



*Call for Participation*

# 2008 AAAI Spring Symposium Series

March 26–28, 2008

Stanford University, Stanford, California

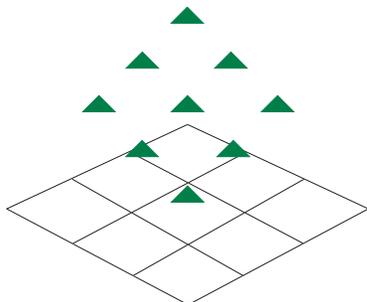
*Sponsored by the Association for the Advancement of Artificial Intelligence  
In cooperation with Stanford University*

[sss08@aaai.org](mailto:sss08@aaai.org)

[www.aaai.org/Symposia/Spring/](http://www.aaai.org/Symposia/Spring/)

## Deadlines Common to All Symposia

- ❑ October 5, 2007: Submission Deadline
- ❑ November 2, 2007: Notification of Acceptance
- ❑ January 25, 2008: Final Electronic Camera-Ready Copy Due



THE ASSOCIATION FOR the Advancement of Artificial Intelligence, in cooperation with Stanford University's Computer Science Department, is pleased to present its 2008 Spring Symposium Series, to be held Monday through Wednesday, March 26–28, 2008 at Stanford University in Stanford, California. The topics of the eight symposia in this symposium series are:

- AI Meets Business Rules and Process Management
- Architectures for Intelligent Theory-Based Agents
- Creative Intelligent Systems
- Emotion, Personality, and Social Behavior
- Semantic Scientific Knowledge Integration
- Social Information Processing
- Symbiotic Relationships between Semantic Web and Knowledge Engineering
- Using AI to Motivate Greater Participation in Computer Science

An informal reception will be held on Wednesday, March 26. A general plenary session, in which the highlights of each symposium will be presented, will be held on Thursday, March 27.

Symposia will be limited to between forty and sixty participants. Each participant will be expected to attend a single symposium. Working notes or AAAI technical reports will be prepared and distributed to participants in each symposium. In addition to invited participants, a limited number of interested parties will be able to register in each symposium on a first-come, first-served basis. Registration information will be available in December. To obtain registration information, write to:

AAAI Spring Symposium Series  
445 Burgess Drive  
Menlo Park, CA 94025-3442 USA  
Voice: 650-328-3123  
Fax: 650-321-4457  
sss08@aaai.org  
[www.aaai.org/Symposia/Spring/](http://www.aaai.org/Symposia/Spring/)

## Submission Date

Submissions for the symposia are due on October 5, 2007. Notification of acceptance will be given by November 2, 2007. Material to be included in the working notes or technical report of the symposium must be received by January 25, 2008.

Please see the appropriate section in each symposium description for specific submission requirements.

## Author Formatting Instructions

Final electronic camera copy must be submitted in AAAI style. Templates, macros, and formatting instructions are located on the AAAI web site:

- [www.aaai.org/Publications/Author/](http://www.aaai.org/Publications/Author/)

Knowledge representation in general, and rule based representations in particular, are core areas of artificial intelligence. Research in these areas strongly influences standards on the web like RuleML or the W3C standards OWL and SWRL. Advancing the theoretical underpinnings and practical impact of these technologies will be an ongoing challenge.

On the other hand, business rules and semantic business process management are growing research and application areas. Business rules strive to meet the increasing requirements of transparency and compliance—making sure that all stakeholders comply with all rules and regulations at any place and any time. Business processes are derived from the strategy of an enterprise, and define the requirements of information systems. Here, AI methods such as semantic modeling, knowledge validation, automated planning and intelligent agents will play ever increasing roles.

Both areas—business rules and business process management—make use of model driven knowledge representations, often in conjunction with application-oriented modeling tools. In the last few years, both communities have realized the potential of knowledge representations with precise semantics. For example, OMG is bringing semantics into business rules with semantics of business vocabulary and business rules (SBVR), although without making full use of the benefits and standards already achieved with AI's semantic technologies in the semantic web and ontology engineering. Similar observations can be made for other aspects of rule based systems that have already been addressed earlier within AI (for example, rule capture, inferencing, and explanation).

While standards for business process definition and execution have been put forward, there is increasing research interest in combining business processes with semantic technologies. In particular, the concept of semantic web services promises a new level of agility in process execution where AI can contribute insights and technologies from knowledge representation, reasoning and planning.

Generally, the areas of business rules, semantic technologies and business process management are addressed by different com-

munities at present. The symposium aims to bring together researchers and practitioners from all three communities to educate and inspire each other in order to avoid pitfalls and provide the basis for synergetic cooperation, with the aim of identifying and advancing the most promising points of cross-fertilization.

## Submissions

Prospective participants are invited to submit research papers (up to 12 pages) or position papers (up to 4 pages) papers, in PDF format, via the symposium website. Papers should be prepared using the format for AAAI Press proceedings or technical reports. All submissions will be reviewed by the program committee.

## Organizing Committee

Knut Hinkelmann (Chair), University of Applied Sciences Northwestern Switzerland ([knut.hinkelmann@fhnw.ch](mailto:knut.hinkelmann@fhnw.ch)); Andreas Abecker, FZI Research Center for Information Technologies, Karlsruhe ([abecker@fzi.de](mailto:abecker@fzi.de)); Harold Boley, University of New Brunswick ([harold.boleynrc.gc.ca](mailto:harold.boleynrc.gc.ca)); John Hall, Model Systems Ltd. ([john.hall@modelsys.com](mailto:john.hall@modelsys.com)); Martin Hepp, DERI Digital Enterprise Research Institute ([martin.hepp@deri.org](mailto:martin.hepp@deri.org)); Amit Sheth, Wright State University, Ohio ([amit.sheth@wright.edu](mailto:amit.sheth@wright.edu)); Barbara Thönsen, University of Applied Sciences Northwestern Switzerland ([barbara.thoenssen@fhnw.ch](mailto:barbara.thoenssen@fhnw.ch)).

## For More Information

For more information, see the supplementary symposium website at [www.fhnw.ch/iwi/aibr2008](http://www.fhnw.ch/iwi/aibr2008)

# Architectures for Intelligent Theory-Based Agents

The focus of the Architectures for Intelligent Theory-Based Agents symposium is the definition of architectures for intelligent theory-based agents. These architectures typically comprise languages, knowledge representation methodologies, reasoning algorithms, and control loops.

The motivation of the symposium is the consideration that a number of reasonably rigorous architectures have been designed, but not implemented, that allow one to prove important properties about the agents and their behavior, while other reasonably rigorous architectures have been implemented without attendant proofs about their agents.

Unfortunately, there has not yet been much interaction among the groups working on these two classes of architectures. The lack of communication contributes to slowing the development of an otherwise interesting and potentially very important area. We would like to provide a forum to bring together researchers from these two groups, promote interaction, and stimulate the investigation of the relationships among the different approaches.

We solicit papers that:

1. Describe specific architectures;
2. Compare architectures;
3. Survey the state-of-the-art.

We particularly welcome papers that include an overview of languages, knowledge representation methodologies, reasoning algorithms, and control loops used in the architectures considered. Papers on the description of specific architectures can be focused on one or more of these topics, but it is recommended that they still include an overview of the architecture. We also welcome 2-page descriptions of working systems. During the symposium, time will be allocated for demonstrations of the systems.

## Submission Information

Please send submissions (up to 6 pages in AAAI format) in PDF format to Marcello Balduccini at [aita08.aaai@gmail.com](mailto:aita08.aaai@gmail.com). Please indicate if submitting a full paper or a system description.

## Organizing Committee

Marcello Balduccini, Texas Tech University; Chitta Baral, Arizona State University; Thomas Eiter, Vienna University of Technology; Alfredo Gabaldon, National ICT Australia; Stuart C. Shapiro, University at Buffalo; Francesca Toni, Imperial College London.

## For More Information

For more information, see the supplementary symposium website at [krlab.cs.ttu.edu/~marcy/aita08](http://krlab.cs.ttu.edu/~marcy/aita08).

Although it seems clear that creativity plays an important role in developing intelligent systems, it is less clear how to model, simulate, or evaluate creativity in such systems. In other words, it is often easier to recognize the presence and effect of creativity than to describe or prescribe it. The purpose of this symposium is to explore the synergies between creative cognition and intelligent systems in a cross-disciplinary setting that fosters cooperation both in *designing creative systems* and in *creatively designing systems*. This focus on creativity in the context of intelligent systems has the potential for increasing innovation in existing fields of research as well as for defining new fields of study, including (1) artificially creative systems, (2) computational models of human creativity, and (3) intelligent systems for supporting creativity.

*Artificially creative systems:* development of new types of intelligent systems that produce or simulate creativity using novel approaches to reasoning, searching, and representing knowledge. These systems may be inspired by human creativity or by the possibilities of artificial systems beyond human capabilities.

*Computational models of human creativity:* construct cognitive models of human creativity that can be the basis for computational creativity.

*Intelligent systems for supporting creativity:* produce user interfaces, interaction design, decision support, and data modeling techniques that lead to the development of intelligent assistants that support the user in being more creative.

To guide potential participants, the following is a (representative) list of possible topics that could be included in the symposium.

- Paradigms for understanding creativity, including heuristic search, analogical reasoning, and re-representation;
- Creativity in different disciplines, including design, art, music, and science;
- Perspectives on creativity, including models of human behavior, intelligent systems, and creativity-support tools;
- The role of creativity in learning, innovation, improvisation, and other pursuits;
- Factors that enhance creativity, including conflict, diversity, knowledge, intuition, reward structures, and technologies

- Social aspects of creativity, including the relationship between individual and social creativity, diffusion of ideas, collaboration and creativity, formation of creative teams, and simulating creativity in social settings.

## Submissions

Persons interested in contributing to the symposium must submit an expression of intent by August 15. Contributions will be accepted based upon reviews of abstracts and final papers should be no longer than 8 pages (AAAI format). For questions, to express interest in participating (either as an attendee or as a contributor), or to submit abstracts, email [ventura@cs.byu.edu](mailto:ventura@cs.byu.edu).

## Organizing Committee

Dan Ventura, Brigham Young University;  
Mary Lou Maher, National Science Foundation;  
Simon Colton, Imperial College

## For More Information

For more information, see the supplementary symposium website at [axon.cs.byu.edu/CreativeAI](http://axon.cs.byu.edu/CreativeAI).

# Emotion, Personality, and Social Behavior

Recent years have witnessed increased interest in modeling emotion and personality in cognitive, agent and robot architectures. Increasingly, the focus has been on exploring the role of affective factors in social behavior. These include emotions, moods, personality traits, and attitudes. Researchers and practitioners in areas such as social robotics, game development, affective HCI, and synthetic agents are increasingly recognizing the importance of these affective factors in developing believable, realistic and robust agents, and effective human-machine interfaces.

The Emotion, Personality, and Social Behavior symposium seeks to bring together researchers in diverse relevant areas such as affective computing, believable agents, game design, robotics, social computing, and the arts, to examine the roles of emotions, moods, personality traits and attitudes in mediating social behavior among biological and artificial agents. The symposium will provide a forum for interdisciplinary interactions addressing fundamental issues in modeling affect and personality in social behavior. To facilitate interaction, moderated panels, small working groups, and open discussion will be emphasized, rather than the traditional paper sessions.

## Topics

Relevant topics include:

- How do we understand the interactions between emotion, personality, and social behavior?
- What can they tell us about cognitive / cognitive-affective architecture?
- How can we make compelling artificial characters?
- How can we make systems that facilitate social interaction among humans or among humans and artificial characters?
- How can considerations of affective factors contribute to more effective human-computer interaction in general?
- How do intrapsychic cognition-emotion interactions manifest at the interpersonal level?
- Methods and techniques for more systematic approaches to design
- What are the best approaches to developing

the necessary knowledge-bases?

- What are the best data sources for architecture development and validation?
- How can we validate models and architectures?
- What are the emerging standards in affective artificial characters, robots and systems?

## Submissions

Interested participants should submit papers of not more than 8 pages (AAAI conference format) to [Hudlicka@ieee.org](mailto:Hudlicka@ieee.org) by October 5. Submitters will receive notification of acceptance/rejection by November 2.

## Organizing Committee

Ian Horswill, Northwestern University ([ian@northwestern.edu](mailto:ian@northwestern.edu)); Eva Hudlicka, Psychometrix Associates ([Hudlicka@ieee.org](mailto:Hudlicka@ieee.org)); Christine Lisetti, Florida International University ([Christine.Lisetti@wanadoo.fr](mailto:Christine.Lisetti@wanadoo.fr)); Juan Velasquez, MIT ([jvelas@csail.mit.edu](mailto:jvelas@csail.mit.edu))

## For More Information

For more information, see the supplementary symposium website at [psychometrixassociates.com/AAAI08.html](http://psychometrixassociates.com/AAAI08.html)

Interest in and requirements for the next generation of information technology for science are expanding. *E-science* has become a growing subject of discussion covering topics such as grid computing for science and knowledge-enhanced scientific data retrieval. Within individual science areas, we are experiencing the emergence of virtual observatories such as those in astronomy, heliophysics, geophysics and solar-terrestrial physics, where virtual distributed collections of scientific data are made available in a transparent manner. The goal of such efforts is to provide a scientific research environment that provides software tools and interfaces to interoperating data archives. While initial goals for these efforts may include relatively simple uses of AI techniques, the medium and long range goals for these efforts require full scale semantic integration of scientific data, thus they present interesting motivations for and tests of artificial intelligence techniques.

Concurrent with the growing demand for next generation information technology for science is a growth in semantic technologies. While knowledge representation languages and environments continue to evolve, some have reached a stable state in terms of reaching recommendation status from standards bodies. This recommendation status has attracted the interest of startup companies as well as established companies and a number of academic and commercial tools and environments are now available for use.

In this workshop, we are interested in bringing together the semantic technologies community with the scientific information technology community in an effort to build the general semantic science information community. The workshop has multiple goals including obtaining requirements for AI researchers from the scientific community, informing the computational science community of AI research efforts that are ready for use now or with additional research, and providing a forum for current collaborative efforts to present their work.

## Topics

Topics of interest include AI-based foundations and applications in scientific integration applications such as the following:

- Knowledge representation foundations for e-science
- Ontologies and ontology environments aimed at science integration applications
- Knowledge provenance / meta data / annotation for e-science
- AI-based scientific workflow
- AI-supported virtual observatories
- AI-supported community and collaboration for scientific application
- Knowledge-based extraction of scientific data and data models
- AI-based scientific interoperability
- Scientific semantic web services
- AI-supported scientific grid computing
- Query languages for science
- AI-based mapping and merging of scientific schemas

## Submissions

Papers or extended abstracts as well as position statements are welcome. Email 2-6 page submissions in PDF format to [sski2008\\_submissions@ucar.edu](mailto:sski2008_submissions@ucar.edu). Submissions will be judged on technical merit and on potential to generate discussion and create community collaboration. The organizers will prepare a technical report summarizing the workshop.

## Chairs

Deborah L. McGuinness ([d1m@ksl.stanford.edu](mailto:d1m@ksl.stanford.edu)) and Peter Fox ([pfox@ucar.edu](mailto:pfox@ucar.edu))

## For More Information

For more information, see the supplementary symposium website at [www.ksl.stanford.edu/people/d1m/sss08](http://www.ksl.stanford.edu/people/d1m/sss08)

The label *social media* has been attached to a quickly growing number of web sites, such as blogs, wikis, Flickr, and Del.icio.us, whose content is primarily user-driven. In the process of using social media sites, users are contributing content and adding metadata in the form of: (1) *tags*: content annotation using free-form keywords; (2) *ratings*: passive or active evaluation of content; and (3) *social networks*: where users designate others as friends so as to track their activities. The connections between content, users and metadata create layers of rich interlinked data that will revolutionize information processing. New applications will include personalized information discovery; applications that exploit the “wisdom of crowds,” for example, emergent semantics and collaborative information evaluation; deeper analysis of community structure to identify trends and experts, and many others.

Social media facilitate new ways of interacting with information — what we call *social information processing*. Social information processing allows users to collaborate implicitly by leveraging the opinions and knowledge generated by others. In addition to collaborative problem solving, social information processing may lead to wholly new kinds of knowledge, that emerge from the distributed activities of many users.

The Social Information Processing symposium will bring together researchers from academe and industry, who are interested in the emergent field of social information processing. We are soliciting papers on the topics below and others related to these:

*Tagging*: While tagging helps users organize and manage their own content, collective tagging may lead to an informal classification system dubbed a “folksonomy.” How can users be helped or encouraged to tag content? What part does tagging play in the evolution of social media?

*Social networks*: Users create networks for personal use — to track friends’ activities or the opinions of respected others. Globally, an information ecosystem may arise through the interactions among users, and between users and content. A community of users interested in a specific topic may emerge over time, with linkages to other communities giving insight into relationships between topics.

*Evolution of social media*: Under what circumstances do social media and peer-production sites become successful? What implications does this have for information-sharing and learning within communities?

*Algorithms*: Before we can harness the power of the social information processing, we need new approaches to structured data analysis, specifically algorithms for synthesizing various types of data and metadata.

## Submissions

Papers or extended abstracts of maximum length of six pages in AAAI conference paper format should be submitted as e-mail attachments to [lerman@isi.edu](mailto:lerman@isi.edu) and [gutelius@ai.sri.com](mailto:gutelius@ai.sri.com). Please see the general symposium information for guidelines about the AAAI conference paper format.

## Organizing Committee

Kristina Lerman (USC Information Sciences Institute); David Gutelius (SRI International); Srujana Merugu (Yahoo Inc.); and Bernardo Huberman (HP Labs).

## For More Information

For more information, see the supplementary symposium website at [www.isi.edu/~lerman/sss07](http://www.isi.edu/~lerman/sss07).

# Symbiotic Relationships between Semantic Web and Knowledge Engineering

The challenges that have confronted the developers of intelligent systems for the past four decades are compounding as the AI community now attempts to build systems that can be distributed on the Internet in nearly endless ways. There is a strong symbiotic relationship between intelligent systems and the semantic web.

The Symbiotic Relationships between Semantic Web and Knowledge Engineering symposium (SWKE) will bring together researchers and application developers from the area of semantic web (SW) and knowledge engineering (KE). Its goal is to promote the exchange of knowledge and ideas, and to highlight possible future developments and challenges. The intention is to promote multidisciplinary research that will eventually be beneficial for both the SW and KE fields. The KE community brings three decades of extensive knowledge acquisition and intelligent systems development to the table; the SW community has much to learn from this. At that same time, the SW community has articulated a very bold research agenda and is beginning to develop some eye-catching applications as well as some important new technologies. Clearly, the SW community can offer techniques and ideas that are of considerable benefit to the KE community.

## Topics

SWKE is a highly interdisciplinary activity, and we very much hope that the contributions to the symposium will reflect this. We encourage submissions, which include the following topics:

- Ontology management systems
- Web search engines
- Building intelligent systems from components
- Mapping engines
- Cognitive support for developing widely distributed systems
- Visualization of knowledge on the semantic web

Challenging applications which clearly involve use of both the SW and the KE technologies will be particularly welcome.

The session will be a mixture of invited keynote talks, contributed presentations and

general discussions. It is likely that some time will be set aside for demonstrations, and possibly a panel discussion.

## Submissions

Extended abstracts should be submitted by 5 October. Abstracts can be up to 2 pages of 11 point font and 1.5 line spacing. PDF files by e-mail only should be sent to Derek Sleeman: [dsleeman@csd.abdn.ac.uk](mailto:dsleeman@csd.abdn.ac.uk). Queries should be directed to Edward Thomas ([ethomas@csd.abdn.ac.uk](mailto:ethomas@csd.abdn.ac.uk)).

## Cochairs

Mark Musen (Stanford Medical Informatics) ([musen@stanford.edu](mailto:musen@stanford.edu)) and Derek Sleeman (Aberdeen) ([dsleeman@csd.abdn.ac.uk](mailto:dsleeman@csd.abdn.ac.uk))

## Program Committee

Harith Alani (Southampton, UK), Jim Blythe (ISI, US), David Corsar (Aberdeen, UK), Natasha Noy (Stanford, US), Guus Schreiber (Amsterdam, NL), York Sure (Karlsruhe, Germany), Edward Thomas (Aberdeen, UK)

## For More Information

For more information, see the supplementary symposium website at [www.csd.abdn.ac.uk/~sleeman/sss-08](http://www.csd.abdn.ac.uk/~sleeman/sss-08)

# Using AI to Motivate Greater Participation in Computer Science

In the past few years, many universities have experienced a dramatic decline in undergraduate computer science enrollments. Although the dot-com bust and job off-shoring have often been cited as causes for this decline, there is also mounting evidence that computer science is being equated simply with “programming” and is losing its intellectual excitement to students who are unaware of the wide variety of options in the discipline.

In reality, the field of computer science now offers far more options than it did even a decade or two ago. Moreover, many of these diverse options are rooted in AI and are potentially quite exciting to students. Examples include robotics, game-playing, machine learning, and work overlapping computational biology and economics.

Such a rich set of AI-related directions for study provides the opportunity to greatly enhance the appeal of computer science to new students. The challenge lies in finding appropriate means for exposing students to such options, providing curriculum to stimulate their interest in the field, and disseminating successful educational materials to other educators.

The goal of this symposium is to identify ways that topics in AI may be used to motivate greater student participation in computer science by highlighting fun, engaging, and intellectually challenging developments in AI-related curriculum. We seek to examine AI-related programs and curriculum that can capture student interest early in their undergraduate years and/or be suitable for deployment at an even earlier stage in the education pipeline (for example, high schools).

The symposium aims to bring together educators, researchers, and curriculum designers to discuss successful tactics and strategies in using AI-based educational resources to help increase the intellectual excitement of CS and promote greater participation in the field. In addition to paper presentations, the symposium will include invited speakers, panels, and hands-on demonstrations.

Some specific topics that contributors are invited to address include (but are not limited to) the following:

- AI-themed assignments in introductory curricula
- The use of robotics and other tangible media in CS curricula

- Generating interest through game playing and machine learning
- Motivating CS-based multidisciplinary work with AI (for example, computational biology, algorithmic game theory, computational economics, and so on)
- The relationship of AI to the rest of the CS curriculum
- Means for disseminating educational materials outside the university
- The use of AI in special teaching environments for introductory courses (for example, Karel the Robot, Alice, and so on)
- Other planned or deployed educational initiatives involving AI

## Submission Information

We welcome prospective participants to submit either full papers (up to 6 pages), short/position papers (1–2 pages), or panel proposals (up to 2 pages, clearly indicating the names, affiliations, and email addresses for all panelists). Where appropriate, participants are strongly encouraged to demonstrate educational projects at the symposium and/or provide hands-on experiences for other symposium participants (please indicate this with paper submissions). Selected papers (both long and short) from the symposium will be published as an AAAI technical report.

All submissions should be in PDF format adhering to AAAI style, and should be sent to Mehran Sahami at [sahami@cs.stanford.edu](mailto:sahami@cs.stanford.edu).

## Organizing Committee

Mehran Sahami (chair), Stanford University; Marie desJardins, University of Maryland, Baltimore County; Zachary Dodds, Harvey Mudd College; Jeffrey Forbes, Duke University; Timothy T. Huang, Middlebury College; Caitlin Kelleher, Carnegie Mellon University; Tom Lauwers, Carnegie Mellon University; Todd W. Neller, Gettysburg College; Illah R. Nourbakhsh, Carnegie Mellon University

## For More Information

For more information, see the supplementary symposium website at [ai.stanford.edu/~sahami/SSS08/](http://ai.stanford.edu/~sahami/SSS08/)





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