. Additionally, bus routes 448, 449, and 459 provide service to Logan Airport from the World Trade Center Boston/Seaport District via the Ted Williams Tunnel/I-90 West. Please visit the MBTA website (www.mbta.com) to learn more about schedule information.

The MBTA Silver Line is a new, rubber-tired, dual-mode service for the Seaport District and includes a one-mile tunnel from South Station to Moakley Federal Courthouse and the Seaport World Trade Center complex, connecting the Seaport District with Boston's transit network.

Boston's Famous “T”
Provides quick, convenient, and reliable connections throughout the metropolitan area. The Red, Orange, Blue, and Green lines provide connections downtown that can be accessed at the MBTA North Station and MBTA State Street Station (via the World Trade Center Complex Shuttle) and South Station (via the MBTA Silver Line Waterfront).
**Tutorial Forum Syllabi**

Extra copies of AAAI-06 tutorial syllabi volume will be available for purchase in AAAI onsite registration area, beginning Tuesday, July 18. Supplies are limited. The cost is $25.00 per volume (includes all tutorials). Preregistration tutorial syllabi tickets may be redeemed at the Proceedings distribution center in Dartmouth on the Upper level of the World Trade Center during registration hours. All tickets must be redeemed onsite by Thursday, July 20 at 11:00 AM. AAAI cannot mail books to registrants after the conference.

**Disclaimer**

In offering the Seaport Hotel and World Trade Center, Boston University, Freeman, Projection Presentation Technology, Logan International Airport, and all other service providers (hereinafter referred to as "Supplier(s)" for the National Conference on Artificial Intelligence and the Innovative Applications Conference), the American Association for Artificial Intelligence (AAAI) acts only in the capacity of agent for the Suppliers that are the providers of the service. Because AAAI has no control over the personnel, equipment or operations of providers of accommodations or other services included as part of the AAAI-06/IAAI-06 program, AAAI assumes no responsibility for and will not be liable for any personal delay, inconveniences or other damage suffered by conference participants which may arise by reason of (1) any wrongful or negligent acts or omissions on the part of any Supplier or its employees, (2) any defect in or failure of any vehicle, equipment or instrumentality owned, operated or otherwise used by any Supplier, or (3) any wrongful or negligent acts or omissions on the part of any other party not under the control, direct or otherwise, of AAAI.

**Volunteer Station**

The volunteer station will be located in the onsite registration area. All volunteers are required to sign in prior to their shift, and sign out when they finish.
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