



## The Twenty-Fourth AAAI Conference on Artificial Intelligence

Atlanta, Georgia, 11–15 July 2010

Sponsored by the Association for the Advancement of Artificial Intelligence

AAAI-10 is the Twenty-Fourth AAAI Conference on Artificial Intelligence (AI). The purpose of this conference is to promote research in AI and scientific exchange among AI researchers, practitioners, scientists, and engineers in related disciplines. AAAI-10 will have multiple technical tracks, student abstracts, poster sessions, invited speakers, and exhibit programs, all selected according to the highest reviewing standards.

AAAI-10 welcomes submissions on mainstream AI topics as well as novel cross-cutting work in related areas. Topics include but are not limited to the following:

- Agents
- Cognitive modeling and human interaction
- Commonsense reasoning
- Constraint satisfaction and optimization
- Evolutionary computation
- Game playing and interactive entertainment
- Information integration and extraction
- Knowledge acquisition and ontologies
- Knowledge representation and reasoning
- Machine learning and data mining
- Model-based systems
- Multiagent systems
- Natural language processing
- Planning and scheduling
- Probabilistic reasoning
- Robotics
- Search

Papers that extend the state of the art, and explore parts of the design space of AI that are not well explored are particularly encouraged. A full list of keywords is available at the end of this document.

### Special Tracks

In addition to its main technical papers track, AAAI-10 will include seven special paper tracks: four for focused topics, one for ideas that have previously been presented elsewhere but not to a general AI audience, one for senior researchers to present broad perspectives and one for presenting new challenges to the AI community.

The *Special Track on Artificial Intelligence and the Web (AIW)* focuses on the use and extension of AI techniques, systems, and concepts for the World Wide Web.

The new *Special Track on Artificial Intelligence and Bioinformatics (AIB)* focuses on novel AI concepts, techniques, and systems to address current problems in bioinformatics and computational and systems biology.

The new *Special Track on Challenges in AI* seeks papers that issue technical challenges relating to artificial intelligence. These can be either a description of a specific technical problem, or of a broader class of problems worthy of attention.

The *Special Track on Integrated Intelligence* emphasizes research on evaluated approaches and techniques that synergistically combine abilities from distinct areas of AI to achieve intelligent behavior.

The *Special Track Physically Grounded Artificial Intelligence (PGAI)* welcomes papers in robotics, vision, activity recognition and other areas of artificial intelligence where computers interface to physical environments.

The AAAI *Nectar* (New Scientific and Technical Advances in Research) *Papers* track encourages cross-fertilization of ideas between specific areas of AI and the general AI community, and will consist of papers based on significant AI results presented at sister conferences in the last two years.

The *Senior Member Presentation Track* provides an opportunity for established researchers to give a broad talk on a well-developed body of research, an important new research area, or a thoughtful critique of trends in the field.

The topics relevant to these special tracks, and their submission details, are described in detail in their respective calls for participation. These tracks will be an integral part of the conference program and will be subject to the high standards and rigorous review that are traditional in AAAI. However, each special track will have its own submission process and review criteria, and will have its own program committee of reviewers with appropriate backgrounds.

### Author Registration

Authors must register at the AAAI-10 web-based technical paper submission site, ([aaai.confmaster.de/pages/login.php?Conf](http://aaai.confmaster.de/pages/login.php?Conf)

=AAAI2010). The software will assign a password, which will enable the author to log on to submit an abstract and paper. In order to avoid a rush at the last minute, authors are encouraged to register as soon as possible after December 1, and well in advance of the January 18 abstract deadline.

### Abstract and Paper Submission

Electronic abstract and paper submission through the AAAI-10 paper submission site is required on or (preferably) before the deadline dates listed above. We cannot accept submissions by e-mail or fax.

Papers must be in trouble-free, high resolution PDF format, formatted for US Letter (8.5" x 11") paper, using Type 1 or TrueType fonts. Papers may be no longer than 6 pages including references (regular papers) or 2 pages (short papers), and formatted in AAAI two-column, camera-ready style (see the author instructions page). Please note that these formatting instructions are for final, accepted papers; no additional pages can be purchased at the review stage. In addition, the copyright slug may be omitted in the initial submission phase. Please also refer to the instructions on how to prepare your paper for blind review.

Authors will receive confirmation of receipt of their abstracts or papers, including an ID number, shortly after submission. AAAI will contact authors again only if problems are encountered with papers. Inquiries regarding lost papers must be made no later than January 28, 2010.

### Short Papers

Short papers should only be submitted by junior researchers (the principal author has not published before in a major conference). The same work may not be submitted as a short paper and a full paper to the main technical track or any of the special tracks of the conference.

### Timetable for Authors for Regular Papers and Short Papers (Posters)

- ⇒ December 1, 2009 – January 18, 2010: Authors register on the AAAI web site
- ⇒ January 18, 2010: Electronic abstracts due
- ⇒ January 21, 2010: Electronic papers due
- ⇒ March 10-12, 2010: Author feedback about initial reviews
- ⇒ March 26, 2010: Notification of acceptance or rejection
- ⇒ April 13, 2010: Camera-ready copy due at AAAI office

## Submissions to Other Conferences or Journals

Papers submitted to this conference must not have been accepted for publication elsewhere or be under review for another AI conference. The guidelines of the AAAI policy on multiple submissions are fully detailed below and must be carefully followed.

## Review Process

Program committee members will identify papers they are qualified to review based on the information submitted electronically (the paper's title, keywords, and abstract). Their reviewing will be done blind to the identities of the authors and their institutions.

Authors will have a limited opportunity to respond to initial reviews. This author's feedback may then be taken into account in the final reviews and recommendations. The program committee's reviews will make recommendations to the senior program committee, which in turn will make recommendations to the area chairs and program cochairs. The program cochairs will make all final decisions following full consultations during the process.

## Publication

Accepted regular papers will be allocated six (6) pages in the conference proceedings; up to two (2) additional pages may be used for regular papers at a cost to the authors of \$275 per page. Accepted short papers will be allocated two (2) pages in the confer-

ence proceedings; up to one (1) additional page may be used for short papers at a cost to the authors of \$275. Final papers exceeding page limits and those violating the instructions to authors will not be included in the proceedings. Authors will be required to transfer copyright of their paper to AAAI.

Papers submitted to the Nectar or Senior Member tracks are allocated four (4) pages in the conference proceedings. Please refer to the individual calls for these programs for further details.

## Questions and Suggestions

Concerning author instructions and conference registration, write to [aaai10@aaai.org](mailto:aaai10@aaai.org). Concerning suggestions for the program and other inquiries, write to the program cochairs.

## Program Cochairs

Maria Fox  
(University of Strathclyde, UK)  
David Poole

(University of British Columbia, Canada)

A complete listing of conference track organizers, area chairs, and senior program committee members is available

## AAAI-10 Policy Concerning Submissions to Other Conferences or Journals

Papers submitted to this conference must not have been accepted for publication elsewhere or be under review for another AI

conference. (The AAAI Nectar and Challenge paper submissions have specific guidelines that can be found in their respective call for papers.)

To encourage interdisciplinary contributions, AAAI will consider work that has been submitted or presented in part elsewhere, if it is unlikely to have been seen by more than a few members of the AAAI audience (however, see the exception for Challenge Track papers). As such, papers may not be dually submitted to other AI or AI subarea conferences. Papers under submission to a journal that contain overlap with AAAI papers will be considered as long as the author specifies the dual submission and certifies that the journal submission contains significant material that is not included in the AAAI submission. Papers that have been published in full in another conference or journal will not be accepted for review. Novelty is an important criterion in the selection of papers.

AAAI requires the following:

Authors must specify the conferences and journals to which the paper has been dually submitted.

Authors must withdraw papers under review or accepted for other AI conference venues if the paper is submitted to AAAI.

Papers not dually submitted should so indicate on the title page.

For questions as to whether a given meeting is considered under the dual submission policy, or for clarifications of this policy, submitters should contact the Program Chairs.

Keywords	Knowledge Representation and Reasoning:	Learning Preferences/Rankings	AI and Social Sciences	Plan Execution and Monitoring
Constraints, Satisfiability, and Search	Action, Change, and Causality	Learning Theory	Art and Music	Planning Algorithms
Constraint Learning and Acquisition	Automated Reasoning and Theorem Proving	Machine Learning (General/other)	Cognitive Modeling	Planning under Uncertainty (Other)
Constraint Optimization	Belief Change	Neural Networks	Computer-Aided Education	Planning (General/Other)
Constraint Satisfaction (General/other)	Common-Sense Reasoning	Reinforcement Learning	Computer Games	Scheduling
Distributed Search/CSP/Optimization	Computational Complexity of Reasoning	Relational Learning	General Game Playing	Temporal Planning
Search, SAT, CSP: Evaluation and Analysis	Description Logics	Time-Series/Data Streams	Human-Computer Interaction	
Global Constraints	Diagnosis and Abductive Reasoning	Transfer, Adaptation, Multi-task Learning	Intelligent User Interfaces	<b>Reasoning Under Uncertainty</b>
Heuristic Search	Geometric, Spatial, and Temporal Reasoning	Semisupervised Learning	Interactive Entertainment	Bayesian Networks
Metareasoning and Metaheuristics	Knowledge Representation Languages	Structured Learning	Philosophical and Ethical Issues	Decision/Utility Theory
Satisfiability (General/Other)	Knowledge Representation (General/Other)	Unsupervised Learning	Security and Privacy	Graphical Models
SAT and CSP: Modeling/Formulations	Logic Programming	<b>Multiagent Systems</b>	Sustainability and AI	Probabilistic Inference
Search (General/Other): Search in Games	Nonmonotonic Reasoning	Agent/AI Theories and Architectures	Other Multidisciplinary Topics	Relational Probabilistic Models
SAT and CSP: Solvers and Tools	Preferences	Agent-based Simulation and Emergent Behavior	<b>Natural-Language Processing</b>	Sequential Decision Making
<b>Knowledge-Based Information Systems</b>	Qualitative Reasoning	Auctions and Market-Based Systems	Discourse and Dialogue	Uncertainty Representations
Information Retrieval	Reasoning with Beliefs	Coordination and Collaboration	Information Extraction	Uncertainty in AI (General/Other)
Knowledge Acquisition	Argumentation	Distributed Problem Solving	Natural Language Semantics	
Knowledge Engineering	<b>Machine Learning</b>	E-Commerce	Natural Language Summarization	<b>Robotics</b>
Knowledge-based Systems (General/Other)	Active Learning	Game Theory	Natural Language Processing (General/Other)	Behavior and Control
Linked Data Applications	Bayesian Learning	Multiagent Learning	Question Answering	Cognitive Robotics
Ontologies	Case-Based Reasoning	Multiagent Planning	Text Classification	Human Robot Interaction
Recommender Systems	Classification	Multiagent Systems (General/other)	<b>Reasoning About Plans, Processes and Actions</b>	Localization, Mapping, State Estimation
Social Networks	Data Mining	Negotiation and Contract-Based Systems	Activity and Plan Recognition	Motion and Path Planning
Web Technologies — See AIW Special Track	Ensemble Methods	Social Choice	Learning Models for Planning and Diagnosis	Multi-Robot Systems
	Evolutionary Computation	<b>Multidisciplinary Topics</b>	Markov Decisions Processes	Robotics (General/Other) — See PGAI Special Track
	Feature Selection/Construction	AI and Natural Sciences	Mixed Discrete/Continuous Planning	Verification of Robotic Systems
	Kernel Methods		Model-Based Reasoning	Vision and Perception
	Learning Graphical Models		POMDPs	<b>Unrelated to Any of the Above</b>
				Artificial Intelligence