



**Twenty-First National Conference
on Artificial Intelligence
(AAAI-06)
Workshop Program**

July 16-17, 2006

Boston, Massachusetts, USA

*Sponsored by the
American Association for Artificial Intelligence*

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Deadlines

- March 31: Submissions due
- April 24: Notification of acceptance
- May 17: Camera-ready copy due to organizers and AAAI
- July 16–17: AAAI-06 Workshop Program

AAAI Formatting Guidelines

- www.aaai.org/Publications/Author/author.php

AAAI is pleased to present the AAAI-06 Workshop Program. Workshops will be held Sunday and Monday, July 16–17, 2006 (unless otherwise noted) at the Seaport Hotel and World Trade Center in Boston, Massachusetts. Exact locations and dates for the workshops will be determined in the spring. The AAAI-06 workshop program includes 17 workshops covering a wide range of topics in artificial intelligence. Workshops are one day unless noted otherwise in the individual description. Each workshop is limited to approximately 25 to 75 participants. Participation at these workshops is by invitation from the workshop organizers. All workshop participants must preregister for the AAAI-06 technical conference, and must indicate which workshop(s) they will be attending. An additional workshop fee will be required. AAAI will publish its AAAI-06 registration rates in March 2006. Registration information will be mailed directly to all invited participants. Workshop working notes will be distributed onsite for participants only, and may be available after the conference as technical reports.

This year's workshop program was constructed to encourage dialogue and build bridges between researchers in different subfields. Several of the workshops are follow-ons from workshops held at more specialized AI conferences. As such, we encourage people to attend and contribute to workshops that they are interested in even if they have no recent work directly in that area.

Submission Requirements

Submission requirements vary for each workshop, but the key deadlines are uniform for all. Submissions for all workshops are due to the organizers by March 31, 2006. Workshop organizers will notify submitters of acceptance by April 24, 2006. Camera-ready copy is due back to workshop organizers by May 17, 2006 and to AAAI by May 17, 2006. Please mail your submissions directly to the chair of the individual workshop ac-

ording to their directions. Do not mail submissions to AAAI. For further information about a workshop, please contact the chair of that workshop.

Formats

Many workshops request or require the AAAI two-column format. Links to styles, macros, and guidelines for this format are located at www.aaai.org/Publications/Author/author.php

AAAI Workshop Chairs

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Contents

- AI-Driven Technologies for Services-Oriented Computing
- Auction Mechanisms for Robot Coordination
- Cognitive Modeling and Agent-based Simulations
- Cognitive Robotics
- Computational Aesthetics: Artificial Intelligence Approaches to Beauty and Happiness
- Educational Data Mining
- Evaluation Methods for Machine Learning
- Event Extraction and Synthesis
- Heuristic Search, Memory Based Heuristics and Their Applications
- Human Implications of Human-Robot Interaction
- Intelligent Techniques for Web Personalization
- Learning for Search
- Modeling and Retrieval Context
- Modeling Others from Observations
- Ontology Learning on the Semantic Web
- Spatial and Temporal Reasoning
- Statistical and Empirical Approaches for Spoken Dialogue Systems

AI Driven Technologies for Service-Oriented Computing

Services-oriented computing (SoC) is an emerging computing paradigm for distributed systems that advocates Web-based interfaces for the distributed business processes of any enterprise. The interfaces, called Web services, hold the promise for diluting the traditional challenges of interoperability, inflexibility, and performance that have long plagued the traditional distributed systems. Historically, research in distributed systems has shied away from adopting relevant AI methodologies; they have been generally perceived as esoteric and computationally intensive. However, SoC research represents a significant departure from this line of thought, and presents a singular opportunity for AI techniques to enter and pervade this emerging area. From the AI researcher's perspective, SoC represents an emerging application testbed with its own distinct challenges and the potential to significantly impact both the industry and academia.

The goal of this workshop is to investigate the applicability of AI methodologies, such as logic, theorem proving, search, planning, and probabilistic models to problems in SoC. In particular, AI techniques seem especially suited to address the problems of Web services description, discovery, binding, Web services process composition and execution, semantics for Web services, and related issues. They complement and supplement the existing approaches by bringing the much required mathematical rigor and formal analysis to the area.

Topics

The topics of interest to this workshop include but are not limited to the following:

- Web services representation and modeling using logics/calculi (zero-order, first-order, higher-order)
 - Web services description validation and consistency checking using inference rules and theorem-provers
 - Representation of and reasoning on Web services negotiations, agreements, contracts, and quality of service guarantees
 - Web services composition, orchestration, and choreography through planning and scheduling
 - Self-aware, self-optimizing, and self-healing Web processes
 - Probabilistic reasoning for fault-tolerant and robust Web processes
 - Support for dynamic and adaptive Web processes using machine learning
- Web process flow enactment using multiagent systems
 - Conceptual inferencing for semantic Web services using inference rules
 - Ontology reconciliation (mapping, merging, and integration) for semantic Web services using logical and probabilistic models
 - Service knowledge propagation mechanisms
 - Frameworks, community, and deployment architectures for services-based agents
 - Verification and analysis of services-based agent communities
 - Intelligent methods for management and performance analysis of services on the Grid
 - New AI application areas in SoC
 - Deployed/industrial applications in SoC utilizing AI techniques

Submissions

We invite academic/industrial researchers and practitioners to submit original research papers, well-written surveys, or papers describing deployed systems to the workshop. The papers must not exceed 8 pages in length including references and should be prepared using the AAAI formatting guidelines. The papers should be submitted using the submission system on the workshop website. Each paper will be reviewed by at least 2 members of the PC. Accepted authors will be required to submit final camera-ready copy to the organizers on May 15, two days prior to the final submission deadline.

Organizing Committee

Prashant Doshi, LSDIS Lab, University of Georgia; Richard Goodwin, IBM T. J. Watson Research Center, and Amit Sheth, LSDIS Lab, University of Georgia

Program Committee

Rama Akkiraju, Nirmal Desai, John Domingue, Michael Huhns, Vipul Kashyap, Joseph Kopena, Juhnyoung Lee, David Martin, E. Michael Maximilien, Sheila McIlraith, Muninder Singh, Rainier Unland, Kunal Verma.

Additional information can be found at lsdis.cs.uga.edu/ai-soc

Robot teams are increasingly becoming a popular alternative to single robots for a variety of difficult robotic tasks, such as planetary exploration or planetary base assembly. A key factor for the success of a robot team is the ability to coordinate the team members in an effective way. Coordination involves the allocation and execution of individual tasks through an efficient (preferably, decentralized) mechanism. It is desirable to enable good decision making while communicating as little information as possible.

Recently, there has been significant interest in using auction-based methods for robot coordination. In these methods, the communicated information consists of bids robots place on various tasks, and coordination is achieved by a process similar to winner determination in auctions. Auction-based methods balance the trade-off between purely centralized methods (full communication) and purely decentralized methods (no communication) in both efficiency and quality.

This workshop attempts to draw the leading researchers in this active area of research to discuss and analyze issues related to auction-based robot coordination. This emerging field of research has demonstrated significant progress in its few years of existence, however heretofore there has been no official forum for involved researchers to share experience, establish foundations, and explore future directions.

Our goal is to cover both the practical aspects of the subject (distributed implementation, limited communication, target applications), as well as the theoretical ones (theoretical guarantees, computational complexity, communication complexity) through a series of invited talks, research presentations, and discussion sessions during a one-day meeting. Even though this workshop focuses primarily on auctions and robots, we welcome participation from related areas, such as generic market mechanisms and conventional robot/agent coordination with the goal of fertilizing further the common ground between these disciplines.

Topics

We invite submissions of papers covering the full range of topics related to Auction Mechanisms for Robot Coordination. Topics of interest include (but are not limited to):

- Robot teams
- Coordination
- Auctions
- Learning
- Theoretical results
- Communication
- Implementation and applications

Submissions

Please use the AAAI-06 formatting instructions. Papers must be between 5 and 8 pages long, including all names, affiliations, references, and figures. Papers must be submitted in either PDF or PS format. If any special fonts are used, they must be embedded in the file.

All submissions must be sent by e-mail to lagoudakis@intelligence.tuc.gr with the subject line "AAAI-06 AuctionBots Workshop paper submission." Successful submissions will be confirmed by e-mail.

All submitted papers will be peer-reviewed and accepted papers will be orally presented. Submitted papers must describe original research, either completed or in progress. Note that many AAAI workshop proceedings are not archival and thus accepted papers can be submitted later to archival conferences. However, no previously published papers should be submitted to the workshop.

Organizing Committee

M. Bernardine Dias, Carnegie Mellon University (mbdias@ri.cmu.edu); Sven Koenig, University of Southern California (skoenig@usc.edu); and Michail G. Lagoudakis, Technical University of Crete, Greece (lagoudakis@intelligence.tuc.gr)

Program Committee

Tucker Balch, Georgia Institute of Technology; M. Bernardine Dias, Carnegie Mellon University; Pinar Keskinocak, Georgia Institute of Technology; Sven Koenig, University of Southern California; Michail G. Lagoudakis, Technical University of Crete; Vangelis Markakis, University of Toronto; Craig Tovey, Georgia Institute of Technology; Rob Zlot, Carnegie Mellon University

Additional information can be found at www.intelligence.tuc.gr/auction/

Cognitive Modeling and Agent-Based Social Simulation

Traditionally, artificial intelligence and cognitive science have focused on building deep models of individual cognition at the expense of the sociocultural processes and their relationship to cognition. Agent-based social simulation has been receiving increasing attention from social scientists. However, most models developed to date have assumed rudimentary cognition and social interaction capabilities and the resulting lessons may have less relevance to the real world social phenomena of interest. This workshop aims to bring together cognitive modeling and agent-based social simulation researchers to strengthen a dialogue on the synthesis of the two approaches. Such a synthesis offers us the hope of designing cognitively rich dynamic models of societies that can increase our understanding of a variety of aspects of individual and social behavior.

Topics

We especially encourage submissions that address the following topics:

- Cognitive architectures of individual cognitive agents
- Cognitive models of multiagent interactions (e.g., communication, cooperation, teamwork and negotiation)
- Cognitive models of multiagent organizations (e.g., organizational structure and networking, economies, culture, and other coordination structures and mechanisms)
- Simulation-based or computational models of distributed cognition and cognitive artifacts (institutions, conventions, norms, obligations)
- Social cognitive models of reputation and other norm-enforcing mechanisms
- Computational abstractions, languages, and tools for cognitive modeling of agents and multiagent interactions
- Formal and agent-based models of social behavior

We are particularly interested in submissions that (1) not only address the micro and the macro but also stretch to account for their bidirectional connections, and (2) describe rich models of individual cognition and relate them to the emergent social phenomena. We also welcome papers reporting on practical applications of cognitive architectures such as ACT-R, SOAR, CLARION, and ICARUS to design multiagent systems for multiplayer computer games as well as real world tasks.

Submissions and Attendance

Attendance is limited to active participants only. We strongly encourage those interested in attending to submit a paper not exceeding 10 pages formatted according to the AAAI-06 guidelines. Please submit a pdf copy of your paper to afzal at eccs.utoledo.edu.

Program Committee

Bill Clancy, Rosaria Conte, Bruce Edmonds, Piotr Gmytrasiewicz, Christian Labiere, Pietro Panzarasa, Ron Sun, Jan Treur, Afzal Upal, William Wallace, Gerhard Weiss

Additional information can be found at www.eng.utoledo.edu/~aupal/cmabs06

Research in robotics has traditionally emphasized low-level sensing and control tasks including sensory processing, path planning, and manipulator design and control. In contrast, research in cognitive robotics is concerned with endowing robots and software agents with higher-level cognitive functions that enable them to reason, act and perceive in changing, incompletely known, and unpredictable environments in a robust manner. Such robots must, for example, be able to reason about goals, actions, resources (linear and/or non-linear, discrete and/or continuous, replenishable or expendable), when to perceive and what to look for, the cognitive states of other agents, time, collaborative task execution, and so on. In short, cognitive robotics is concerned with integrating reasoning, perception and action with a uniform theoretical and implementation framework.

The use of both software robots (softbots) and robotic artifacts in everyday life is on the upswing and we are seeing increasingly more examples of their use in society with commercial products around the corner and some already on the market. As interaction with humans increases, so does the demand for sophisticated robotic capabilities associated with deliberation and high-level cognitive functions. Combining results from the traditional robotics discipline with those from AI and cognitive science has and will continue to be central to research in cognitive robotics.

This workshop aims at bringing together researchers involved in all aspects of cognitive robots, and discussing current work and future directions. While all aspects of cognitive robotics are of interest to the workshop, we especially welcome discussions and demonstrations of implemented systems, lessons learned from deployed systems in the real world, developments in cognitive psychology and neuroscience relevant for developing more powerful computational models of cognition, and on the interplay of cognitive robotics with engineering fields such as control theory, mecatronics and modern sensing technologies.

Submissions

Potential participants are invited to submit either a full length technical paper or a statement of interest with a position paper. For the sake of uniformity, all technical papers should follow the AAAI 2006 style guide and should be no longer than 8 pages in camera ready format. Author names should be included. Please refer to the AAAI style guide for details.

Others wishing to attend should submit a 1–2 page description of their work or interest in this

area (including a short list of related publications). This may include specific questions and issues that they feel should be addressed. Authors who would like to participate in systems demonstrations (either live, simulated, or videotaped) should indicate their audio-visual and/or computer needs at the time of submission. If the quality of the submissions is sufficiently high, we may look into the possibility of publishing extended versions of selected articles in a special journal issue.

Only electronic submissions will be accepted and all papers must be in PDF format. All submissions should be sent to cogrob06@cs.tum.edu. Please note that our notification date will be on May 8, allowing only 9 days for accepted authors to prepare their camera-ready copy.

Organizing Committee

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Additional information can be found at cogrob06.cs.tum.edu/

Computational Aesthetics: Artificial Intelligence Approaches to Beauty and Happiness

Our aesthetic agency for beauty and emotion is one of the most celebrated bastions of humanity. If machines could understand and affect our perceptions of beauty and happiness, they could touch people's lives in fantastic new ways. Inspired by the various literatures of art theory, psychology, cognitive science, and philosophy, artificial intelligence has in recent years made rapid advances in the computation of art, music, poetry, and lifestyle. The time is ripe to review how this body of work enhances the beauty and happiness of our lives and the world. Hence, this event will bring together AI theorists and practitioners across various realms, in study and celebration of the workshop's central thematic—computational aesthetics.

Topics

We encourage the submission of novel, untraditional, and exciting work (exotic ideas are welcome!) that is concerned with discovering or generating human feelings of beauty and happiness with the help of a computer. The following is a list of possible topics:

- Affective interfaces
- Semiotic models of aesthetics
- Intimate interfaces
- Taste-based recommender systems
- Estimation of emotional experiences
- Modeling of personalities and attitudes
- Computational humor
- Generative poetry
- Music analysis and generation
- Painting analysis and generation
- Computational art criticism
- Inspirational interfaces
- Tools for self-reflection
- Dream analysis
- Computational models of culture and identity
- Aural, haptic, and olfactory visualizations

Since the thematic of the workshop is highly interdisciplinary, we encourage the participation of people working in different fields such as human-computer interaction, natural language processing, computer vision, cognitive science, social media, semiotics, and others.

Format

The workshop will last for one day, and will consist of several sessions including presentations of research papers, position papers, and possibly short computer-generated papers; and a series of demos showcasing work presented in the research papers

Submissions

Submissions should be sent as a PDF file to both hugo at media.mit.edu and rada at cs.unt.edu. We accept either full research papers of 8 pages maximum, or short position papers of 4 pages maximum. We also accept computer-generated papers of 1 page maximum. Moreover, we encourage the inclusion of sample output wherever appropriate, such as an example of poetry created by your prose-bot, or a print of your automatically generated painting (in cases of sample output, 1 extra page is allotted).

Organizing Committee

Hugo Liu, Media Arts and Sciences, Massachusetts Institute of Technology ([hugo at media.mit.edu](mailto:hugo@media.mit.edu)); Rada Mihalcea, Computer Science and Engineering, University of North Texas ([rada at cs.unt.edu](mailto:rada@cs.unt.edu))

Additional information can be found at www.computational aesthetics.org

This workshop focuses on leveraging the ability of computer tutors to record their interactions with students to better understand how to teach students. Computer tutors are capable of recording both longitudinal data, as well as data at a fine-time scale such as mouse clicks and response time data. Using these interactions as a source of data to be mined provides a new view into understanding student learning processes. The objective of this workshop is to bring together researchers working at the intersection of AI and education to discuss how to better understand and learn from the data we are collecting.

Topics

Past submissions to this workshop were on topics such as inducing domain models from student performance data, formalisms for recording student/tutor interactions, and generic tools to view student/tutor interactions. We encourage submissions on these and other topics related to educational data mining, such as: what are the differences between various statistical approaches (e.g. factor analysis vs. q-matrices)? What are the major limitations of these techniques? Educational data mining differs from classic data mining in that the software has probably been explicitly instrumented to make mining easier, and there are sometimes strong, pre-existing psychological theories of how people learn. How can we best use these advantages?

We are specifically interested in work on topics of maintaining privacy of student data, and on new capabilities afforded by educational data mining. Examples of new areas of research are detecting plagiarism/collusion among students, or developing new tutorial interventions that require large data sets to operate.

Format and Attendance

The workshop will consist primarily of presentations, with papers grouped by theme to facilitate discussion. Presentations will come from selected submissions and from invited speakers. Those interested in attending should either submit a paper or contact the chair. Workshop attendance is limited to 75 people.

Submissions

We invite the submission of papers describing original research on the workshop topics. Papers should be less than 10 pages in length and submitted as PDF via e-mail.

Submit to

Joseph E. Beck (co-chair)
Center for Automated Learning and Discovery

Carnegie Mellon University
Pittsburgh, PA 15213
Telephone: 412 268 5726
Fax: 412 268 6436
E-mail: joseph.beck@gmail.com

Cochairs

Esma Aimeur, Department of Computer Science and Operations Research, University of Montreal; Tiffany Barnes, Department of Computer Science, University of North Carolina at Charlotte

Additional information can be found at www.andrew.cmu.edu/~jb8n/aaai06/workshop.html

The goal of this workshop is to encourage debate within the machine learning community into how we experimentally evaluate new algorithms. The workshop aims to discuss what properties of an algorithm need to be measured (e.g., accuracy, comprehensibility, conciseness); to discuss the need for more elaborate approaches than those currently used; to discuss the kind of alternate methods that could be useful; and ultimately to propose specific techniques that would be appropriate to particular problem categories.

Topics

We invite position papers and technical papers addressing three main topics:

Basic Issues

What is the purpose of evaluation, why is it important? Is it necessary to have a simple quantitative metric to measure progress? Is evaluation inherently multi-objective? Is the trade-off of the objectives always a qualitative judgment best left to the user?

Properties to Evaluate

What are the important properties of an algorithm that need evaluation? Can we summarize the results into statistically valid single measures? Are evaluation methods problem dependent; can we categorize these? How valuable are benchmark data sets and is their use statistically valid? What is the relationship between evaluation and the strength of supervision of the learning method (supervised, semi-supervised, or unsupervised)? Does the embedding of machine learning algorithms in larger systems alter the method of evaluation?

Lessons Learned from Other Fields

What have they measured and why did they measure it? What sort of statistical techniques have they used in evaluation?

Format and Attendance

Attendance is limited to active participants only (estimated at 20 participants). Contributions to the workshop can be made in the form of technical papers. The workshop will have invited talks and panel discussions by:

- Paul Cohen, University of Massachusetts
- Tom Dietterich, Oregon State University
- James Malley, National Institutes of Health

The audience is encouraged to participate in the discussion. There will be presentations of papers submitted and accepted to the workshop. Papers will be grouped by theme to facilitate discussion.

Submissions

Authors are invited to submit papers on the topics outlined above or on other related issues. Both position and technical papers will be considered for this workshop. To promote a lively event, with plenty of discussion, the organizers are very interested in papers taking strong positions on the issues listed above. Workshop papers should not be longer than 6 pages using the AAAI Style. Submissions should be made electronically in PDF or PostScript format and should be sent by e-mail to William Elazmeh at welazmeh@site.uottawa.ca. Authors of accepted papers are required to submit a permission to distribute form (one author per paper) when submitting the final version of the workshop paper.

Organizing Committee

Chris Drummond

NRC Institute for Information Technology
chris.Drummond@nrc-cnrc.gc.ca

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Program Committee

Nitesh Chawla, Ira Cohen, Charles Elkan, Peter Flach, George Forman, Robert C. Holte, Aleksander Kolcz, Sylvain Letourneau, Dragos Margineantu, Stan Matwin, Bianca Zadrozny

Additional information can be found at www.site.uottawa.ca/~welazmeh/conferences/AAAI-06/workshop

The focus of this workshop is on the extraction of events from textual or other modalities of information. While extraction of entities and relations from text and unstructured data is by now a well-explored research area, extracting events from text or other forms of raw input poses new challenges. Events have on average greater structural complexity than entities or relations, and the problem of narrative uncertainty, expressly stated or implicit, is more in evidence. An example is the following sentence from a Voice of America news report: “The United Nations says Somali gunmen who hijacked a U.N.-chartered vessel carrying food aid for tsunami victims have released the ship after holding it for more than two months.” This sentence expresses multiple events—a focal event (the release of a hijacked ship), and several contextual events providing a temporal and semantic framework for it. Extracting event information of this complexity appears to call for ideas from multiple disciplines, such as machine learning, natural language understanding, knowledge representation, database systems, and linguistic theory related to language semantics.

The goals of this workshop are the following:

1. Obtain a clear understanding of the new challenges posed by event-oriented information extraction vs. work done earlier in relation or entity extraction.
2. Discuss approaches and techniques, including combinations of techniques from different disciplines to perform efficient event extraction.
3. Identify unifying extraction concepts valid for multiple modalities.
4. Grapple with questions of uncertainty and reliability, in an attempt to promote the use of uncertainty measures in extraction systems.

Topics

We are particularly interested in position, vision, or research papers, and system demonstrations outlining or addressing challenges in the extraction of event oriented information. Topics of interest include, but are not limited to:

- Event definition, modeling, and representation
- The role of semantics in event extraction
- Combining multiple techniques (machine learning, ontologies, NLP, structured machine learning, etc.) for event extraction
- Audio, visual, and audio-visual event extraction
- Temporal aspects and evolution of extracted information
- Extracted information quality and pedigree (trustworthiness, uncertainty)
- Event identity and disambiguation, or event co-reference
- Evaluating event extraction systems

Organizing Committee

Doug Appelt (SRI), Naveen Ashish (UC Irvine), Dayne Freitag (Fair Isaac), Dmitry Zelenko (SRA)

Submissions

We anticipate a day-long workshop that will comprise of paper presentations, and a systems demonstration and poster session. Dr. Ralph Weischedel, BBN Technologies will be our invited speaker. Please e-mail inquiries and submissions to [events2006\[at\]ics\[dot\]uci\[dot\]edu](mailto:events2006[at]ics[dot]uci[dot]edu).

Additional information can be found at www.ics.uci.edu/~ashish/ee.htm

Heuristic Search, Memory-based Heuristics and Their Applications

Heuristic search is a well-established, fundamental field of research in artificial intelligence. Many hard problems in Artificial Intelligence can be modeled as pathfinding in a state-space graph. An intelligent search will be guided by heuristics so as to solve problems quickly.

In the past decade we have seen a large increase in the size of computer memories and disk storage. This has led to significant advances in heuristic search, with many new methods being introduced to better utilize the large memory and disk storage. Foremost among these are methods related to Pattern Databases, which are large lookup tables stored in memory that contain heuristic estimates based on exact solutions to subproblems of the original problem. Other methods were introduced to conduct search using disk space as a fast on-line working memory. This significantly increases the amount of available memory for the different tables and queues maintained by search algorithms and therefore larger problems can now be solved. All these new techniques greatly advance the strength of heuristic search and many problems can be solved orders of magnitude faster than before.

Traditionally, heuristic search and pattern databases have been used to solve combinatorial puzzles. Recently we have seen a large expansion of their use, with applications in other fields of artificial intelligence and computer science such as planning, model checking, dynamic programming and weighted logical inference.

The aim of this workshop is to discuss new achievements in heuristic search, their mutual influence, and their applicability to a large spectrum of problems and areas of artificial intelligence and computer science.

Topics

Topics include, but are not limited to the following:

- Heuristic search algorithms
- Admissible heuristics
- Pattern databases—new understanding, advances and applications
- Using disk space to speed up search
- Applying these techniques to a broader spectrum of AI and computer science problems

Of particular interest are methods and applications that use heuristic-guided search in new fields of research such as planning, dynamic programming etc.

Format and Attendance

The workshop will consist of invited speakers, presentations of selected submitted technical

work, a poster session and a panel-led general discussion. One of the major intentions of this workshop is to create interaction between the participants. Therefore, a significant weight will be given to the poster session and the general discussion. We expect 25-50 attendees. Authors of accepted papers/posters will be automatically invited. Other invitations will be sent on a personal or request basis. Please note that AAAI-06 will also have a separate related workshop on “learning for search.” That workshop will be held on another day to enable interested people to attend both workshops if they so wish.

Submissions

We welcome submissions of full technical papers as well as statements of interest—all describing work relevant to the topics of the workshop. Submissions are accepted in PDF format only, using the AAAI formatting guidelines. Papers are encouraged to be 6 pages in length but can be anything between 2 to 8 pages. Statements of interest should be either one or two pages. All submissions will be reviewed by multiple reviewers for quality and relevance. Please submit your papers to Ariel Felner at the e-mail address below.

Cochairs

Ariel Felner (Primary contact), Ben-Gurion University of the Negev, Israel (felner@bgu.ac.il); Robert C. Holte, University of Alberta, Canada (holte@cs.ualberta.ca); Hector Geffner, UPF (hector.geffner@upf.edu)

Program Committee

Blai Bonet; Stefan Edelkamp, Ariel Felner (cochair), Jeremy Frank, David Furcy, Hector Geffner (cochair), Eric Hansen, Patrik Haslum, Robert Holte (cochair), Richard Korf, Jonathan Schaeffer, Rong Zhou, Weixiong Zhang

Additional information can be found at www.ise.bgu.ac.il/faculty/felner/workshop/

Human Implications of Human-Robot Interaction

Autonomous humanoid robots have begun to display levels of human-like behavior and appearance that call for responsible attention to important psychological, sociological, philosophical, and spiritual implications of human-robot interaction (HRI). As ongoing commercial development of these robots makes human-robot interaction increasingly common, elements of human culture beyond the technical community need to engage HRI phenomena and seek clearer understanding of their potentially significant effects upon human society. It is plausible, for example, to anticipate that cumulative HRI experiences may produce novel and fundamental changes in our broadly shared concepts of human uniqueness, identity, consciousness, freedom, moral responsibility, and moral status; indeed, they could alter structures of human society itself.

Accordingly, this AAAI-06 workshop invites paper presentations and discussion of these potential changes among members of the artificial intelligence community—it welcomes, as well, participation and contributions from representatives of other areas, such as psychology, sociology, philosophy, and theology. The basic objective of the workshop is to cultivate dialogue of a scope and quality that will improve awareness and understanding of specifically human implications of human-robot interaction.

Format

Presentation of papers to an audience of 25–75 attendees at AAAI-06 in Boston will be followed, during an afternoon session, by open discussion. Everyone invited to the Boston workshop will have submitted a paper and will have demonstrated an ability to contribute to the discussion. About 25 of the submitted papers will be accepted for presentation and inclusion in the workshop's AAAI technical report, while some others are expected to be accepted as poster papers. Both sessions will be linked in real time via multipoint videoconferencing to additional gatherings of invited scholars at the Universität Augsburg, in Augsburg, Germany, and at Oklahoma City University, in Oklahoma City, USA.

Submissions

Papers must be 5–7 pages in length, written in (or translated into) English, and submitted as attached Microsoft Word or PDF documents, in MLA style format, using “Submit Papers Here,” under “AAAI-06 Workshop” on the GOOD STAR website at starport.okcu.edu/SI/GS/

Organizing Committee

Wolfgang Achtner, P Justus-Liebig-Universität Giessen, Giessen, Germany (info@wolfgangachtner.de); Lundy Lewis, Southern New Hampshire University, Manchester, NH, USA (l.lewis@snhu.edu); Ted Metzler (Chair), Wimberly School of Religion, Oklahoma City University, 2501 N. Blackwelder, Oklahoma City, OK, 73106, USA ; Fax: (405) 208-6046 , Tel: (405) 208-5511 (tmetzler@okcu.edu)

Web personalization can be defined as any set of actions that can tailor the Web experience to a particular user or set of users. To achieve effective personalization, a variety of types of data must be harnessed, including the user profiles, Web content and structure, and domain knowledge. Efficient and intelligent techniques are needed to mine this data for actionable knowledge, and to effectively use the discovered knowledge to create user models. These techniques must address important challenges emanating from the size and the heterogeneous nature of the data itself, as well as the dynamic nature of user interactions with the Web. These challenges include the successful integration of techniques from machine learning, information retrieval and filtering, databases, agent architectures, knowledge representation, data mining, statistics, user modeling, and human-computer interaction.

This workshop represents the fourth in a successful series of workshops that have brought together researchers and practitioners to foster an exchange of ideas, and to facilitate a discussion of current and emerging topics related to Web Intelligence, Web mining, and Personalization.

We invite original contributions in a variety of areas related to Web personalization, including Data Modeling and Integration; Systems and Architectures; and Enabling Technologies. For a detailed list of topics, please see the workshop Web site: (maya.cs.depaul.edu/~mobasher/itwp06/).

Submissions and Participation

All submissions must be made electronically to mobasher@cs.depaul.edu and S.S.Anand@warwick.ac.uk. Please use the AAAI Press prescribed formatting instructions. Papers should be no more than 12 pages inclusive of all references and figures. All papers must be submitted in PDF. At least one author for each accepted paper is expected to attend the workshop. The workshop will be open to all those interested in attending.

Organizing Committee

Bamshad Mobasher, School of Computer Science, DePaul University, Chicago, USA (mobasher@cs.depaul.edu); Sarabjot Singh Anand, Department of Computer Science, University of Warwick, UK (S.S.Anand@warwick.ac.uk)

Additional information can be found at maya.cs.depaul.edu/~mobasher/itwp06/

Heuristic search is among the most widely used techniques in AI. In its different varieties, such as tree-based search and local search, it provides the core engine for applications as diverse as planning, parsing, and protein folding. One of the most promising avenues for developing improved search techniques is to use some kind of algorithmic component that learns from experience. Many disparate techniques have arisen in recent years that exploit learning to improve search and problem-solving. These techniques can be off-line or on-line, based on hard constraints or probabilistic biases, and applied to tree-structured or local search.

This workshop aims to bring together researchers and practitioners from the various sub-communities where such methods have arisen in order to learn from each other, develop common understandings, and inspire new algorithms and approaches.

Topics

Relevant topics include, but are not limited to: adaptive and self-tuning algorithms, automated portfolio design, clause learning, computing search space features, decision-theoretic approaches to learning in search, dynamic portfolio design, exploiting models of search spaces, exploiting performance profiles or run-time distributions, incremental and active learning in search, learning to select operators or heuristic functions, metareasoning from experience, model-based search, reinforcement learning for search algorithms, and runtime prediction.

Please note that there will also be a separate workshop at AAAI-06 on "Heuristic Search, Memory-based Heuristics and Their Applications." These two workshops will be held on separate days and people are encouraged to submit to both workshops if they wish.

Submissions

Potential participants wishing to present their work should submit technical papers formatted in the AAAI conference style. Technical papers are encouraged to be 6 pages in length with a maximum of 8 pages. Please note that all submitted papers will be carefully peer-reviewed by multiple reviewers for quality and relevance. Other potential participants should submit a statement of relevant research interests, maximum 2 pages in length. Submissions should be sent in PDF format via e-mail to lfs06submissions@parc.com.

Program Committee

Wheeler Ruml (cochair), Palo Alto Research Center; Frank Hutter (cochair), University of British Columbia; Tom Carchrae, Cork Constraint Computation Center (4C); Susan Epstein, City University of NY; Youssef Hamadi, MSR Cambridge; Henry Kautz, University of Washington; Sven Koenig, University of Southern California; Kevin Leyton-Brown, University of British Columbia; Toby Walsh, University of New South Wales; Shlomo Zilberstein, University of Massachusetts, Amherst.

Additional information can be found at www.cs.ubc.ca/~hutter/aaai06_ws

Context-sensitive processing plays a crucial role in many modern intelligent IT applications. Contextual concerns affect reasoning, decision-making, and adaptation for a wide range of areas including not only mobile and ubiquitous computing, but also areas such as collaboration support, information sharing, workflow, health care, personal digital assistants, adaptive games, and e-learning. Future advances will depend on the ability to represent and manipulate information about a rich range of contextual factors, including not only physical characteristics of the task environment, but other aspects such as knowledge states (of both the application and user), emotions, and so on. Numerous methods are currently being brought to bear to address these issues (e.g., machine learning, logical reasoning, object relationship models, and ontologies), but are being pursued in divergent communities with limited interactions. This workshop aims to bring together researchers and practitioners exploring issues and approaches for context-sensitive systems, from a broad range of areas, to share their problems and techniques across different research and application areas. The workshop will examine issues and advances in methods for structured storage of contextual information, for retrieving and exploiting this information, and for integrating context and application knowledge.

Topics

Areas of interest include, but are not limited to:

- Generic and specific context models
- Explicit context representations
- Retrieval of context and context information
- Matching contexts and situations
- Context-awareness in applications
- Context-based reasoning
- Evaluations of context-aware applications
- Explanation and context
- Mobile context
- Information blurring
- Context-focusing and context-switching
- Context management

Format and Attendance

This two-day workshop will combine oral paper presentations, posters, and extensive discussion. An invited talk will be presented by Anind Dey (CMU). The workshop will also include a session for live system demonstrations, providing an opportunity to showcase and discuss emerging technologies and recent research prototypes.

Submissions and Attendance

Workshop submissions will be electronic, in pdf format only, using a submission system on the workshop website. Papers must be written in English and not exceed 5 pages in the AAAI two-column format.

Attendance is limited to active participants only. Those wishing to participate without paper submission should submit a brief synopsis of their relevant work.

Organizing Committee

Thomas R. Roth-Berghofer, German Research Center for Artificial Intelligence (DFKI GmbH) (trb@dfki.uni-kl.de); Stefan Schulz, Carleton University (schulz@sce.carleton.ca); David Leake, Indiana University (leake@cs.indiana.edu); and Sven Schwarz, German Research Center for Artificial Intelligence (DFKI GmbH) (sven.schwarz@dfki.de)

Additional information can be found at mrc2006.workshop.hm

Modeling Others from Observations

Modeling others from observations involves recognizing, inferring, and reasoning about their plans, goals, and activities, based only on observations of their behavior. This is a synergistic area of research combining and unifying techniques in plan recognition, activity recognition, user modeling, intelligent user interfaces, human/computer interaction, autonomous and multi agent systems, natural language understanding, and machine learning. The observed actors may be software, robots, or humans. The modeling system may observe their interaction with the environment, and with each other.

We have seen a significant increase in work in this area because it plays a crucial role in a wide variety of applications including software assistants for work related tasks, assistive living and others; observation-based coordination in robots and software agents; and physical, computer, and critical infrastructure security

This widespread diversity of applications and disciplines, while producing a wealth of ideas and results, has unfortunately contributed to fragmentation in the field, as researchers publish relevant results in a wide spectrum of journals and conferences.

This workshop seeks to bring together researchers and practitioners from diverse backgrounds, to share in ideas and recent results. It will aim to identify important research directions and to identify opportunities for synthesis and unification.

Topics

Contributions are sought in the following areas of research:

- Plan, behavior, activity recognition
- Adversarial planning, opponent modeling
- Modeling multiple agents, modeling teams
- User modeling on the web and in intelligent user interfaces
- Acquaintance models
- Agent modeling in marketplaces and e-commerce
- Machine learning for plan recognition and user modeling
- Social network learning and analysis
- Monitoring multi-agent conversations (overhearing)
- Observation-based coordination and collaboration (teamwork)
- Multiagent plan recognition
- Observation-based failure detection
- Uncertainty reasoning for plan recognition

- Intent inference and Intent recognition
- Commercial applications of user modeling and plan recognition
- Representations for agent modeling
- Modeling social interactions
- Inferring emotional states
- Reverse engineering and program recognition
- Programming by demonstration
- Imitation

Due to the diversity of disciplines engaging in this area, related contributions in other fields are also welcome.

Format

The workshop will consist of a series of research presentations, organized into topical sessions (topics to be decided based on submissions). An interdisciplinary panel is planned, seeking to highlight research contributions and challenges unifying and differentiating the different sub-areas.

Submissions

We welcome submissions describing either relevant work or proposals for discussion topics that will be of interest to the workshop. Submissions are accepted in PDF format only, using the AAAI formatting guidelines. Submissions must be no longer than eight pages in length, including references and figures. Please e-mail submissions to galk@cs.biu.ac.il

Organizing Committee

Gal Kaminka (galk@cs.biu.ac.il); David Pynadath (pynadath@isi.edu); Christopher Geib (christopher.geib@honeywell.com)

Additional information can be found at www.isi.edu/~pynadath/MOO-2006/

With the advent of the Semantic Web, standard ontology languages are emerging that will allow concept sharing on a wide scale. Ontologies expressed in a standard language, such as the Web Ontology Language (OWL) and exposed on a network offer the potential for unprecedented interoperability solutions since they are semantically rich, computer understandable and inherently extensible. However, the potential power of ontological solutions is curtailed by the difficulty and expense of building and maintaining ontologies manually. Further, one of the tenets that the semantic Web inherits from the world wide Web is that anyone can publish anything about anything. So, the accuracy and relevance of information encountered on the semantic Web cannot be guaranteed, nor can consistency across multiple sources. How can ontology learning techniques be applied over the web based on the trust and reputation of information sources?

The purpose of the Ontology Learning Workshop will be to bring together researchers from academia and industry to exchange the latest advances in ontology learning. Our goals are to assemble the latest research results that advance the automation of ontology learning over the web and demonstrate the potential power of the technology. We will also focus on solutions to some of the challenges in learning over the open web, including the role of trust in automated ontology learning. We also seek to identify use cases to which the research can be applied.

Topics

We invite papers on the latest advances in ontology learning techniques and algorithms. We are interested in position papers that propose new methods and design patterns for automated ontology generation, linking and maintenance. In particular, we are interested in applying models of trust for ontology learning. We are also interested in applications, including requirements, lessons learned and issues with ontology learning over a network.

Participation

We encourage participation from a variety of communities, including researchers from academia and industry, standards organizations, and vendors. Users who seek interoperability solutions may be interested in how to automate ontology generation.

Format

The workshop will follow the following format. First, we will invite a leader in Ontology Learning to summarize the latest advances in this area.

We will then present a series of talks that focus on advancements in techniques to support automated ontology learning over the web. In the afternoon, a second invited speaker will discuss trust models and propose how those might be used to support ontology learning. This will be followed by a panel session on issues in ontology learning, which will be an interactive exchange between panel members and the audience on the challenges in ontology learning on the Semantic Web. Finally, we will present a session to focus on applications, including requirements, lessons learned and issues with ontology learning over a network. The workshop will close with an identified set of follow up actions and next steps in advancing automated ontology learning over the semantic Web.

Products of the workshop include a set of proceedings, as well as issues and requirements for an integrated framework for automated ontology construction and maintenance.

Submissions

We invite papers up to 8 pages in length in the style specified by AAAI. Papers should describe original completed work, work in progress, or interesting problems or use cases. Submitted papers will be fully refereed based on the originality and significance of the ideas presented as well as on technical aspects. Submissions should be made electronically to suzette@mitre.org.

Workshop Cochairs

Jugal Kalita, University of Colorado at Colorado Springs (kalita@pikespeak.uccs.edu); Leo Obrst, The MITRE Corporation (lobrst@mitre.org); Peter Patel-Schneider, Bell Labs Research (pfps@research.bell-labs.com); Suzette Stoutenburg, The MITRE Corporation (suzette@mitre.org)

Spatial and Temporal Reasoning

This workshop is intended as a forum for discussion, exchange of points of view, assessment of results and methods, and as a source of dissemination and promotion of the newest advances in the area of spatial and temporal reasoning. Recent years have witnessed remarkable advances in some of the longstanding problems of the field (for instance, new results about tractability for spatial calculi, explicit construction of models, characterization of important subclasses of relations), as well as in the development of new areas (the appearance of new integrated spatio-temporal calculi is one example, as well as the development of multi-dimensional spatial calculi). Likewise, proposals have been made to remedy some of the weak points of the symbolic approach, by introducing fuzzy versions of classical calculi, or importing non-monotonic techniques for dealing with incomplete information. At the same time, leaders in AI have sounded the need for solving real problems and making the work on representation and reasoning relevant to the real world.

Format and Attendance

The format of the workshop has been designed in accordance with the general goal of offering a structure for exchange. The program will include a number of presentations by the invitees representing several different aspects of spatial and temporal reasoning, followed by discussions.

Up to 40 participants will be selected to attend the workshop, contributing and participating in discussions. Accepted papers will be included in the workshop working notes, which will be published in the AAAI technical report series. Screening will be based on reviews and relevance to the workshop goals.

Submissions

Interested authors should format their papers according to the AAAI instructions for authors and should submit their paper by e-mail to Hans Guesgen. Papers should not exceed 10 pages and should be in the form of an extended abstract or complete research, survey, or position paper. Selection of participants will be based on relevance to the indicated focus of the workshop, clarity of the work submitted, and the strength of the research.

Workshop Cochairs

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Additional information can be found at
www.cs.auckland.ac.nz/~hans/spacetime/aaai06strws.html

Statistical and Empirical Approaches for Spoken Dialogue Systems

This workshop seeks to draw new work on statistical and empirical approaches for spoken dialogue systems. We welcome both theoretical and applied work, addressing issues such as:

- Representations and data structures suitable for automated learning of dialogue models
- Machine learning techniques for automatic generation and improvement of dialogue managers
- Machine learning techniques for ontology construction and integration
- Techniques to accurately simulate human-computer dialogue
- Creation, use, and evaluation of user models
- Methods for automatic evaluation of dialogue systems
- Integration of spoken dialogue systems into larger intelligent agents, such as robots
- Investigations into appropriate optimization criteria for spoken dialogue systems
- Applications and real-world examples of spoken dialogue systems incorporating statistical or empirical techniques
- Use of statistical or empirical techniques within multi-modal dialogue systems
- Application of statistical or empirical techniques to multi-lingual spoken dialogue systems
- Rapid development of spoken dialogue systems from database content and corpora
- Adaptation of dialogue systems to new domains and languages
- The use and application of techniques and methods from related areas, such as cognitive science, operations research, emergence models, etc.
- Any other aspect of the application of statistical or empirical techniques to Spoken Dialogue Systems.

Format

This will be a one-day workshop, consisting mainly of presentations of new work by participants. The day will also feature a keynote talk from Satinder Singh (University of Michigan), who will speak about using Reinforcement Learning in the spoken dialogue domain. Interaction will be encouraged and sufficient time will be left for discussion of the work presented. To facilitate a collaborative environment, the workshop size will be limited to authors, presenters, and a small number of other participants. Proceedings of the workshop will be published as an AAAI technical report.

Submissions and Attendance

Prospective authors are invited to submit full-length, 6-page, camera-ready papers via e-mail no later than March 17, 2006. (Note this is earlier than the standard workshop deadline.) Authors are requested to use the AAAI paper template and follow the AAAI formatting guidelines. Authors are asked to e-mail papers to Jason Williams at [jasonwilliams\[at\]gmail\[dot\]com](mailto:jasonwilliams[at]gmail[dot]com). All papers will be reviewed electronically by three reviewers. Comments will be provided and time will be given for incorporation of comments into accepted papers.

For accepted papers, at least one author from each paper is expected to register and attend. If no authors of an accepted paper register for the workshop, the paper may be removed from the workshop proceedings. Finally, authors of accepted papers will be expected to sign a standard AAAI-06 "Permission to distribute" form.

For complete contact information for Jason Williams and for a complete list of the workshop technical committee, please see the URL below.

Organizing Committee

Pascal Poupart, University of Waterloo ([ppoupart\[at\]cs\[dot\]uwaterloo\[dot\]ca](mailto:ppoupart[at]cs[dot]uwaterloo[dot]ca)); Stephanie Seneff, Massachusetts Institute of Technology ([seneff\[at\]csail\[dot\]mit\[dot\]edu](mailto:seneff[at]csail[dot]mit[dot]edu)); Jason D. Williams, University of Cambridge ([jdw30\[at\]cam\[dot\]ac\[dot\]uk](mailto:jdw30[at]cam[dot]ac[dot]uk)); Steve Young, University of Cambridge ([sjy\[at\]eng\[dot\]cam\[dot\]ac\[dot\]uk](mailto:sjy[at]eng[dot]cam[dot]ac[dot]uk))

Additional information can be found at mi.eng.cam.ac.uk/~jdw30/AAAI/