



Association for the Advancement of Artificial Intelligence

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FOR IMMEDIATE RELEASE

Nineteenth Innovative Applications of Artificial Intelligence conference (IAAI-07):

Sampling AI-at-work in today's and tomorrow's business, science and government
July 23-24, 2007 Hyatt Regency Vancouver, B.C.
In conjunction with AAAI-07

Menlo Park, CA - July 22, 2007. Since its inception in 1989, the Innovative Applications of Artificial Intelligence conference (IAAI) has been the leading conference dedicated to showcasing the ways AI is delivering strategic, advantages in businesses, science and government around the globe. Each year, new applications using AI techniques that have quantifiable results (e.g., saving money and/or time) receive the prestigious IAAI award.

Several years ago, the conference expanded its mission beyond recognizing deployed applications to also include emerging applications still under development that show significant promise in their approach and early results.

This year, 22 papers were accepted for IAAI-07, include a record nine non-US papers, with the U.S. having 13. This is one of many indications of the growing global nature of the AI community.

Of far greater significance is the global reach of many of this year's applications. One winning application, for example, is deployed to 40 mobile operators and millions of subscribers around the world.

Through the years, IAAI has had several award-winning applications which automate financial underwriting in various ways. For instance, Fannie Mae, the institution formed by the U.S. government in 1938, and privatized in 1968, to help citizens purchase homes, has taken intelligent underwriting to a new level with a Web-based system that enables mortgage lenders to build their own automated underwriting applications. Another Web-based winner is journal-ranking.com, a global academic journal ranking system from the Hong Kong University of Science and Technology that is now getting a million hits per month.

Since the emergence of data mining technology in the early 1990s, IAAI has also recognized a number of innovative DM applications. This year, IAAI recognizes the first innovative intelligent application to be deployed on the Semantic Web. It provides access to a virtual solar-terrestrial observatory – a concatenation of heterogeneous observational datasets that appear as if all resources are organized, stored and retrieved/used in a common way. In addition to the IAAI paper that will be presented on this system, it will also be shown at the Intelligent Systems Demonstrations during the conference.

For those interested in cooperating robots, Kiva Systems (U.S.) has received an award for a production system that coordinates hundreds of cooperating, autonomous robotic vehicles in warehouses.

These are a few examples of the high-impact applications honored at this year's IAAI conference. A brief description of each application and the conference's world-class invited speakers follows.

A CD containing all of the IAAI papers can be obtained from AAAI Press <http://www.aaai.org/Press/Proceedings/proceedings.php>

IAAI-07 Applications

All papers and invited speakers will be in the Regency B room at the Hyatt Regency in Vancouver, B.C.

Machine Learning (Tuesday, July 24, 10:20 - 11:20 a.m.)

- Stochastic Optimization for Collision Selection in High Energy Physics (Emerging)
University of Texas Austin; University of California Irvine (U.S.)
AI has begun to play a critical role in basic science research such as in this high energy physics application which aids in precision measurements that elucidate the underlying structure of matter produced in high energy particle accelerators.
- Adaptive Timeout Policies for Fast Fine-Grained Power Management (Emerging)
Intel Research (U.S.)
An adaptive timeout power management technique for mobile appliances that executes in less than one millisecond, and is sufficiently simple to be deployed directly on a microcontroller.

Space Applications (Tuesday, July 24, 11:30 a.m. - 12:30 p.m.)

- Machine Learning for Automatic Mapping of Planetary Systems (Emerging)
Lunar & Planetary Institute (Texas); University of Colorado Boulder; University of Houston (U.S.)
Automates geomorphic mapping of planetary surfaces (previously drawn manually by a domain expert) with an accuracy rate of ~91%.
- The Virtual Solar-Terrestrial Observatory: A Deployed Semantic Web Application Case Study for Scientific Research (Deployed) ***
Stanford University; Guinness Associates; National Center for Atmospheric Research (U.S.)

Allows virtual access to a highly distributed and heterogeneous set of data giving appearance of common organization, storage and retrieval/use.

*** (This system can be seen at the Intelligent Systems Demonstrations during the conference.)

Medical Applications (Tuesday, July 24, 3:00 – 4:00 p.m.)

- Biomind ArrayGenius and GeneGenius: Web Services Offering Microarray and SHP Data Analysis via Novel Machine Learning Methods (Deployed)
Biomind (U.S.)
Scientific post-genomic analysis
- Real-Time Identification of Operating Room State from Video (Emerging)
University of Maryland (U.S.)
Automatically determines the state of an ongoing operation from video for scheduling purposes.

Information Systems (Tuesday, July 24, 4:20 - 5:20 p.m.)

- Using AI for e-Government Automatic Assessment of Immigration Application Forms (Deployed)
City University of Hong Kong (PRC)
- Journal-Ranking.com: An Online Interactive Journal Ranking System (Deployed)
Hong Kong University of Science and Technology & Red Jasper Ltd., Hong Kong (PRC)
Website for global academic journals; gets 1 million hits/month

Agents (Wednesday, July 25, 9:00 – 10:00 a.m.)

- Coordinating Hundreds of Cooperative, Autonomous Vehicles in Warehouses (Deployed)
Kiva Systems (U.S.)
First commercially available, large-scale autonomous robot system
- A Multi-Agent Approach to Distributed Rendering Optimization (Emerging)
University of Castilla (Spain); Software Competence Center GmbH, (Austria)
A novel approach to generating photorealistic 2D digital images from the abstract description of a 3D screen.

Decision Support (Wednesday, July 25, 11:30 a.m. – 12:30 p.m.)

- MasDISPO: A Multiagent Decision Support System for Steel Production and Control (Deployed)
DFKI GmbH (Germany)
- Optimizing Anthrax Outbreak Detection Using Reinforcement Learning (Emerging)
McGill University (Canada)

Business Automation (Wednesday, July 25, 1:50 - 2:50 p.m.)

- The VITA Financial Services Sales Support Environment (Deployed)
University of Klagenfurt (Austria)

Deployed in Hungary; Web-based sales product & service recommender development environment

- Custom DU® - A Web Based Business User Driven Automated Underwriting System (Deployed)
Fannie Mae (U.S.)
Web delivered

Human Computer Interaction (Wednesday, July 25, 3:00 - 4:00 p.m.)

- Enabling Intelligent Content Discovery on the Mobile Internet (Deployed)
Changing Worlds Ltd. (Ireland)
Deployed to 40 mobile operators and millions of subscribers around the world.
- Supporting Feedback and Assessment of Digital Ink Answers to In-Class Exercises (Emerging)
Massachusetts Institute of Technology Science and AI Lab (U.S.)
The Classroom Learning partner supports a continuous feedback cycle between student and teacher, assessing students' mastery of new material presented in class. CLP consists of a network of Tablet PCs and software for posing questions to students. It interprets their handwritten answers, and aggregates the answers into equivalence classes, each of which represents a particular level of understanding or misconception of the material.

Planning and Workflow (Wednesday, July 25, 4:20 - 5:20 p.m.)

- Optimal Multi-Agent Scheduling with Constraint Programming (Emerging)
Cornell University (U.S.); University of Bologna (Italy)
- Wings for Pegasus: Creating Large-Scale Scientific Applications Using Semantic Representations of Computational Workflows (Emerging)
University of Southern California, Information Sciences Institute (U.S.)
Scientific communities are increasingly sharing resources including data repositories, services, instruments and computing resources. This system computes workflows to manage these very heterogeneous resources.

Agents in Virtual Environments (Thursday, July 26, 11:30 a.m. - 12:30 p.m.)

- An Integrated Development Environment and Architecture for Soar-Based Agents (Emerging)
Bar Ilan University (Israel)
Development and deployment environment for coding agents situated in a complex dynamic virtual world.
- RETALIATE: Learning Winning Policies in First-Person Shooter Games (Emerging)
Lehigh University (U.S.)

Machine Learning (Thursday, July 26, 1:50 - 1:50 p.m.)

- Adaptive Traitor Tracing with Bayesian Networks (Emerging)
IBM Research; University of California Santa Cruz (U.S.)

Determines which broadcast encryption keys have been compromised (“traitor tracing”).

- Fish Inspection System Using a Parallel Neural Network Chip and Image Knowledge Builder Application (Deployed)
General Vision (U.S.)
Deployed on vessels in Norway and Iceland

IAAI Invited Speakers

- Revolutionizing Prostheses: A Program of the Defense Advanced Research Projects Agency (DARPA), Geoffrey S.F. Ling (DARPA)
(Tuesday, July 24, 1:50-2:50 pm)
- *Robert S. Engelmere Memorial Award Lecture*
AI in a Moore’s Law World: The Stories of Farecast and KnowItAll,
Oren Etzioni (University of Washington)
(Wednesday, July 25, 10:20-11:20 a.m.)
- Big “A”, Small “I”: Smart Ends from Simple Means
Matt Brown (Maxis / Electronic Arts)
(Thursday, July 26, 10:20 - 11:20 a.m.)

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About AAI

Founded in 1979, the Association for the Advancement of Artificial Intelligence (formerly the American Association for Artificial Intelligence) (www.aaai.org) is a nonprofit scientific membership society devoted to advancing the science and practice of AI. Its mission is to: (1) advance the scientific understanding of the mechanisms underlying intelligent thought and behavior, (2) facilitate their embodiment in machines, (3) serve as an information resource for research planners and the general public concerning trends in AI, and (4) offer training for the current and coming generations of AI researchers and practitioners. The Association has sponsored the annual AAI/IAAI conferences, highly regarded in the AI field, since 1980 and 1989 respectively.