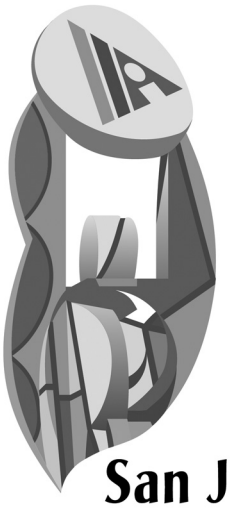


AAAI-04
IAAI-04
San Jose, California

Program & Exhibit Guide

Nineteenth National Conference on
Artificial Intelligence (AAAI-04)

Sixteenth Conference on Innovative Applications
of Artificial Intelligence (IAAI-04)

July 25–29, 2004

San Jose McEnery Convention Center and San Jose Marriott

San Jose, California

Sponsored by the American Association for Artificial Intelligence

Cosponsored by ACM/SIGART, Defense Advanced Research Projects Agency (DARPA),
Google, IBM Research, Intelligent Information Systems Institute (IISI), Cornell University , Microsoft Research,
NASA Ames Research Center, National Science Foundation, and the Naval Research Laboratory

Contents

Acknowledgments

The American Association for Artificial Intelligence wishes to acknowledge and thank the following individuals for their generous contributions of time and energy to the successful creation and planning of the Nineteenth National Conference on Artificial Intelligence and the Sixteenth Conference on Innovative Applications of Artificial Intelligence.

- AAAI Conference Committee Chair: James A. Hendler, *University of Maryland*
- AAAI-04 Program Cochairs: George Ferguson, *Rochester University* and Deborah L. McGuinness, *Stanford University*
- IAAI-04 Conference Chair: Randall Hill, *Institute for Creative Technologies, University of Southern California*
- IAAI-04 Conference Cochair: Neil Jacobstein, *Teknowledge Corporation*
- Intelligent Systems Demonstrations Chair: Christopher Welty, *IBM Research*
- Mobile Robot Competition and Exhibition General Cochairs: Bill Smart, *Washington University in St. Louis,* and Sheila Tejada, *University of New Orleans*
- AAAI/SIGART 2004 Doctoral Consortium Chair: Robert St. Amant, *North Carolina State University*
- Student Abstract and Poster Cochairs: Avi Pfeffer, *Harvard University* and Mark Craven, *University of Wisconsin, Madison*
- Tutorial Forum Chair: Matthew Stone, *Rutgers University*
- Workshop Program Chair and Cochair: Milos Hauskrecht, *University of Pittsburgh* and Dieter Fox, *University of Washington*

A complete listing of the AAAI-04 and IAAI-04 Program Committee members appears in the conference proceedings.

Sponsoring Organizations

AAAI gratefully acknowledges the generous contributions of the following organizations to AAAI-04:

- American Association for Artificial Intelligence
- ACM/SIGART
- Defense Advanced Research Projects Agency (DARPA)
- Google
- IBM Research
- Intelligent Information Systems Institute (IISI), Cornell University
- Microsoft Research
- NASA Ames Research Center
- National Science Foundation
- Naval Research Laboratory

Keynote Address

Daniel J. Clancy, Chief, Computational Sciences Division, NASA Ames Research Center, will give the AAAI-04 Keynote Address, "Intelligent Systems and the Nations Vision for Space Exploration," on Tuesday, July 27, 9:00 AM in the San Jose Ballroom of the Marriott.

AAAI Awards

AAAI Awards will be presented Tuesday, July 27, San Jose Ballroom, Marriott, at 8:30 AM.

Classic Paper Award

The 2004 AAAI Classic Paper Award will be presented to Hector Levesque for "A Logic of Implicit and Explicit Belief." Honorable Mention is given to Ronald Brachman and Hector Levesque for "The Tractability of Subsumption in Frame-based Description Languages" and Michael Georgeoff for "A Theory of Action for Multi-Agent Planning." All papers were presented at AAAI-84.

Distinguished Service Award

The 2004 AAAI Distinguished Service Award will be presented to Bruce Buchanan for his extraordinary service to AAAI and his outstanding contributions to the AI community.

Outstanding Paper Awards

This year, AAAI's National Conference on Artificial Intelligence honors three papers that exemplify high standards in technical contribution and exposition. Presented by AAAI-04 Cochairs Deborah L. McGuinness and George Ferguson.

Outstanding Paper Award

- **Learning and Inferring Transportation Routines.** Lin Liao, Dieter Fox, and Henry Kautz, *University of Washington*

Honorable Mention

- **Interactive Information Extraction with Constrained Conditional Random Fields.** Trausti Kristjansson, *Microsoft Research,* Aron Culotta, *University of Massachusetts Amherst,* Paul Viola, *Microsoft Research,* and Andrew McCallum, *University of Massachusetts Amherst*
- **Loop Formulas for Circumscription.** Joohyung Lee, *University of Texas, Austin* and Lin Fangzhen, *Hong Kong University of Science and Technology*

IAAI Deployed Applications Awards

IAAI-04 Chair Randall Hill and Cochair Neil Jacobstein will announce the four winners (see schedule for paper titles). Certificates will be presented during paper sessions.

Robert S. Englemore Memorial Award and Lecture

Sponsored by IAAI-04 and AI Magazine

The Robert S. Engelmore Memorial Award and Lecture was established in 2003 to honor Dr. Engelmore's extraordinary service to AAAI, AI Magazine, and the AI applications community, and his contributions to applied AI. The 2004 award will be presented to Edward Feigenbaum, Kumagai Professor of Computer Science Emeritus at Stanford University by Neil Jacobstein, IAAI-04 Program Cochair, and David Leake, Editor-in-Chief, *AI Magazine.* The lecture will be held Wednesday, July 28, San Jose Ballroom, Marriott at 9:00 AM.

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 six newly elected Fellows for 2004: Subbarao Kambhampati, A*rizona State University;* Craig A. Knoblock, *University of Southern California;* Daphne Koller, *Stanford University;* Gérard G. Medioni, *University of Southern Califonia;* Stuart M. Shieber, *Harvard University;* and Moshe Y. Vardi, *Rice University.*

The 2004 Fellows Recognition Dinner will be held Tuesday, July 27, from 7:30 – 10:00 PM in the Pagoda Restaurant of the Fairmont Hotel

Receptions, Meetings, & Posters

San Jose. A reception will begin at 7:30 PM, followed by dinner at 8:00 PM (by invitation only).

Opening Reception

The AAAI-04 Opening Reception will be held Monday, July 26, 6:30 – 8:00 PM in the San Jose Ballroom of the Marriott. This event will provide the traditional opportunity for attendees to socialize in a unique setting prior to the beginning of the first day of technical sessions. A variety of hors d'oeuvres and a no-host bar will be available. Admittance to the reception is free to AAAI-04 registrants. A $25.00 per person fee ($10.00 for children) will be charged for spouses and other nontechnical conference registrants.

Student Abstract Poster Program

Students whose abstracts were chosen for inclusion in the conference proceedings will display their work at the Student Abstract Poster Session in the Exhibit Concourse on Tuesday, July 27 from 3:00 – 5:30 PM. In addition, participants in the AAAI/SIGART Doctoral Consortium will display their poster presentations during this session. All students will be available for questions. Refreshments during the afternoon coffee break accompanying this session are sponsored by IBM Research.

Doctoral Consortium (DC-04)

The Ninth AAAI/SIGART Doctoral Consortium program will be held on Sunday and Monday, July 25-26 from 8:30 AM – 5:30 PM in the Almaden Room of the San Jose Marriott. 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 twelve students accepted to participate in this program will also participate in the Student Poster program on Tuesday, July 27, from 3:00 – 5:30 PM in the Exhibit Concourse. All interested AAAI-04 student registrants are invited to observe the presentations and participate in discussions at the workshop. AAAI and ACM/SIGART gratefully acknowledge a grant from the National Science Foundation and Microsoft that provides partial funding for this event.

AAAI Business Meeting

The AAAI Annual Business Meeting will be held Thursday, July 29. 12:45 – 1:15 PM, Meeting Room A2, San Jose McEnery Convention Center.

AAAI Conference Committee Meeting

The Conference Committee Meeting will be held Thursday, July 29, 7:45 – 9:00 AM, Guadalupe Room, San Jose Marriott.

AAAI Publications Committee Meeting

The Publications Committee Meeting will be held Tuesday, July 27, 12:45 – 2:00 PM, Guadalupe Room, San Jose Marriott.

AI Journal Editorial Board Meeting

The *AI Journal* Editorial Board lunch will be held Wednesday, July 28, 12:45 – 2:00 PM, Guadalupe Room, San Jose Marriott.

AI Magazine Editorial Board Meeting

The *AI Magazine* Editorial Board Meeting will be held Monday, July 26, 12:00 – 2:00 PM, Salon II, San Jose Marriott.

Executive Council Meeting

The AAAI Executive Council Meeting will be held Monday, July 26, 9:00 AM – 3:00 PM, Salon I, San Jose Marriott. Continental breakfast will be available at 8:30 AM.

Program Committee Luncheon

The AAAI-04 / IAAI-04 Program Committee Luncheon will be held Tuesday, July 27, 12:45 – 2:00 PM, in the Willow Glen Room, San Jose Marriott, to honor the contributions of all the members of the AAAI-04 and IAAI-04 Program Committees (by invitation only).

Conference at a Glance

MORNING	AFTERNOON	EVENING
Sunday, July 25 Registration Tutorial Forum Workshops AAAI/SIGART DC	Registration Tutorial Forum Workshops AAAI/SIGART DC	
Monday, July 26 Registration Tutorial Forum Workshops AAAI/SIGART DC NCER	Registration Tutorial Forum Workshops AAAI/SIGART DC NCER	Opening Reception NCER Reception
Tuesday, July 27 Registration Keynote Address AAAI-04 / IAAI-04 Invited Presentations Exhibition / IS Demos Robots / Botball / NCER	Registration Student Poster Session AAAI-04 / IAAI-04 Exhibition / IS Demos Robots / Botball / NCER	AAAI Fellows Dinner Collegiate Botball
Wednesday, July 28 Registration AAAI-04 / IAAI-04 Invited Presentations Exhibition / IS Demos Robots / Botball / NCER	Registration AAAI-04 / IAAI-04 Exhibition / IS Demos Robots / Botball / NCER	Robot Workshop Collegiate Botball
Thursday, July 29 Registration AAAI-04 / IAAI-04	AAAI-04 / IAAI-04 AAAI Business Meeting	

Tutorial Forum

AAAI-04 technical registration includes admission to up to four tutorials and one copy of the comprehensive AAAI-04 Tutorial Forum Notes. A maximum of four consecutive tutorials may be taken due to parallel schedules. Tutorial attendees may redeem their tutorial syllabi tickets at the proceedings distribution room.

Session I: Sunday, July 25

9:00 AM – 1:00 PM

SA1: Collaborative Multiagent Systems
Barbara Grosz, Charlie Ortiz, and Milind Tambe
A1/8, San Jose McEnery Convention Center

SA2: Automated Invention by Means of Genetic Programming
John R. Koza and Lee Spector
A2, San Jose McEnery Convention Center

SA3: Building Intelligent Agents Using Soar (FULL DAY)
John E. Laird
B4, San Jose McEnery Convention Center

Session II: Sunday, July 25

2:00 – 6:00 PM

SP1: Preferences
Jon Doyle and Ulrich Junker
A2, San Jose McEnery Convention Center

SP2: Exact and Approximate Inference in Probabilistic Graphical Models
Kevin Murphy
A1/8, San Jose McEnery Convention Center

Session III: Monday, July 26

9:00 AM – 1:00 PM

MA1 Market Clearing Algorithms
Tuomas Sandholm
A1, San Jose McEnery Convention Center

MA2: Stochastic Local Search: Foundations and Applications
Holger H. Hoos and Thomas Stützle
A2, San Jose McEnery Convention Center

MA3: High Level Vision
David A. Forsyth
A7, San Jose McEnery Convention Center

MA4: AI Techniques for Personalized Recommendation (FULL DAY)
John Riedl, Anthony Jameson, and Joseph Konstan
A8, San Jose McEnery Convention Center

Tutorial Forum & Marriott Map

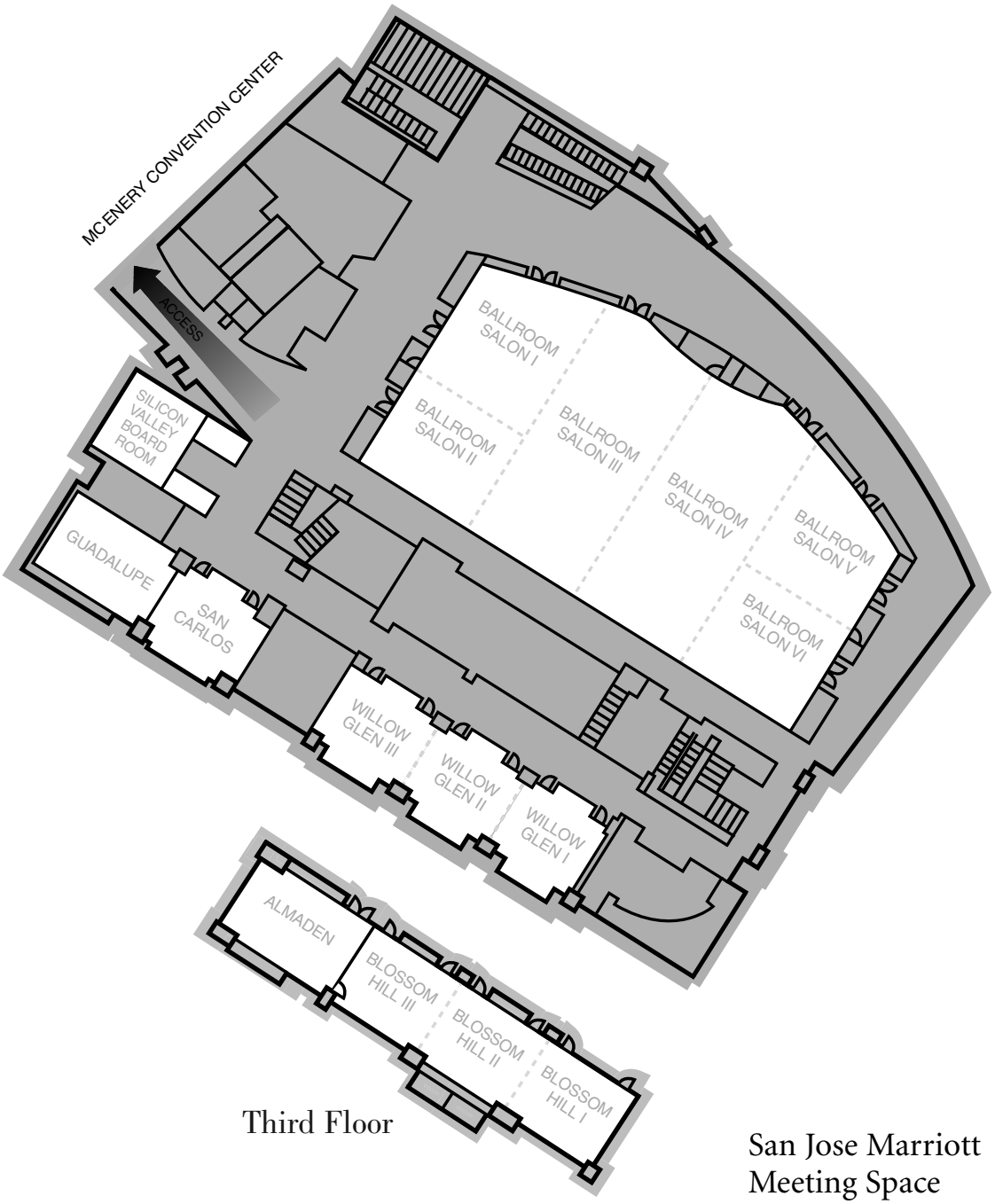
Session IV: Monday, July 26

2:00 – 6:00 PM

MP1: Markets in Uncertainty: Risk, Gambling, and Information Aggregation
David M. Pennock and Michael P. Wellman
A1, San Jose McEnery Convention Center

MP2: Quantitative Temporal Reasoning in Planning Problems
Luke Hunsberger
A2, San Jose McEnery Convention Center

MP3: Automating the Design of Visualizations
Maneesh Agrawala, Julie Heiser, and Barbara Tversky
A7, San Jose McEnery Convention Center



Third Floor

San Jose Marriott
Meeting Space

Workshop Program

Attendance at the workshops is limited, and participation is by invitation only. All workshop participants must register for the AAAI-04 technical program.

Sunday, July 25

W2: Agent Organizations: Theory and Practice
Organizers: Virginia Dignum, Daniel Corkill, Catholijn Jonker, and Frank Dignum
Guadalupe, San Jose Marriott
8:30 AM – 5:30 PM

W4: Challenges in Game AI (Two-Day)
Organizers: Dan Fu and Jeff Orkin
B2/3, San Jose McEnery Convention Center
8:30 AM – 5:30 PM

W6: Fielding Applications of Artificial Intelligence
Organizer: William E. Cheetham
San Carlos, San Jose Marriott
8:45 AM – 5:00 PM

W13: Semantic Web Personalization
Organizers: Bamshad Mobasher, Sarabjot Singh Anand, Bettina Berendt, and Andreas Hotho
Willow Glen II, San Jose Marriott
9:15 AM – 5:30 PM

W16: Supervisory Control of Learning and Adaptive Systems
Organizers: Michael Rosenstein and Mohammad Ghavamzadeh
Willow Glen III, San Jose Marriott
9:00 AM – 6:30 PM

Monday, July 26

W1: Adaptive Text Extraction and Mining
Organizer: Ion Muslea
Guadalupe, San Jose Marriott
8:30 AM – 5:30 PM

W3: Anchoring Symbols to Sensor Data
Organizers: Silvia Coradeschi and Alessandro Saffiotti
Blossom Hill I, San Jose Marriott
8:40 AM – 5:30 PM

W4: Challenges in Game AI (Two-Day)
Organizers: Dan Fu and Jeff Orkin
B2/3, San Jose McEnery Convention Center
8:30 AM – 5:45 PM

W7: Forming and Maintaining Coalitions in Adaptive Multiagent Systems
Organizers: Leen-Kiat Soh and John E. Anderson
Willow Glen III, San Jose Marriott
8:45 AM – 4:00 PM

W8: Intelligent Agent Architectures:
Combining the Strengths of Software Engineering and Cognitive Systems
Organizers: Randolph M. Jones, Robert E. Wray, and Matthias Scheutz
Blossom Hill II, San Jose Marriott
8:30 AM – 6:00 PM

W9: Learning and Planning in Markov Processes—Advances and Challenges
Organizers: Daniela P. de Farias, Shie Mannor, Doina Precup, and Georgios Theocharous
Willow Glen I/II, San Jose Marriott
8:45 AM – 6:30 PM

W14: Sensor Networks
Organizers: Gaurav S. Sukhatme, Adnan Darwiche, and Deborah Estrin
Blossom Hill III, San Jose Marriott
8:00 AM – 5:20 PM

W15: Spatial and Temporal Reasoning
Organizers: Hans W. Guesgen and Gerard Ligozat
San Carlos, San Jose Marriott
9:00 AM – 12:00 PM

Wednesday, July 28

W17: Mobile Robotic Competition and Exhibition Workshop
Organizer: Frederick Crabbe
A8, San Jose McEnery Convention Center
6:00 PM – 9:00 PM

Invited Talks

AAAI-04 invited talks will be held in the San Jose Ballroom of the San Jose Marriott and IAAI-04 panels will be held in Meeting Room B2/3 of the San Jose Convention Center.

Tuesday, July 27

9:00 – 10:00 AM

AAAI-04 Keynote Address:

Intelligent Systems and the Nation's Vision for Space Exploration

Daniel J. Clancy, *NASA Ames Research Center*

Over the past few months, NASA has been in the news numerous times both for the exciting discoveries of the pair of Mars Rovers as well as the country's vision for space exploration. This vision focuses on the joint human and robotic exploration of the solar system starting with a return to the moon and then the human exploration of Mars. In addition, the vision includes a continued array of exciting robotic missions to Mars as well as other destinations. There are numerous challenges that must be addressed to accomplish this vision. One critical area of technology is the broad area of information technology with a particular emphasis on intelligent systems. Future human exploration will require a new level of technology enabling NASA to deploy smarter, more adaptive systems. These systems must be designed to complement their human partners. In this talk, Clancy will present a brief overview of the new vision and then will talk in depth about a range of technologies that have been developed and demonstrated by NASA over the past few years. In particular, he will focus on how advanced artificial intelligence technologies have been developed and demonstrated within a robust environment and then in some cases deployed on NASA missions. Technologies that will be discussed include: automated planning and scheduling, human-centered computing, remote collaboration tools, machine learning and multimodel interaction using EEG and EMG signals.

10:30 – 11:30 AM

AAAI-04 Invited Talk:

Agents Meet the Semantic Web in the Aether

Tim Finin, *University of Maryland, Baltimore County*

The software agents paradigm has received considerable research but has not yet found broad application. The vision is still sound and will be reinvigorated by two new developments: semantic web languages, which provide stronger knowledge sharing technology; and the emergence of pervasive computing environments, whose requirements match the strengths of multiagent systems.

11:40 AM – 12:40 PM

AAAI-04 Invited Talk:

Real Robots for the Real World

Sebastian Thrun, *Stanford University*

In 2002, nine coal mines were almost buried alive in Somerset, Pennsylvania, when accidentally breaching a neighboring mine submersed in water, and thought to be several hundred yards away. According to a 1991 survey "tens of thousands, perhaps even hundreds of thousands, of abandoned mines exist today in the United States. Not even the U.S. Bureau of Mines knows the exact number, because federal recording of mining claims was not required until 1976." An improved understanding of the sizes, locations, and conditions of abandoned mines could substantially reduce the many risks to society that arise from subsidence, contamination, and other factors characteristic of many abandoned mines today.

This talk describes the Groundhog robot system, developed to acquire volumetric maps abandoned mines. Thrun will discuss some of the challenges that arise when sending a robot into mines, where it has to operate truly autonomously, outside the communication range of its creators. Specifically, he will present some recent innovations on large-scale robotic mapping, exploration, and navigation in unknown and hazardous environments. These techniques leverage some of the most advanced work in large-scale graphical models, probabilistic inference, and decision making under uncertainty—topics that have been at the heart of AI research for more than a decade.

The Groundhog project was jointly conducted with Red Whittaker and Scott Thayer, who led the robot development, and the Carnegie Mellon University Mobile robot design class. Some of the material presented was contributed by researchers from the Fraunhofer Institute in Germany.

2:00 – 3:00 PM

AAAI-04 Invited Talk:

Strength of Character: AI Personalities in Video Games

Ian Lane Davis, *Mad Doc Software*

Davis will examine the upcoming great frontier in AI, which is the construction of believable characters in video games. He will touch on all the aspects of making believable characters from animations to behaviors to internal models of AI.

3:10 – 4:10 PM

AAAI-04 Invited Talk:

Human Dynamics

Alex (Sandy) Pentland, *MIT Media Laboratory*

Important and complex discussions are almost always face-to-face, with little or no technology intervention. The result is that current computer and communication tools are largely restricted to mechanizing back-office and support functions. Pentland believes that we can radically improve the functioning of the organizations through active analysis of face-to-face interactions. By using wearable machine perception to characterize, annotate, and influence face-to-face interactions we can augment peoples' memory, initiate productive interactions, improve group decision making, and better understand and manage the functioning of distributed workforce. Examples of each type of augmentation will be shown, and privacy concerns addressed.

Wednesday, July 28

9:00 – 10:00 AM

Joint AAAI-04 / IAAI-04 Robert S. Engelmore Memorial Lecture:

The Power of "Clear and Demonstrative Knowledge": In Honor of a "True Son of Science"

Edward Feigenbaum, *Stanford University*

This talk, given to honor the memory and work of Robert S. Engelmore, revisits some of the themes that were central to his work by giving them a contemporary context. What is an up-to-date view of the "knowledge is power" hypothesis? What about knowledge webs, new applications of knowledge-based systems, and particularly the blackboard-architectures that RSE helped to develop?

10:30 – 11:30 AM

AAAI-04 Invited Talk:

If Not the Turing Test, Then What?

Paul Cohen, *University of Massachusetts Amherst and USC Information Sciences Institute*

Turing proposed his indistinguishability test more than half a century ago, and although it is never far from the thoughts of AI researchers, it has done us little good. While other sciences seem motivated by their grand challenges, AI does not strive to pass Turing's test. It is too remote a prospect, and the test itself provides no compass or route markers. It is mired in philosophical problems, it ignores physical and perceptual aspects of intelligence, and it has too many prerequisites. Yet Turing's test has virtues we should preserve in more effective grand challenges: it emphasizes common sense, universal scope, and understanding; success is judged by ordinary people; and the test provides ample rope to hang oneself. These are good criteria for grand challenge problems in general.

But there are other criteria that Turing's test does not satisfy. We need progressions of challenges, spaced at two-to-five year intervals, which will get us to Turing's goal within twenty years, and parallel series of challenges in the perceptual/physical realm. We need "come as you are" challenges that do not require something else to be achieved before we can start work. These problems should drive the development of new technologies but discourage "self-inflicted" research. Ph.D. students should be able to trace very short paths from their dissertation topics to one or more of these problems, and should see clearly the progression from it to longer-term challenges. The grand challenge problems should be updated regularly to deal with unforeseen impediments.

Cohen will give several possible examples of progressions of grand challenge problems. It is time to put aside the Turing Test and replace it with challenges that work for us.

2:00 – 3:00 PM

AAAI-04 Invited Talk:

AI and Biomedicine: Helping Scientists Reason about Genomes, Drugs, Diseases

Russ B. Altman, *Stanford University Medical Center*

Biology and medicine are now generating data at a pace far exceeding the ability of scientists completely to analyze it. Bioinformatics has responded with a number of powertools for reducing large data sets into manageable chunks. These tools are limited in two ways: they can't

read the published literature (or textbooks) and they don't have biological common sense, so they sometimes propose things that are already well-known or don't make sense (and thus can lose credibility). We are trying to ameliorate these problems with technology squarely within, or closely related to AI.

2:00 – 4:10 PM

IAAI Robotics Panel

3:10 – 4:10 PM

AAAI-04 Invited Talk:

Intelligent Technology for Adaptive Aging

Martha E. Pollack, *University of Michigan*

The world's population is rapidly aging, and some are predicting a coming "crisis in caregiving." Intelligent technologies have the potential to help avoid this crisis, by providing people with ways to adapt to the physical and cognitive changes that can accompany aging. This talk will survey the state-of-the-art in such technology, highlight the important role of AI techniques in its design, and describe open research challenges.

4:30 – 5:30 PM

AAAI-04 Invited Talk:

Building a Life Science Company around Statistical Machine Learning

Astro Teller, *BodyMedia, Inc.*

A tour through five years of challenges and discoveries building a wearable body monitoring business using statistical machine learning techniques. The talk will cover challenges gathering data, building body state models, validating the models with the medical community, and place AI within the larger context of the company and the industry.

Thursday, July 29

9:00 – 10:00 AM

AAAI-04 Invited Talk:

Applications of Artificial Intelligence to Web Search

Peter Norvig, *Google*

Web search engines have accumulated billions of pages of text. A corpus of this size provides an interesting opportunity for techniques in machine learning, natural language processing, and other areas of artificial intelligence. This talk will examine how these techniques can be used in a large, practical web search engine.

10:30 AM – 12:40 AM

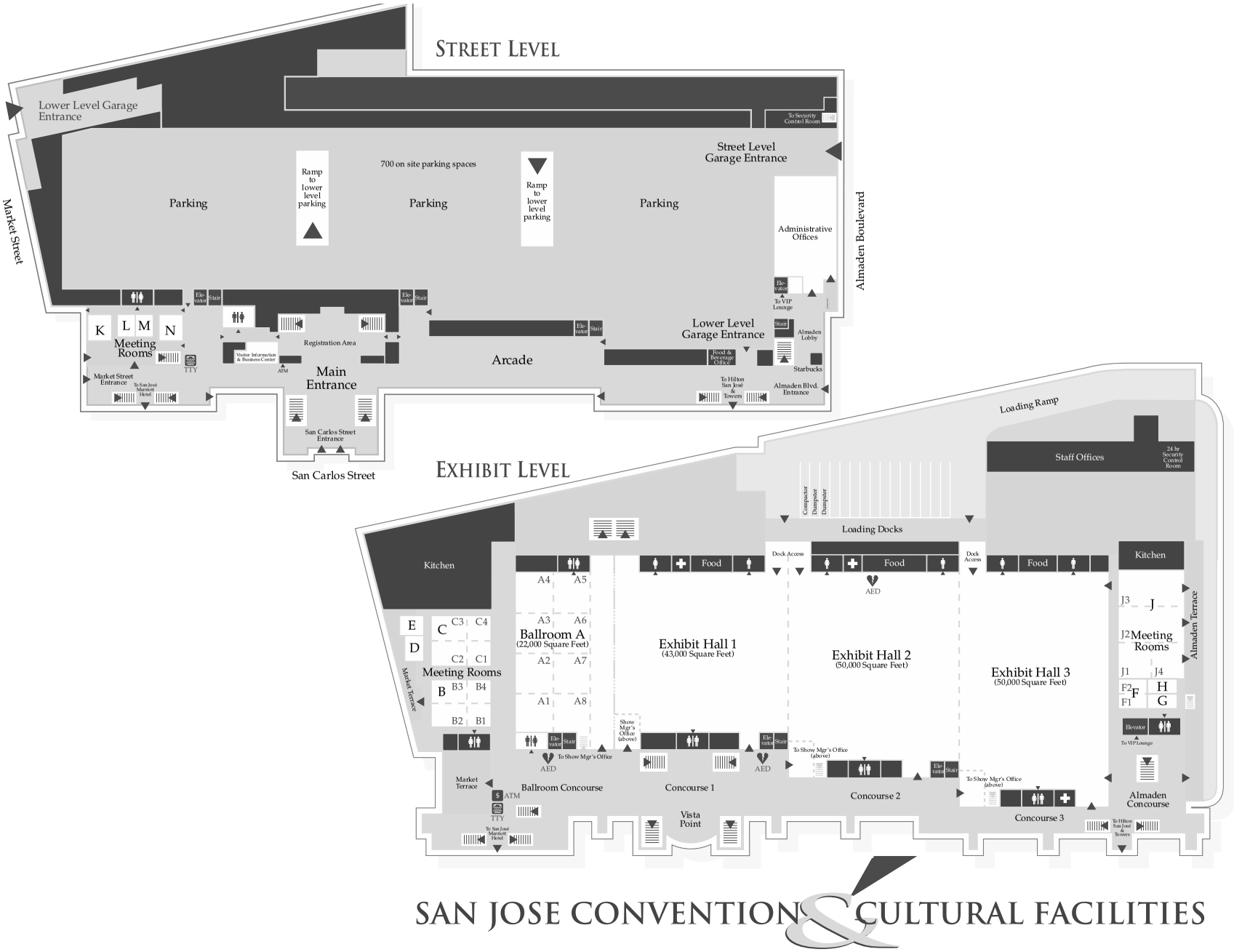
IAAI-04 Panel Session:

The Broader Role of Artificial Intelligence in Large-Scale Scientific Research

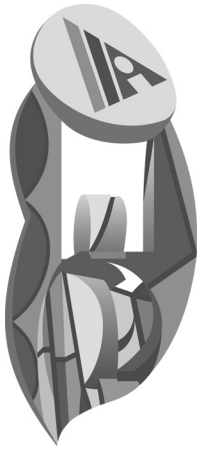
Panel Organizer: Yolanda Gil, *USC Information Sciences Institute*

Panelists: David De Roure, *University of Southampton,* Steven Meacham, *National Science Foundation,* and Joel Saltz, *The Ohio State University*

Many ambitious scientific endeavors are being pursued by shifting from an emphasis on individual efforts to cross-disciplinary and large-scale experimentation and analysis. This panel will cover new directions and opportunities in this area that will challenge the field of AI in the years to come. Current distributed computing infrastructure supports sharing, managing, and accessing diverse resources such as peta-scale data repositories, high performance computing, sophisticated instruments, remote sensors and data collection facilities, document management and digital libraries, and people with complementary expertise about a phenomenon under study. The panelists will discuss how the U.S. National Science Foundation and the U.K. e-Science program are planning for this future, and present some ongoing work under those and other programs using AI techniques to integrate data and scientific applications.



SAN JOSE CONVENTION & CULTURAL FACILITIES

7/27	8:30 – 10:00 AM		10:30 – 11:30 AM	11:40 AM – 12:40 PM
San Jose Ballroom, Marriottt	**Welcome and Opening Remarks/Outstanding Award Presentations** *George Ferguson and Deborah McGuinness, Program Cochairs* **IAAI-04 Deployed Application Award Announcements** *Randall Hill and Neil Jacobstein, IAAI Program Cochairs* **AAAI Special Award Presentations** *Ron Brachman, AAAI President, and Tom Mitchell, AAAI Past President*		**Invited Talk** **Agents Meet the Semantic Web in the Aether** *Tim Finin, University of Maryland, Baltimore County*	**Invited Talk** **Real Robots for the Real World** *Sebastian Thrun, Stanford University*
Meeting Room A1, San Jose Convention Center	9:00 – 10:00 AM San Jose Ballroom, Marriott **AAAI-04 Keynote Address** **Intelligent Systems and the Nations Vision for Space Exploration** *Daniel J. Clancy, NASA Ames Research Center*	Coffee Break	**Extracting Opinions** **Mining Opinion Features in Customer Reviews** *Minqing Hu and Bing Liu* **Just How Mad Are You? Finding Strong and Weak Opinion Clauses** *Theresa Wilson, Janyce Wiebe, and Rebecca Hwa*	**Information Extraction** **Methods for Domain-Independent Information Extraction from the Web: An Experimental Comparison** *Oren Etzioni, Michael Cafarella, Doug Downey, Ana-Maria Popescu, Tal Shaked, Stephen Soderland, Daniel S. Weld, and Alexander Yates* *Outstanding Paper Honorable Mention:* **Interactive Information Extraction with Constrained Conditional Random Fields** *Trausti Kristjansson, Aron Culotta, Paul Viola, and Andrew McCallum*
Meeting Room A2, San Jose Convention Center	 **AAAI / IAAI Tuesday Technical Sessions**	10:00 – 10:30	**Temporal Planning** **Branching and Pruning: An Optimal Temporal POCL Planner Based on Constraint Programming** *Vincent Vidal and Héctor Geffner* **Continuous Time in a SAT-based Planner** *Ji-Ae Shin and Ernest Davis*	**Ontologies** **Evaluating Ontology Cleaning** *Christopher Welty, Ruchi Mahindru, and Jennifer Chu-Carroll* **Mereological Semantics for Bio-Ontologies** *Udo Hahn, Stefan Schulz, and Kornél Markó*
Meeting Room A7, San Jose Convention Center		Tuesday, July 27	**CP Nets** ***m*CP Nets: Representing and Reasoning with Preferences of Multiple Agents** *Francesca Rossi, K. Brent Venable, and T. Walsh* **Extending CP-Nets with Stronger Conditional Preference Statements** *Nic Wilson*	**Preferences** **Low-cost Addition of Preferences to DTPs and TCSPs** *Bart Peintner and Martha E. Pollack* **A Computational Study of the Kemeny Rule for Preference Aggregation** *Andrew Davenport and Jayant Kalagnanam*
Meeting Room A8, San Jose Convention Center			**Robot Learning** **Skill Acquisition and Use for a Dynamically-Balancing Soccer Robot** *Brett Browning, Ling Xu, and Manuela Veloso* **Machine Learning for Fast Quadrupedal Locomotion** *Nate Kohl and Peter Stone*	**Robot Mission Planning** **Advice Generation from Observed Execution: Abstract Markov Decision Process Learning** *Patrick Riley and Manuela Veloso* **Interleaving Temporal Planning and Execution in Robotics Domains** *Solange Lemai and Félix Ingrand*
Meeting Room B2/3, San Jose Convention Center			**IAAI Deployed Applications** **Tenth Anniversary of the Plastics Color Formulation Tool** *William Cheetham* **Making Better Recommendations with Online Profiling Agents** *Danny Oh and Chew Lim Tan*	**IAAI Emerging Applications** **VModel: A Visual Qualitative Modeling Environment for Middle-School Students** *Kenneth D. Forbus, Karen Carney, Bruce L. Sherin, and Leo C. Ureel II* **Branching Storylines in Virtual Reality Environments for Leadership Development** *Andrew Gordon, Michael van Lent, Martin van Velsen, Paul Carpenter, and Arnav Jhala*

Tuesday, July 27

12:40 – 2:00 Lunch Break

2:00 – 3:00 PM

Invited Talk

Strength of Character: AI Personalities in Video Games
Ian Lane Davis, Mad Doc Software

CSP Consistency

The Practice of Approximated Consistency for Knapsack Constraints
Meinolf Sellmann

Domain Transmutation in Constraint Satisfaction Problems
James Bowen and Chavalit Likitvivatanavong

Machine Learning

Bayesian Network Classifiers Versus *k*-NN Classifier Using Sequential Feature Selection
Franz Pernkopf

Fibring Neural Networks
Artur S. d'Avila Garcez and Dov M. Gabbay

Combinatorial Auctions

Methods for Boosting Revenue in Combinatorial Auctions
Anton Likhodedov and Tuomas Sandholm

Combinatorial Auctions with Structured Item Graphs
Vincent Conitzer, Jonathan Derryberry, and Tuomas Sandholm

Robot Navigation

Analogical Path Planning
Saul Simhon and Gregory Dudek

A Multi-Resolution Pyramid for Outdoor Robot Terrain Perception
Michael Montemerlo and Sebastian Thrun

IAAI Emerging Applications

AI Characters and Directors for Interactive Computer Games
Brian Magerko, John E. Laird, Mazin Assanie, Alex Kerfoot, and Devvan Stokes

Towards Autonomic Computing: Adaptive Job Routing and Scheduling
Shimon Whiteson and Peter Stone

3:10 – 4:10 PM

Invited Talk

Human Dynamics
Alex (Sandy) Pentland, MIT Media Laboratory

Overconstrained Problems

Leap Before You Look: An Effective Strategy in an Oversubscribed Scheduling Problem
Laura Barbulescu, L. Darrell Whitley, and Adele E. Howe

QuickXplain: Preferred Explanations and Relaxations for Over-Constrained Problems
Ulrich Junker

Learning

Error Detection and Impact-Sensitive Instance Ranking in Noisy Datasets
Xingquan Zhu, Xindong Wu, and Ying Yang

On the Optimality of Probability Estimation by Random Decision Trees
Wei Fan

POMDP's

Stochastic Local Search for POMDP Controllers
Darius Braziunas and Craig Boutilier

Dynamic Programming for Partially Observable Stochastic Games
Eric A. Hansen, Daniel S. Bernstein, and Shlomo Zilberstein

Resolution/Agents

Implementing a Generalized Version of Resolution
Heidi E. Dixon, Matthew L. Ginsberg, David K. Hofer, Eugene M. Luks, and Andrew J. Parkes

Useful Roles of Emotions in Artificial Agents: A Case Study from Artificial Life
Matthias Scheutz

IAAI Emerging Applications

Identifying Terrorist Activity with AI Plan Recognition Technology
Peter A. Jarvis, Teresa F. Lunt, and Karen L. Myers

Agent-based Simulation of Geo-Political Conflict
Glenn Taylor, Richard Frederiksen, Russell R. Vane III, and Edward Waltz

Tuesday, July 27

4:10 – 4:30 Coffee Break

Student Posters

4:30 – 5:30 PM

CSP Tractability

Tractable Tree Convex Constraint Networks
Yuanlin Zhang and Eugene C. Freuder

Callapsibility and Consistency in Quantified Constraint Satisfaction
Hubie Chen

Search

Temperature Discovery Search
Martin Müller, Markus Enzenberger, and Jonathan Schaeffer

Best-First Frontier Search with Delayed Duplicate Detection
Richard E. Korf

Perception: Sketch Understanding

Perceptually Based Learning of Shape Descriptions for Sketch Recognition
Olya Veselova and Randall Davis

Automatically Translating Symbolic Shape Descriptions for Use in Sketch Recognition
Tracy Hammond and Randall Davis

Partially Observable Planning

Regression with Respect to Sensing Actions and Partial States
Le-Chi Tuan, Chitta Baral, Xin Zhang, and Tran Cao Son

Distance Estimates for Planning in the Discrete Belief Space
Jussi Rintanen

IAAI Emerging Applications

A Robotic Wayfinding System for the Visually Impaired
Vladimir Kulyukin, Chaitanya Gharpure, Pradnya Sute, Nathan De Graw, and John Nicholson

The Independent LifeStyle Assistant™ (I.L.S.A.): AI Lessons Learned
Karen Zita Haigh, Liana M. Kiff, Janet Myers, Valerie Guralnik, Christopher W. Geib, John Phelps, and Tom Wagner

7:30 – 10:00 PM Fellows Dinner, Fairmont Hotel

7/28	8:45 – 10:00 AM		10:30 – 11:30 AM	11:40 AM – 12:40 PM
San Jose Ballroom, Marriottt	**CRA Outstanding Undergraduate Awards** *Presented by Tim Finin, AAAI CRA Liaison* 9:00 – 10:00 AM **Joint AAAI-04 / IAAI-04 Robert S. Engelmore Memorial Lecture** **The Power of "Clear and Demonstrative Knowledge": In Honor of a "True Son of Science"** *Edward Feigenbaum, Stanford University*		**Invited Talk** **If Not the Turing Test, then What?** *Paul Cohen, University of Massachusetts Amherst and USC Information Sciences Institute*	
Meeting Room A1, San Jose Convention Center	**Negotiation/Argumentation** **Negotiation as Mutual Belief Revision** *Dongmo Zhang, Norman Foo, Thomas Meyer, and Rex Kwok* **Making Argumentation More Believable** *Anthony Hunter*	Coffee Break	**Answer Set Programming** **Logic Programs with Abstract Constraint Atoms** *Victor W. Marek and Miroslaw Truszczynski* **On Odd and Even Cycles in Normal Logic Programs** *Fangzhen Lin and Xishun Zhao*	**Answer Set Programming II** **Adding Time and Intervals to Procedural and Hierarchical Control Specifications** *Tran Cao Son, Chitta Baral, and Le-Chi Tuan* **SAT-Based Answer Set Programming** *Enrico Giunchiglia, Yuliya Lierler, and Marco Maratea*
Meeting Room A2, San Jose Convention Center	**Syntax and Semantics** **On the Relationship between Lexical Semantics and Syntax for the Inference of Context-Free Grammars** *Tim Oates, Tom Armstrong, Justin Harris, and Mark Nejman* **Distributed Representation of Syntactic Structure by Tensor Product Representation and Non-linear Compression** *Heidi H. T. Yeung and Peter W. M. Tsang*	10:00 – 10:30	**NLP / Collaborative Filtering** **Identification and Tracing of Ambiguous Names: Discriminative and Generative Approaches** *Xin Li, Paul Morie, and Dan Roth* **Exploring More Realistic Evaluation Measures for Collaborative Filtering** *Giuseppe Carenini and Rita Sharma*	**Knowledge Acquisition** **Interpreting Loosely Encoded Questions** *James Fan and Bruce Porter* **Common Sense Data Acquisition for Indoor Mobile Robots** *Rakesh Gupta and Mykel J. Kochenderfer*
Meeting Room A7, San Jose Convention Center	**Planning** **Transport Logistics Planning with Service-Level Constraints** *Hoong Chuin Lau, Kien Ming Ng, and Xiaotao Wu* **Effective Approaches for Partial Satisfaction (Over-Subscription) Planning** *Menkes van den Briel, Romeo Sanchez, Minh B. Do, and Subbarao Kambhampati*	Wednesday, July 28	**Temporal Reasoning** **A Polynomial-Time Algorithm for Simple Temporal Problems with Piecewise Constant Domain Preference Functions** *T. K. Satish Kumar* **Model Checking Temporal Logics of Knowledge in Distributed Systems** *Kaile Su*	**Learning Preferences** **Eliciting Bid Taker Non-price Preferences in (Combinatorial) Auctions** *Craig Boutilier, Tuomas Sandholm, and Rob Shields* **Learning Social Preferences in Games** *Ya'akov Gal, Avi Pfeffer, Francesca Marzo, and Barbara J. Grosz*
Meeting Room A8, San Jose Convention Center	**Search** **Simple Search Methods for Finding a Nash Equilibrium** *Ryan Porter, Eugene Nudelman, and Yoav Shoham* **Towards Efficient Sampling: Exploiting Random Walk Strategies** *Wei Wei, Jordan Erenrich, and Bart Selman*		**Search** **A General Solution to the Graph History Interaction Problem** *Akihiro Kishimoto and Martin Müller* **Structured Duplicate Detection in External-Memory Graph Search** *Rong Zhou and Eric A. Hansen*	**Qualitative Modeling** **A Qualitative-Quantitative Methods-Based e-Learning Support System in Economic Education** *Tokuro Matsuo, Takayuki Ito, and Toramatsu Shintani* **Spatial Aggregation for Qualitative Assessment of Scientific Computations** *Chris Bailey-Kellogg and Naren Ramakrishnan*
Meeting Room B2/3, San Jose Convention Center			**IAAI Deployed Applications** **The General Motors Variation-Reduction Adviser: Deployment Issues for an AI Application** *Alexander P. Morgan, John A. Cafeo, Kurt Godden, Ronald M. Lesperance, Andrea M. Simon, Deborah L. McGuinness, and James L. Benedict* **Ergonomics Analysis for Vehicle Assembly Using Artificial Intelligence** *Nestor Rychtyckyj*	**IAAI Emerging Applications** **An Explainable Artificial Intelligence System for Small-unit Tactical Behavior** *Michael van Lent, William Fisher, and Michael Mancuso* **The KOJAK Group Finder: Connecting the Dots via Integrated Knowledge-Based and Statistical Reasoning** *Jafar Adibi, Hans Chalupsky, Eric Melz, and Andre Valente*

Wednesday, July 28 12:40 – 2:00 Lunch Break

2:00 – 3:00 PM

Invited Talk

AI and Biomedicine: Helping Scientists Reason about Genomes, Drugs, Diseases
Russ B. Altman, Stanford University Medical Center

Nonmonotonic Reasoning

Outstanding Paper, Honorable Mention:
Loop Formulas for Circumscription
Joohyung Lee and Fangzhen Lin

Conservative Belief Revision
James P. Delgrande, Abhaya C. Nayak, and Maurice Pagnucco

Plan Recognition

Assessing the Complexity of Plan Recognition
Christopher W. Geib

High-Level Goal Recognition in a Wireless LAN
Jie Yin, Xiaoyong Chai, and Qiang Yang

MDPs

Solving Concurrent Markov Decision Processes
Mausam and Daniel S. Weld

Reinforcement Learning for CPG-Driven Biped Robot
Takeshi Mori, Yutaka Nakamura, Masa-aki Sato, and Shin Ishii

Deliberation and Control of Reasoning

Low-Knowledge Algorithm Control
Tom Carchrae and J. Christopher Beck

Using Performance Profile Trees to Improve Deliberation Control
Kate Larson and Tuomas Sandholm

IAAI Session

Robotics Panel
(2:00 – 4:10 PM)

3:10 – 4:10 PM

Invited Talk

Intelligent Technology for Adaptive Aging
Martha E. Pollack, University of Michigan

SAT and CSP

Complete Local Search for Propositional Satisfiability
Hai Fang and Wheeler Ruml

Modeling Choices in Quasigroup Completion: SAT vs. CSP
Carlos Ansótegui, Alvaro del Val, Iván Dotú, Cèsar Fernández, and Felip Manyà

Ensembles

An Ensemble Technique for Stable Learners with Performance Bounds
Ian Davidson

Online Parallel Boosting
Jesse A. Reichler, Harlan D. Harris, and Michael A. Savchenko

MDPs

Solving Generalized Semi-Markov Decision Processes Using Continuous Phase-Type Distributions
Håkan L. S. Younes and Reid G. Simmons

An Instance-based State Representation for Network Repair
Michael L. Littman, Nishkam Ravi, Eitan Fenson, and Rich Howard

Multi-Robot Task Allocation

Affective Recruitment of Distributed Heterogeneous Agents
Aaron Gage and Robin R. Murphy

Task Allocation via Self-Organizing Swarm Coalitions in Distributed Mobile Sensor Network
Kian Hsiang Low, Wee Kheng Leow, and Marcelo H. Ang, Jr.

IAAI Session

Robotics Panel
(2:00 – 4:10 PM)

Wednesday, July 28 4:10 – 4:30 Coffee Break

4:30 – 5:30 PM

Invited Talk

Building a Life Science Company around Statistical Machine Learning
Astro Teller, BodyMedia, Inc.

Hardness and Complexity

The Backdoor Key: A Path to Understanding Problem Hardness
Yongshao Ruan, Henry Kautz, and Eric Horvitz

The Complexity of Global Constraints
Christian Bessiere, Emmanuel Hebrard, Brahim Hnich, and Toby Walsh

Learning: Graphical Models

Bayesian Inference on Principal Component Analysis using Reversible Jump Markov Chain Monte Carlo
Zhihua Zhang, Kap Luk Chan, James T. Kwok, and Dit-Yan Yeung

Hierarchical Hidden Markov Models with General State Hierarchy
Hung H. Bui, Dinh Q. Phung, and Svetha Venkatesh

Perceptual Map Making

Large-Scale Map-Making
Kurt Konolige

Self-Organizing Visual Maps
Robert Sim and Gregory Dudek

IAAI Emerging Applications

A Comparison of Techniques for Scheduling Earth Observing Satellites
Al Globus, James Crawford, Jason Lohn, and Anna Pryor

SOFIA's Choice: An AI Approach to Scheduling Airborne Astronomy Observations
Jeremy Frank, Michael A. K. Gross, and Elif Kürklü

7/29	9:00 – 10:00 AM		10:30 – 11:30 AM	11:40 AM – 12:40 PM
San Jose Ballroom, Marriottt	**Invited Talk** **Applications of Artificial Intelligence to Web Search** *Peter Norvig, Google*			
Meeting Room A1, San Jose Convention Center	**Text Classification** **Text Classification by Labeling Words** *Bing Liu, Xiaoli Li, Wee Sun Lee, and Philip S. Yu* **Learning Indexing Patterns from One Language for the Benefit of Others** *Udo Hahn, Kornél Markó, and Stefan Schulz*	Coffee Break	**SAT** **Additive versus Multiplicative Clause Weighting for SAT** *John Thornton, Duc Nghia Pham, Stuart Bain, and Valnir Ferreira Jr.* **Hiding Satisfying Assignments: Two Are Better than One** *Dimitris Achlioptas, Haixia Jia, and Cristopher Moore*	**Max – SAT** **MAX-2-SAT: How Good Is Tabu Search in the Worst-Case?** *Monaldo Mastrolilli and Luca Maria Gambardella* **Study of Lower Bound Functions for MAX-2-SAT** *Haiou Shen and Hantao Zhang*
Meeting Room A2, San Jose Convention Center	**Scheduling** **Regrets Only! Online Stochastic Optimization under Time Constraints** *Russell Bent and Pascal Van Hentenryck* **An Effective Algorithm for Project Scheduling with Arbitrary Temporal Constraints** *Tristan B. Smith and John M. Pyle*	10:00 – 10:30	**Multiagent Systems** **Performance Bounded Reinforcement Learning in Strategic Interactions** *Bikramjit Banerjee and Jing Peng* **Visibility-Based Pursuit-Evasion with Limited Field of View** *Brian P. Gerkey, Sebastian Thrun, and Geoff Gordon*	**Planning in Nondeterministic Domains** **Forward-Chaining Planning in Nondeterministic Domains** *Ugur Kuter and Dana Nau* **Generating Safe Assumption-Based Plans for Partially Observable, Nondeterministic Domains** *Alexandre Albore and Piergiorgio Bertoli*
Meeting Room A7, San Jose Convention Center	**Recognition and Reconstruction** **Reconstruction of 3D Models from Intensity Images and Partial Depth** *Luz A. Torres-Méndez and Gregory Dudek* **Rapid Object Recognition from Discriminative Regions of Interest** *Gerald Fritz, Christin Seifert, Lucas Paletta, and Horst Bischof*	Thursday, July 29	**Cognitive Modeling** **On the Integration of Grounding Language and Learning Objects** *Chen Yu and Dana Ballard* **Comparing Cognitive and Computational Models of Narrative Structure** *David B. Christian and R. Michael Young*	
Meeting Room A8, San Jose Convention Center	**Probabilistic Reasoning/Inference** **PROBCONS: Probabilistic Consistency-Based Multiple Alignment of Amino Acid Sequences** *Chuong B. Do, Michael Brudno, and Serafim Batzoglou* **Complexity of Contextual Reasoning** *Floris Roelofsen and Luciano Serafini*		**Commonsense Reasoning** **Scaling Up Reasoning about Actions Using Relational Database Technology** *Giuseppe De Giacomo and Toni Mancini* **Encoding Probabilistic Causal Model in Probabilistic Action Language** *Nam Tran and Chitta Baral*	**Argumentation and Negotiation** **Towards Higher Impact Argumentation** *Anthony Hunter* **Logical Foundations of Negotiation: Outcome, Concession, and Adaptation** *Thomas Meyer, Norman Foo, Rex Kwok, and Dongmo Zhang*
Meeting Room B2/3, San Jose Convention Center	**IAAI Emerging Applications** **Synthetic Adversaries for Urban Combat Training** *Robert E. Wray, John E. Laird, Andrew Nuxoll, Devvan Stokes, and Alex Kerfoot* **Artemis: Integrating Scientific Data on the Grid** *Rattapoom Tuchinda, Snehal Thakkar, Yolanda Gil, and Ewa Deelman*		**IAAI Panel: The Broader Role of Artificial Intelligence in Large-Scale Scientific Research** *(10:30 AM – 12:40 PM)* *Panel Organizer: Yolanda Gil, USC Information Sciences Institute* *Panelists: David De Roure, University of Southampton, Steven Meacham, National Science Foundation, and Joel Saltz, Ohio State University*	**IAAI Panel: The Broader Role of Artificial Intelligence in Large-Scale Scientific Research** *(10:30 AM – 12:40 PM)* *Panel Organizer: Yolanda Gil, USC Information Sciences Institute* *Panelists: David De Roure, University of Southampton, Steven Meacham, National Science Foundation, and Joel Saltz, Ohio State University*

Thursday, July 29

Lunch Break 12:40 – 2:00

Coffee Break 4:10 – 4:30

2:00 – 3:00 PM

Learning Behaviors

Learning and Applying Competitive Strategies
Esther Lock and Susan L. Epstein

Outstanding Paper Award:
Learning and Inferring Transportation Routines
Lin Liao, Dieter Fox, and Henry Kautz

Mechanism Design

Searching for Stable Mechanisms: Automated Design for Imperfect Players
Andrew J. Blumberg and Abhi Shelat

GROWRANGE: Anytime VCG-Based Mechanisms
David C. Parkes and Grant Schoenebeck

Search

Space-Efficient Memory-Based Heuristics
Rong Zhou and Eric A. Hansen

Compressing Pattern Databases
Ariel Felner, Ram Meshulam, Robert C. Holte, and Richard E. Korf

Emerging Applications

Machine Learning for Adaptive Image Interpretation
Ilya Levner and Vadim Bulitko

CaBMA: Case-Based Project Management Assistant
Ke Xu and Héctor Muñoz-Avila

3:10 – 4:10 PM

Economic Models

Computing Shapley Values, Manipulating Value Division Schemes, and Checking Core Membership in Multi-Issue Domains
Vincent Conitzer and Tuomas Sandholm

Using Contracts to Influence the Outcome of a Game
Robert McGrew and Yoav Shoham

Planning/Temporal Reasoning

Shortest Path Discovery Problems: A Framework, Algorithms and Experimental Results
Csaba Szepesvári

Identifying Linear Causal Effects
Jin Tian

Event Recognition

CASE*E*: A Hierarchical Event Representation for the Analysis of Videos
Asaad Hakeem, Yaser Sheikh, and Mubarak Shah

Repeated Observation Models
Avi Pfeffer

IAAI Emerging Applications

An Application View of COORDINATORS: Coordination Managers for First Responders
Thomas Wagner, John Phelps, Valerie Guralnik, and Ryan VanRiper

The U.S. National Football League Scheduling Problem
Bistra N. Dilkina and William S. Havens

4:30 – 5:30 PM

IAAI Emerging Applications

Automatic Generation of Artistic Chinese Calligraphy
Songhua Xu, Francis C.M. Lau, Kwok-Wai Cheung, and Yunhe Pan

Detecting and Eliminating the Cascade Vulnerability Problem from Multilevel Security Networks using Soft Constraints
Stefano Bistarelli, Simon N. Foley, and Barry O'Sullivan

Exhibit Program

The exhibition will be held in Exhibit Hall 1 on the exhibit level of the San Jose McEnery Convention Center, Tuesday, July 27 and Wednesday, July 28. Admittance is restricted to badged conference attendees. Further information regarding access to the Exhibition can be obtained from the Exhibitor Registration Desk.

Exhibit Hours

Tuesday, July 27: 10:00 AM – 6:00 PM
Wednesday, July 28: 10:00 AM – 6:00 PM

Exhibitors

- AAAI Press
- Acroname Inc.
- ActivMedia Robotics
- Franz Inc.
- Google
- The Intelligent Information Systems Institute at Cornell University
- The MIT Press
- Morgan Kaufmann Publishers, an imprint of Elsevier
- NASA Ames Research Center
- Springer-Verlag New York, LLC.

AAAI Press

445 Burgess Drive
Menlo Park, CA 94025-3442
Tel: 650-328-3123
Fax: 650-321-4457
Email: info@aaai.org
Online Catalog:
www.aaai.org/Publications/Catalog/

Booth #110

Acroname Inc.

4894 Sterling Driove
Boulder, CO 80301
Tel: 720-564-0373

Acroname has spent over a decade helping nearly 20,000 customers worldwide in robotics sensing, control, and information. This experience has been incorporated into many of Acroname's in-house products, such as the BrainStem line of intelligent controllers and motion control solutions as well as the Garcia robot. Stop by the Acroname exhibit to see demonstrations of Garcia robots, discuss your robotics needs, and pick up materials outlining the hundreds of robotics solutions offered by Acroname. Acroname can help you accelerate your research with open, inexpensive, proven, and flexible robot platforms.

Booth #107

ActivMedia Robotics

19 Columbia Drive
Amherst, NH 03031
603-881-7960

ActivMedia Robots provide autonomous mobile platforms on a variety of scales. Our highly useable ActivMedia Robotics Interface for Applications (ARIA) development API is open-sourced under the GNU license for use with C++. Our Laser Mapping and Navigation software enables our robots to know exactly where they are, and how to get to their destination. Powerful software, reliable, extensible ActivMedia Robotics bases and our integrated accessories are what make ActivMedia Robotics platforms the most-used in robotics R&D today. Come see a demonstration of our new PatrolBot in action!

Booth #108

Franz Inc.

555 12th Street, Suite 1450
Oakland, CA 94607
Tel: 510-452-2000
Fax: 510-452-0182

Franz Inc. is the leading vendor of Common Lisp (CL) and Common Lisp Object System (CLOS) development environment — Allegro CL. True to its roots in AI, Franz has released a fast SAX-based XML parser and a CLOS-based Prolog compiler for accessing and reasoning over complex data. Franz also provides a SOAP and WSDL web service API for Lisp applications to access external information and knowledge easily over the web. Along with high-performance direct interfaces to Oracle and MySQL, Allegro CL makes commercial deployment of AI and expert systems easy and practical. Stop by for an entertaining demonstration of software robot—Pandorabots.

Booth #111

Google

1600 Ampitheater Parkway
Mountain View, CA 94043

Google's innovative search technologies connect millions of people around the world with information every day. Founded in 1998 by Stanford Ph.D. students Larry Page and Sergey Brin, Google today is a top web property in all major global markets. Google's targeted advertising program, which is the largest and fastest growing in the industry, provides businesses of all sizes with measurable results, while enhancing the overall web experience for users. Google is headquartered in Silicon Valley with offices throughout North America,

Europe, and Asia. For more information on joining the engineering team, visit www.google.com/jobs/eng.html.

Booth #109

The Intelligent Information Systems Institute, Cornell University

4130 Upson Hall
Ithaca, NY 14853
607-255-4188

The mandate of the Intelligent Information Systems Institute is threefold: to perform and stimulate research in compute- and data-intensive methods for intelligent decision making systems; to foster collaborations between Cornell researchers, the Institute's sponsors, and the scientific community; and to play a leadership role in the research and dissemination of the core areas of the Institute. The Institute promotes research collaborations with our sponsors and the research community at large. Activities supported by the Institute include research collaborations and projects, visiting scientists, working groups, conferences and workshops, special programs on specific topics and challenge problems, technical reports, and other publications.

Booth #101

The MIT Press

5 Cambridge Center
Cambridge, MA 02142
Tel: 617-258-5764
Fax: 617-253-1709

The MIT Press publishes books and journals in artificial intelligence, robotics and related computer sciences. Please visit our booth to receive a 20% discount on our newest and classic titles including: Baum / *What Is Thought?,* Dorigo / *Ant Colony Optimization* and Siegwart / I*ntroduction to Autonomous Mobile Robots.* Please visit the MIT Press website at http://mitpress.mit.edu

Booth #105

Morgan Kaufmann

An imprint of Elsevier
360 Park Avenue South
New York, NY 10010
Tel: 212-633-3733
Fax: 212-633-3112

Morgan Kaufmann, an imprint of Elsevier, began publishing its prestigious list of AI publications 20 years ago this year. New titles this year include three major text references: Brachman & Levesque: *Knowledge Representation and Reasoning;* Hoos & Stützle: *Stochastic Local Search Foundations and Applications;* and Ghallab, Nau & Traverso: *Automated Planning: Theory and Practice*

Booth #112

NASA Ames Research Center

NASA Computational Sciences Division
Mail Stop 269-1
Moffett Field CA 94035
650-604-5000

The Computational Sciences Division at NASA's Ames Research Center performs mission-driven research in computer science and information technology. Areas of focus include autonomous systems and robotics; intelligent system health management; dependable software systems; and collaborative and assistant systems. Please visit the division's web site at http://compsci.arc.nasa.gov for the latest information on the wide range of research projects currently underway.

Booth #106

Springer-Verlag New York, LLC.

333 Meadowlands Parkway
Secaucus, NJ 07094
1-800-777-4643

Intelligent Systems Demonstrations

The Intelligent Systems Demonstrations will be held in Exhibit Hall 1 of the San Jose McEnery Convention Center and will be open to registered conference attendees during exhibit hours. Continuing advances in AI research are making it possible to develop intelligent systems in a wide range of application areas. The AAAI-04 Intelligent Systems Demonstrations program showcases state-of-the-art AI implementations and provides AI researchers with an opportunity to show applications of their research in action. The program is intended to highlight innovative contributions to the science of AI with an emphasis on the benefits to be gained from developing and using implemented systems in AI research. System builders will be on hand to present their work, and audience interaction with the systems is encouraged as much as possible. Demonstrations are scheduled throughout the AAAI Exhibition.

Table #204

Agent-Based Modeling with Social Networks for Terrorist Recruitment

Teresa Ko and Nina Berry, *Sandia National Labs*

Seldon combines concepts from agent-based modeling and social network analysis to create a computation model of social dynamics for terrorist recruitment. The underlying recruitment model is based on a unique hybrid agent-based architecture that contains simple agents (individuals) and abstract agents (conceptual entities) where the interactions of the agents are defined through the multiple social networks that form and dissipate according to an individual's actions.

Table #218

The Autonomous Sciencecraft Experiment Onboard the EO-1 Spacecraft

Daniel Tran, Steve Chien, Rob Sherwood, Rebecca Castano, Benjamin Cichy, Ashley Davies, and Gregg Rabideau, *Jet Propulsion Laboratory, California Institute of Technology*

The Autonomous Sciencecraft Experiment (ASE), currently flying onboard the *Earth Observing-1* (EO-1) spacecraft, integrates several autonomy software technologies enabling autonomous science analysis and mission planning. The demonstration will consist of two sections: a real-time display of an ASE-commanded ground contact from EO-1, and a simulation of the full ASE science-response scenario.

Table #220

CAMEO: Modeling Human Activity in Formal Meeting Situations

Paul E. Rybski and Brett Browning, *Carnegie Mellon University*

CAMEO is an omnidirectional camera system designed to explore the research issues involved in understanding the activities and interactions of people in meeting settings. CAMEO monitors the positions of people in a meeting, acknowledges specific people it has been trained to recognize, and attempts to classify their activities.

Table #209

Centibots: Very Large Scale Distributed Robotic Teams

Charlie Ortiz, Kurt Konolige, Regis Vincent, Benoit Morisset, Andrew Agno, Michael Eriksen, *SRI International;* Dieter Fox, Benson Limketkai, Jonathon Ko, Benjamin Steward, Dirk Schulz, *University of Washington*

We will demonstrate Centibots, our distributed robotic team, in a coordinated deployment to explore and map an unknown area, to exhaustively search the area for an object of interest, and to guard the found object.

Table #208

CMRadar: A Personal Assistant Agent for Calendar Management

Pragnesh Jay Modi, Manuela Veloso, Stephen F. Smith, Jean Oh, *Carnegie Mellon University*

Software agents that automate tasks such as calendar management promise to increase human productivity. CMRadar is a calendar management system in which distributed agents, each serving a different user, can negotiate to effectively schedule meetings. Our demo consists of a graphical depiction of the distributed negotiation algorithm that underlies CMRadar.

Table #203

Domain-Independent Reason-Enhanced Controller for Task-Oriented Systems – DIRECTOR

Darsana P. Josyula, Michael L. Anderson and Don Perlis, *University of Maryland*

An agent may control different devices by translating user requests to device instructions, tracking the effect of the instructions and detecting any perturbations. We discuss the architecture for such a perturbation-tolerant agent that can interface users with different devices. The agent has been implemented by modeling its beliefs, desires, intentions, expectations and achievements.

Table #205

Engineering Open Multi-Agent Systems as Electronic Institutions

M. Esteva, D. de la Cruz, B. Rosell, J. Ll. Arcos, J. A., Rodríguez-Aguilar, and G. Cuní, *Artificial Intelligence Research Institute (IIIA), Spain*

Intelligent Systems Demonstrations Schedule

Tuesday, July 27

10:00 AM

Online Semantic Extraction by Backpropagation Neural Network with Various Syntactic Structure Representations. Table #214

Intelligent Agents for Coalition Search and Rescue Task Support Table #217

11:00 AM

Centibots: Very Large Scale Distributed Robotic Teams Table #209

12:00 PM

iBundler: An Agent-Based Decision Support Service for Combinatorial Negotiations Table #216

SenseClusters—Finding Clusters that Represent Word Senses Table #212

Engineering Open Multi-Agent Systems as Electronic Institutions Table #205

1:00 PM

Agent-Based Modeling with Social Networks for Terrorist Recruitment Table #204

Multi-Agent System Development: Design, Runtime, and Analysis Table # 206

CAMEO: Modeling Human Activity in Formal Meeting Situations Table #220

2:00 PM

CMRadar: A Personal Assistant Agent for Calendar Management Table #208

Domain-Independent Reason-Enhanced Controller for Task-ORiented systems – DIRECTOR Table #203

The Autonomous Sciencecraft Experiment Onboard the EO-1 Spacecraft Table #218

3:00 PM

Mobile Emergency Triage Support System Table #202

Visual Odometry Using Commodity Optical Flow Table #213

A Robotic Model of Human Reference Resolution Table #201

4:00 PM

PRECISE on ATIS: Semantic Tractability and Experimental Results Table #219

SCoT: A Spoken Conversational Tutor Table #207

SEM-Ether: Semantic Web Based Pervasive Computing Framework – Integrating Web, Devices and People Table #215

5:00 PM

Responsive Information Architect: A Context-Sensitive Multimedia Conversation Framework for Information Seeking Table #221

The Secure Wireless Agent Testbed (SWAT) Table #210

WordNet::Similarity—Measuring the Relatedness of Concepts Table #211

Wednesday, July 28

10:00 AM

Responsive Information Architect: A Context-Sensitive Multimedia Conversation Framework for Information Seeking Table #221

The Secure Wireless Agent Testbed (SWAT) Table #210

11:00 AM

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1:00 PM

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Agent-Based Modeling with Social Networks for Terrorist Recruitment Table #204

2:00 PM

CMRadar: A Personal Assistant Agent for Calendar Management Table #208

Domain-Independent Reason-Enhanced Controller for Task-ORiented systems—DIRECTOR Table #203

The Autonomous Sciencecraft Experiment Onboard the EO-1 Spacecraft Table # 218

3:00 PM

iBundler: An Agent-Based Decision Support Service for Combinatorial Negotiations Table #216

Multi-Agent System Development: Design, Runtime, and Analysis Table #206

CAMEO: Modeling Human Activity in Formal Meeting Situations Table #220

4:00 PM

Centibots: Very Large Scale Distributed Robotic Teams Table #209

SenseClusters—Finding Clusters that Represent Word Senses Table #212

Engineering Open Multi-Agent Systems as Electronic Institutions Table #205

5:00 PM

Online Semantic Extraction by Backpropagation Neural Network with Various Syntactic Structure Representations Table #214

Intelligent Agents for Coalition Search and Rescue Task Support Table #217

We focus on the engineering of open multiagent systems as electronic institutions. Electronic institutions are a formalism to define the rules that structure agent interactions, establishing what agents are permitted and forbidden to do. We present a set of tools that support the specification, analysis and execution of institutions, as well as the implementation of agents. Our methodology allows for a successive refinement approach to multiagent systems engineering.

Table #216

iBundler: An Agent-Based Decision Support Service for Combinatorial Negotiations

Andrea Giovannucci and Juan Antonio Rodríguez-Aguilar, *IIIA-CSIC Campus UAB, Bellaterra, Spain;* Jesús Cerquides, *Universitat de Barcelona;* A. Reyes and F. X. Noria, *Intelligent Software Components, S.A.*

We will demonstrate the use of iBundler, an agent-aware decision support service acting as a combinatorial negotiation solver (solving the winner determination problem) for both multi-item, multi-unit negotiations and auctions. The demonstration GUI will show a negotiation involving three providing agents and one buyer agent. The main goal for the buyer agent will be to buy the necessary parts to manufacture 200 cars.

Table #217

Intelligent Agents for Coalition Search and Rescue Task Support

Austin Tate, Jeff Dalton, Clauirton de Siebra, and Stuart Aitken, *AIAI, University of Edinburgh, UK;* Jeffrey M. Bradshaw and Andrzej Uszok, *IHMC, Pensacola, FL*

The Coalition Search and Rescue Task Support (CoSAR-TS) demonstration showcases intelligent agents and artificial intelligence planning and plan execution systems working over a computational grid in which different policies govern who can do what. The agents use semantic web services to dynamically discover medical information and to find local rescue resources.

Table #202

Mobile Emergency Triage Support System

Wojtek Michalowski, *University of Ottawa;* Roman Slowinski and Szymon Wilk, *Poznan University of Technology, Poland*

The Mobile Emergency Triage (MET) system is a clinical decision support system for emergency triage of different types of acute pain presentations. It uses clinical knowledge in form of decision rules acquired from data. MET interacts with a hospital information system, runs on handheld computers and operates in weak-connectivity conditions. The system facilitates structured data collection, thus it can be used as an electronic patient's chart, and it supports triage directly at the point of care.

Table #206

Multi-Agent System Development: Design, Runtime, and Analysis

K. S. Barber, J. Ahn, K. Fullam, T. Graser, N. Gujral, D. C. Han, D. N. Lam, R. McKay, J. Park, and M. Vanzin, *The University of Texas at Austin*

This demonstration addresses the entire development process for multiagent systems; illustrating tools for the initial design of the agent system, the capabilities encoded in the individual agents (including novel work in belief revision, agent organizations, and action selection), and analysis tools that enhance developer comprehension of the behavior of the system.

Table #214

Online Semantic Extraction by Backpropagation Neural Network with Various Syntactic Structure Representations

Heidi H. T. Yeung, *City University of Hong Kong*

The goal of this research project is to develop a hybrid architecture that can extract semantic information from English sentences. This is an online intelligent system built on top of high automation and interaction with Java Server Page (JSP) and Macromedia Flash MX. By training a robust 3-layer back propagation neural network with numerical syntactic structure representation, the expected thematic frame roles are classified faithfully.

Table #219

PRECISE on ATIS: Semantic Tractability and Experimental Results

Ana-Maria Popescu, Alex Armanasu, Oren Etzioni, David Ko, Alexander Yates, *University of Washington*

The Precise system is a natural language interface to databases that uses a set of database-independent semantic constraints and a modern statistical parser to help answer user queries. Our AAAI demonstration shows Precise in action on the ATIS travel domain, where it outperforms many domain-dependent systems.

Table #221

Responsive Information Architect: A Context-Sensitive Multimedia Conversation Framework for Information Seeking

Michelle Zhou, Keith Houck, Rosario Uceda-Sosa, Shimei Pan, Min Chen, Vikram Aggarwal, and James Shaw, *IBM T. J. Watson Research Center*

RealHunter is an automatically generated multimedia conversation system that under-

stands imprecise natural language input and generates customized context-sensitive graphics and speech output. By guiding users navigating a large and complex information space intelligently based their preferences and underlying data, this real-estate application helps users search for residential properties efficiently.

Table #201

A Robotic Model of Human Reference Resolution

Matthias Scheutz, Virgil Andronache, and Kathleen Eberhard, *University of Notre Dame*

Evidence from psychology suggests that humans resolve reference incrementally in the presence of constraining visual context without the need for the explicit construction of parse trees. We present an embodied distributed real-time system that demonstrates various interactions of auditory, visual, and semantic processing components hypothesized to underlie human processes.

Table #207

SCoT: a Spoken Conversational Tutor

Karl Schultz, Brady Clark, Heather Pon-Barry, Elizabeth Owen Bratt, and Stanley Peters, *Stanford University*

SCoT is a Spoken Conversational Tutor implemented to investigate the advantages of natural language in tutoring. SCoT combines a generic dialogue architecture, a set of natural language tools, and a set of tutorial rules to conduct a reflective dialogue with a student about a problem they have worked on.

Table #210

The Secure Wireless Agent Testbed (SWAT)

G. Anderson, A. Burnheimer, V. Cicirello, D. Dorsey, S. Garcia, M. Kam, J. Kopena, K. Malfettone, A. Mroczkowski, G. Naik, M. Peysakhov, W.Regli, J. Shaffer, E. Sultanik, K. Tsang, L. Urbano, K. Usbeck, and J. Warren, *Drexel University*

We will demonstrate the Secure Wireless Agent Testbed (SWAT), a unique facility developed at Drexel University to study integration, networking and information assurance for next-generation wireless mobile agent systems. SWAT is an implemented system that fully integrates: (1) mobile agents, (2) wireless ad hoc multi-hop networks, and (3) security.

Table #215

SEM-Ether: Semantic Web Based Pervasive Computing Framework—Integrating Web, Devices and People

Sushil Puradkar, Sachin Singh, Chintan Patel, Kartik Vishwanath, Rahul Gupta, and Yugyung Lee, *University of Missouri – Kansas City*

SeMEther is a pervasive computing framework which harnesses the power of Semantic Web and service-oriented architecture, over which effective and intelligent pervasive environments can be built. This demo aims to show how simple pervasive services like Buddy service, Music service can be built on this framework.

Table #212

SenseClusters—Finding Clusters that Represent Word Senses

Amruta Purandare, University of Minnesota, Duluth and Ted Pedersen, *University of Minnesota, Duluth*

SenseClusters is free software that clusters units of text that are contextually similar. It supports the identification of lexical features from large corpora, the use of first and second order context representations, dimensionality reduction via SVD, and both agglomerative and partitional clustering. It also allows for the evaluation of discovered clusters.

Table #213

Visual Odometry Using Commodity Optical Flow

Jason Campbell and Rahul Sukthankar *Intel Research and CMU Robotics Institute;* Illah Nourbakhsh, *CMU Robotics Institute and NASA Ames Research Center*

We demonstrate a mobile robot visual odometry system based on open source optical-flow software and consumer grade hardware. We also illustrate the effect of various vision system design parameters on odometric performance.

Table #211

WordNet::Similarity—Measuring the Relatedness of Concepts

Ted Pedersen, *University of Minnesota, Duluth,* Siddharth Patwardhan, *University of Utah,* and Jason Michelizzi, *University of Minnesota, Duluth*

WordNet::Similarity is free software that measures the semantic similarity or relatedness between a pair of concepts. It provides nine measures, all of which are based on the lexical database WordNet. These are implemented as Perl modules which input two concepts, and return a numeric value that represents their similarity or relatedness.

Robot Competition and Exhibition

The Thirteenth Robot Competition and Exhibition will be held in Exhibit Hall 1 of the San Jose Convention Center, and will be open to registered conference attendees during exhibit hours. The Competition brings together more than 15 teams from universities, colleges, and research laboratories to compete and to demonstrate cutting edge, state of the art research in robotics and artificial intelligence.

The Robot Challenge

In short, the robot is supposed to attend the conference. A breakdown of the tasks includes: starting at the entrance to the conference center and finding the registration desk, registering for the conference, performing volunteer duties as required, interacting with conference attendees, and finally reporting at a prescribed time to a conference hall to give a talk. Some robots will be doing a portion of this challenge.

The Rescue Robot Competition

The objective of this contest is to give participants the opportunity to work in a domain of critical practical importance. Robots must enter a simulated fallen structure, find human victims, and direct human rescuers to the victims. The rules for this event provide for fully autonomous robots, teleoperated robots, and sliding autonomy. The event is being developed in close coordination with experienced rescue professionals. This event will use the joint AAAI/RoboCup Robot Rescue rules.

Open Interaction Task

In addition to the above two events, there will be a third event involving human-robot interaction. This event will take the place of the Robot Host event in past years and will probably involve interacting with conference attendees to achieve a particular task in an unstructured environment.

The Robot Exhibition

The mission of the Robot Exhibition is to demonstrate state of the art research in a less structured environment than the competition events. The exhibition gives researchers an opportunity to showcase current robotics and embodied-AI research that does not fit into the other competition events.

Workshop

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

General Cochairs:
Bill Smart, *Washington University in St. Louis*
Sheila Tejada, *University of New Orleans*

Advisor and Past Cochair:
Bruce Maxwell, *Swarthmore College*

Challenge Chair:
Ashley Stroupe, *Jet Propulsion Laboratory*

Exhibition Chair:
Magda Bugajska, *Naval Research Lab*

Open Interaction Event Chair:
Bruce A. Maxwell, *Swarthmore College*

Robot Rescue Cochairs:
Jenn Casper, *American Standard Robotics*
Adam Jacoff, *NIST*

Mobile Robot Workshop Chair:
Frederick Crabbe, *U.S. Naval Academy*

Robot Teams

Team: Academic Autonomy
Swarthmore College
Contact: Bruce Maxwell
Event: Rescue Robot Competition

Team: ALCOR/DIA
Universitá di Roma
Contact: Andrea Carbone
Event: Rescue Robot Competition

Team: B-Dog
University of New Orleans
Contact: Sheila Tejada
Event: Open Interaction Task

Team: Blue Swarm 3
Utah State University
Contact: Dan Stormont
Event: Rescue Robot Competition

Team: CMBalance
Carnegie Mellon University
Contact: Paul E. Rybski
Event: Exhibition

Team: GRACE and GEORGE
CMU, NRL, Swarthmore
Contact: Alan Schultz
Event: Open Interaction Task

Team: INEEL
INEEL
Contact: David Bruemmer
Event: Rescue Robot Competition

Team: Keystone Rescue
University of Manitoba
Contact: Jacky Baltes
Event: Rescue Robot Competition

Team: MITRE
MITRE
Contact: Dave Smith
Event: Rescue Robot Competition

Team: MU Mites
University of Missouri-Columbia
Contact: Marge Skubic
Events: Open Interaction Task & Exhibition

Team: ND
University of Notre Dame
Contact: Matthias Scheutz
Events: Open Interaction Task & Exhibition

Team: Scrambled Eggs
Institute for Educational Advancement/PARC
Contact: Mark Yim
Event: Rescue Robot Competition

Team: Stony Brook Robot Design Team
Stony Brook University
Contact: Diana David
Events: Open Interaction Task & Exhibition

Team: Team H.E.R.
Human Emulation Robotics, LLC
Contact: David Hanson
Events: Challenge & Exhibition

Team: The Scarabs
Contact: Michael Randall
Event: Rescue Robot Competition

Team: UNO Robotics Team
University of New Orleans
Contact: Sheila Tejada
Event: Rescue Robot Competition

Team: Washington University
Washington University in St. Louis
Contact: Bill Smart
Event(s): Challenge & Exhibition

National Conference on Educational Robotics

- ❒ **Botball Tournament**
- ❒ **Collegiate Botball Challenge**
- ❒ **Robotics Showcase**

Each year teachers and students from middle school, high school and college gather with robotics professionals from across the country for the annual National Conference on Educational Robotics (NCER). Hosted by KISS Institute for Practical Robotics, this year's National Conference on Educational Robotics is held in conjunction with AAAI-04. All registered AAAI-04 participants are invited to attend the National Botball Tournament, the Collegiate Botball Challenge, the Robotics Showcase and all breakout sessions for no additional cost!

A Highlight of the National Conference on Educational Robotics includes the National Botball Tournament for middle- and high-school students, as well as the Collegiate Botball Challenge. Any middle- or high-school team who competed in one of the thirteen regional Botball programs is eligible to participate in the National Botball Tournament.

In addition to the Collegiate Botball Challenge and the National Botball Tournament, the National Conference on Educational Robotics features student and teacher presentations during breakout sessions designed to cover topics from curriculum integration to technical aspects of robotics. An evening robotics showcase will highlight demos and posters. Students and teachers are also given the opportunity to hear about current robotics research conducted by nationally recognized speakers from organizations such as NASA, the Naval Research Laboratory, and various universities.

Botball is an educational outreach program designed to engage students in learning the practical applications of science, technology, engineering and math through robot building and programming. In Botball, teams of students create autonomous mobile robots to play in a non-destructive tournament. You can find out more about Botball at the Botball website: www.botball.org.

Registration

Conference registration is located on the exhibit level of the San Jose Convention Center, beginning Sunday, July 25. Registration hours are:

Sunday, July 25	7:30 AM – 6:00 PM
Monday, July 26	7:30 AM – 6:00 PM
Tuesday, July 27	8:00 AM – 5:30 PM
Wednesday, July 28	8:00 AM – 5:30 PM
Thursday, July 29	8:30 AM – 12:00 PM

Only checks drawn on U.S. banks, VISA, MasterCard, American Express, government purchase orders, traveler's checks, and U.S. currency will be accepted. We cannot accept foreign currency or checks drawn on foreign banks.

Registration Fees

The AAAI-04 / IAAI-04 technical program registration fee includes admission to the technical sessions, the Exhibition, the Student Abstract and Poster Session, the Workshop Program (by invitation only), the Opening Reception, and the AAAI-04 / IAAI-04 conference proceedings and CD. Students must present proof of full-time student status to qualify for the student rate. Onsite technical program fees are as follows:

Technical Registration Fees

Regular Member	$695	Regular Nonmember	$850
Student Member	$235	Student Nonmember	$315

AAAI Platinum Fees

(Includes one year new or renewal membership in AAAI)

Regular U.S./Canada	$790	Regular International	$830
Student U.S./Canada	$270	Student International	$310

Tutorial Forum

Includes admittance to up to four consecutive tutorials and the accompanying Tutorial Forum Notes.

Regular	$100	Student	$25

Workshop Program

Workshop registration is limited to those active participants determined by the organizer prior to the conference. All workshop participants must register for the AAAI-04 technical program.

Exhibition

Admission to the exhibition hall programs is included in the AAAI-04 / IAAI-04 technical registration fee. For individuals interested in admittance to the exhibit hall only, an exhibits only registration is available. Exhibit hall programs include vendor exhibits, the Intelligent Systems Demonstrations, the Botball Tournament, and the Robot Competition and Exhibition.

All passes are good for Tuesday and Wednesday, July 27–28

Exhibits Only Adult	$10.00
Exhibits Only Students (12-18)	$5.00
Children (under 12)	Free

(Children must be accompanied by an adult conference registrant)

General Information

Admission

Each conference attendee will receive a name badge upon registration. This badge is required for admittance to the technical, tutorial, exhibit, IAAI, and workshop programs. Workshop attendees will also be checked off a master registration list at individual rooms. Tutorial attendees must present syllabi tickets to receive syllabi volumes, and attendance tickets for admittance to the tutorial rooms. Smoking, drinking, and eating are not allowed in any of the technical, tutorial, workshop, or IAAI sessions.

Baggage Holding

There is no baggage holding area at the San Jose Convention Center. Please check your luggage with the bellman at your hotel after you have checked out. Neither AAAI, the San Jose Convention Center, the San Jose Marriott, nor San Jose State University accept liability for the loss or theft of any suitcase, briefcase, or other personal belongings brought to the site of AAAI-04 / IAAI-04.

Banking

An ATM machine is located on the Ballroom Concourse on the exhibit level of the San Jose McEnery Convention Center.

Wells Fargo
121 Park Center Plaza, San Jose CA 95113
408-998-3699

Bank of America
125 S. Market Street, San Jose CA 95113
408-983-0588

Business Centers

The following business centers are available in the area:

Visitor Information & Business Center
Main lobby, San Carlos entrance
San Jose McEnery Convention Center

San Jose Marriott Business Center
Second floor
Open 24 hours based on need

Kinko's
93 East San Carlos Street
408-295-4336

Career Information

A bulletin board for job opportunities in the artificial intelligence industry will be made available in the registration area, on the exhibit level of the San Jose Convention Center. Attendees are welcome to post job descriptions of openings at their company or institution.

Child Care Service

For information about childcare services, please contact Sitter's Unlimited at 408-452-0225. (This information is provided for your convenience and does not represent an endorsement of this agency by AAAI. Responsibility for all childcare arrangements must be assumed by the parents.)

Coffee Breaks

Coffee will be served in the meeting room foyer on the exhibit level of the San Jose McEnery Convention Center, Sunday, July 25 and Monday, July 26, at 10:30 – 11:00 AM and 3:30 – 4:00 PM. Coffee will also be served in the Willow Glen foyer of the San Jose Marriott during these times.

Coffee will be served only in the San Jose Ballroom Foyer of the San Jose Marriott on Tuesday, July 27, 10:00 AM – 10:30 AM. Coffee will be served in the meeting room foyer on the exhibit level of the San Jose Convention Center Tuesday, July 27, 4:10 – 4:30 PM, and Wednesday and Thursday, July 28 – 29, 10:00 – 10:30 AM and 4:10 – 4:30 PM.

Corner Market Kitchen, located on the first floor of the San Jose Marriott is open 6:00 AM – 10:00 PM daily. A Starbucks is also located in the San Jose McEnery Convention Center near the Almaden entrance.

Handicapped Facilities

The San Jose Convention Center and the San Jose Marriott are both equipped with handicapped facilities.

Housing

For information regarding hotel reservations, please contact hotels directly. For student housing, please contact San Jose State University at 408-924-7502.

Information/Messages/Robot Receptionist

Please visit the information/message desk in the registration area. This year, you might be assisted by either GRACE or GEORGE, the joint entries of Carnegie Mellon University, the Naval Research Lab, and Swarthmore College in the Open Interaction Task of the Robot Competition. A volunteer will also be on hand (in onsite registration) to receive and post messages. The telephone number for leaving messages only is 408-271-6000. Paging attendees is not possible.

Internet Room & Access

AAAI will provide internet access in Meeting Room B1 of the San Jose Convention Center. The internet room will be open Sunday, July 25 – Thursday, July 29 during registration hours. As a courtesy, please limit your access time to 10 minutes if others are waiting to use the service. Wireless access is also available in the exhibit hall.

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

Parking is available at the San Jose McEnery Convention Center for $10.00 per day, Monday-Friday, 6:00 AM – 7:00 PM, and $4.00 per day, Saturday and Sunday, 7:00 AM – 7:00 PM. Access to the garage is at 408 Almaden Boulevard between San Carlos Street and Balbach Street, or on Market Street between San Carlos Street and Viola Avenue. Extensive parking is available throughout downtown San Jose. For more information on parking , public transportation, and the DASH shuttle, visit www.sjdowntownparking.com.

Press

All members of the media are requested to register in the Press Room, Meeting Room B4. Press badges will only be issued to individuals with approved credentials. The Press Room will be open during the following hours.

Monday, July 26	8:00 AM – 5:00 PM
Tuesday, July 27	8:00 AM – 5:00 PM
Wednesday, July 28	8:00 AM – 5:00 PM
Thursday, July 29	8:30 AM – 12:00 PM

On Sunday, July 25, press members should register in onsite registration.

Printed Materials

Display tables for the distribution of promotional and informational materials of interest to conference attendees will be located in the registration area on the exhibit level of the San Jose Convention Center.

Proceedings / CD

Each technical registrant will receive two tickets with the registration materials for one copy of the conference proceedings and one copy of the conference CD. Tickets can be redeemed at the proceedings distribution center, located in Meeting Room D on the exhibit level of the San Jose Convention Center during registration hours. All tickets must be redeemed onsite by Thursday, July 29 at 11:00 AM. AAAI cannot mail proceedings or CDs to registrants after the conference.

Shipping

United Parcel Service
20 Post Street
408-920-0280

United States Postal Service
200 South Third Street,
San Jose, CA 95112

See also Visitor information & Business Center.

Transportation

Taxi

Rainbow Cab: 408-271-9900
Yellow Checker Cab Company: 408-293-1234

Bus

Greyhound Bus—For information on fares and scheduling, call 408-295-8276.

City Transit System

The Light Rail (VTA) runs seven days a week, 24-hours a day. Trains operate every 10-15 minutes weekdays, every 15 minutes Saturdays and Sundays, and every 30 minutes in the evening. For a complete listing of schedules, fares, and routes, please see www.vta.org.

Free Shuttles

VTA/SJC Airport Flyer
Service to San Jose International Airport, Santa Clara Caltrain station and Metro/Airport Light Rail Station. Shuttles run weekdays every 10 minutes from 5:30 AM – 7:00 PM, every 15 minutes until 10:00 PM, and every 30 minutes until midnight. Weekend service is every 15 minutes.

Downtown Area Shuttle (DASH)
Service connects Caltrain station with Light Rail line, transit mall, San Jose McEnery Convention Center and San Jose State University. Shuttle runs every 10 minutes, 6:15 AM – 7:00 PM.

Train

BART
Bay Area Rapid Transit offers service within the Bay Area. For information call 510-441-2278 or visit www.bart.gov

CalTrain
CalTrain offers service between San Jose and San Francisco. For departure schedules, map and fares, call 800-660-4287 or visit www.caltrain.org

Tutorial Forum Syllabi

Extra copies of AAAI-04 tutorial syllabi volume will be available for purchase in AAAI onsite registration in the San Jose Convention Center, beginning Tuesday, July 27. 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 Meeting Room D.

Visitor Information & Business Center

Located in the San Jose McEnery Convention Center, the Visitor Information & Business Center (VIBC) offers a full array of business services, including computer/internet access, faxing, and mailing options. In addition, visitors and delegates will find San Jose souvenirs, reservation (restaurants and lodging) assistance, calendar of events, and general information. Open daily, Monday through Friday, 8:00 AM – 5:30 PM, and Saturday and Sunday, 11:00 AM – 5:00 PM.

Volunteer Station

The volunteer station will be located in the registration area on the exhibit level of the San Jose McEnery Convention Center. All volunteers are required to sign in prior to their shift, and sign out when it ends.

Disclaimer

In offering the San Jose Marriott, San Jose McEnery Convention Center, San Jose State University, and all other service providers (hereinafter referred to as "Supplier(s)" for the National Conference on Artificial Intelligence and the Innovative Applications Conference), AAAI acts only in the capacity of agent for the Suppliers which are the providers of the service. Because AAAI has no control over the personnel, equipment or operations or providers of accommodations or other services included as part of the AAAI-04 / IAAI-04 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.