Fifteenth National Conference
on Artificial Intelligence (AAAI-98)

Workshop Program

July 26-31, 1998

Madison, Wisconsin

Sponsored by the American Association for Artificial Intelligence

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AAAI is pleased to present the AAAI-98 Workshop Program. Workshops will be held Sunday and Monday, July 26-27, 1998 and Friday, July 31, at the Monona Terrace Convention Center and conference hotels. Exact locations and dates for the workshops will be determined in early spring. The AAAI-98 Workshop Program includes eighteen 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 twenty-five to fifty participants. Participation at these workshops is by invitation from the workshop organizers.

Workshop registration information will be mailed directly to all invited participants. Workshops are included in the AAAI-98 technical registration. All workshop participants must preregister for the AAAI-98 technical conference, unless the conference is cosponsored by a collocated conference. Cosponsored workshop registration is limited to registrants of cosponsoring conferences. A workshop fee will be imposed for all other workshop participants. Workshop participants must indicate which workshop(s) they will be attending. Workshop working notes will be distributed on site for participants only, and may be available after the conference as technical reports.

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 on March 11, 1998. Workshop organizers will notify submitters of acceptance by April 1, 1998. Camera-ready copy is due back to workshop organizers by April 22, 1998. Please mail your submissions directly to the chair of the individual workshop according to their directions. Do not mail submissions to AAAI. For further information about a workshop, please contact the chair of that workshop.

AAAI-98 Workshop Chair
David Leake
leake@cs.indiana.edu

Contents

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Deadlines
- March 11: *submissions due*
- April 1: *notification of acceptance*
- April 22: *camera-ready copy due*
- July 26-27 & 31: *AAAI-98 workshops*

AI and Information Integration

We are currently witnessing an explosion in the amount of information that is available on-line (for example, sources on the Internet, company-wide intranets, etc). Providing easy and efficient access to this information raises an important challenge to several fields of computer science including artificial intelligence, and provides an excellent opportunity for our field to make an impact on future technology. In particular, along with the rise in the number of information sources, there is also a growing number of systems and protocols for providing user friendly browsing of this information. Although browsing is an important form of obtaining information, it is a limited, and often time-consuming form of interaction. A challenge to artificial intelligence researchers is to develop techniques for providing better access to the wealth of available information.

The purpose of this workshop is to bring together researchers working on topics relating to information integration in Internet and intranet environments. The goals are to review the current state-of-the-art and to identify the remaining problems in which AI techniques can be applied or need to be extended to impact this application.

Topics

Topics that are related to the workshop include:

- High-level query facilities
- Modeling the contents of information systems
- Flexible approaches to selecting relevant sources
- Approaches for efficient and flexible query planning
- Learning or constructing wrappers for extracting data
- Resolving inconsistencies in identifying objects

We plan to organize the workshop to promote as much discussion as possible. As such, we plan to limit the number of paper presentations and organize the workshop around invited talks, panels, posters, and focused discussions.

Attendance

Attendance will be limited to 40 participants. To be invited, please submit either a short paper (up to 4,000 words) on the topic of the workshop or a brief statement (up to two pages) of your interests in the topic and a list of your related publications. Submissions are not limited to traditional research papers—papers that present a possibly controversial position or compare related approaches to a problem are encouraged.

The preferred method for submitting a paper or statement is to e-mail an HTTP pointer to a postscript file. Please send HTTP pointers to knoblock@isi.edu. If that is not possible, please send five copies of your paper or statement to:

Craig Knoblock
Information Sciences Institute
University of Southern California
4676 Admiralty Way
Marina del Rey, CA 90292
Voice: 310-822-1511

Workshop Committee

Oliver Duschka, Stanford University (duschka@cs.stanford.edu); Daniela Florescu, INRIA, France (Daniela.Florescu@inria.fr); Craig Knoblock (Cochair), ISI, (knoblock@isi.edu); Nicholas Kushmerick, University of Washington (nick@cs.washington.edu); Alon Levy (Cochair), AT&T Labs (levy@research.att.com)

AI and Simulation Workshop: Revisited

Five AI and simulation workshops were held in conjunction with AAAI national conferences from 1986 through 1990, addressing the common concern of traditional simulation and AI for effective modeling of real systems. While these communities approach modeling from different perspectives, each seeks to integrate the strengths of simulation's ability to compute dynamic system behaviors efficiently with AI's ability to represent and reason about complex and uncertain system models.

New developments, such as network technology, now allow greater interoperation between traditional and AI system models. The 1998 workshop will revisit the field's evolution in the intervening years since the last workshop and to prognosticate about new developments that might impact the world of modeling going forward.

Topics

Contributions should relate to some aspect of the evolution of the modeling field. Submissions will be organized into three general categories to facilitate discussion:

I   *AI Contributions to Simulation, and Vice Versa* (intelligent systems in simulation, simulation models to support knowledge-based reasoning, etc.)

II   *New Techniques* (networked, graphical, and virtual simulation systems; dynamic levels of abstraction under AI control, etc.)

III *Techniques for Building Simulations* (automatic generation of executable systems from models specified in domain-focused modeling languages, knowledge representation formalism for simulation, scenario construction, etc.)

Format

The workshop will open with a panel-led retrospective on the field. Sequential sessions that include paper presentations and discussion will follow, addressing each topic category.

Attendance

Invitations will be extended to no more than fifty persons working in the intersection of AI and simulation and having ideas or experience to contribute to the Workshop.

Submission Requirements

A variety of contributions are welcome (e.g., demonstrations). Written contributions should be succinct to facilitate discussion. Electronic submissions, either as plain-text e-mail or as a Microsoft Word enclosure, are preferred. Intentions to submit should be e-mailed to the Workshop Chair by February 15.

All communications and contributions should be directed to the workshop chair:

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Building, Retrieving and Using Generic Problem-Solving Methods

More than a decade ago, research in knowledge systems moved to focus on tasks, studying what is common between tasks in different domains. This work led to second-generation knowledge-based systems with distinct problem-solving method and knowledge base specifications. An important result of this research has been the identification of sharable problem-solving methods (PSMs). The study of PSMs provides an ontology of methods that is complementary to the factual knowledge ontology that is attracting increasing attention in AI and computer science.

This workshop will identify recent research trends in this area, focusing on ontology creation efforts and formalization of problem solving methods. We solicit papers about:

- Automatic program synthesis and formal method specification
- Problem-solver synthesis and knowledge-acquisition tools
- Applications of PSMs to large knowledge bases
- Task structures and method ontologies
- Libraries of problem-solving methods
- Architectures for the reuse of PSMs.

The goals of the workshop will be to bring together different perspectives of researchers in this area; perspectives that include Europeans efforts, research in second-generation expert systems, and research under the recent DARPA-sponsored project for high performance knowledge bases. Our aim is to initiate real collaboration and sharing of ideas and software components across participants.

All invitees will be expected to prepare a poster, and will give a very brief presentation of their work. Invitees with the best submissions will be selected in advance to give 30 minute talks.

Topics

The workshop will include discussion sessions on topics such as the following:

- Synergies between knowledge bases, ontologies and problem-solving method libraries,
- Standards for representation, exchange, and reuse of problem-solving methods
- Relationships between work on problem-solving methods and software synthesis

We aim to have a workshop of 25-35 participants, and invitation will be determined by review. To attend, please submit a paper describing work in this area to both workshop cochairs. Submissions will be accepted only via e-mail. Our formatting preferences are PDF or Microsoft Word-97. If necessary, PostScript format will be accepted. Submission format is exactly the same as AAAI-98: 6 pages of double-column, 10-point font. For details, see http://www. aaai.org/Publications/Templates/macroslink.html

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Workshop Committee

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Case-Based Reasoning Integrations

The goal of this workshop is to promote the systematic study of multimodal reasoning architectures (i.e., for intelligent systems) that have a case-based reasoning (CBR) component. This topic should interest researchers and practitioners pursuing novel methods for embedding CBR in a multimodal reasoning task in either a master, slave, or collaborating role. Our goal is to elicit and elucidate a concise characterization and categorization of CBR integrations, and then publish our analysis in a joint publication.

Topics

Topics: (including but not limited to)
- Novel CBR integrations
- Task-driven applications of existing CBR integrations
- Critical surveys of CBR integrations (e.g., model-based methods for case adaptation, using problem descriptions to create indexing schemes, CBR support for constraint-based reasoning tasks)
- Comparisons of CBR integration strategies
- Discussions on the applicability of CBR integration strategies

Descriptions of promising preliminary research or less closely related CBR research advances are also welcome. We welcome participants who wish to investigate how their tasks can benefit from CBR integrations.

Format

This one-day workshop will revolve around a group discussion of CBR integrations where we will list, characterize, categorize, and discuss the benefits of specific CBR integration strategies. Talks by invited speakers and developers of CBR integrations, along with a few paper and poster presentations, will serve as focal points for our discussion. Panel discussion(s), if any, will be based on paper submissions that identify disagreements among participants concerning the relative value of particular integration strategies. A wrap-up session will summarize the CBR integration strategies identified and their relative capabilities.

Attendance

Attendance is limited to 50 invitees.

Submission Requirements

PostScript paper submissions (compressed and uuencoded) should be formatted as detailed on our WWW page (www.aic.nrl. navy.mil/~aha/aaai98-cbrw/). Other prospective attendees are invited to e-mail a short statement that relates their interests to this workshop's goals. Accepted submissions will be distributed and included in a AAAI Press technical report. Please send submissions to:

Jody J. Daniels
jdaniels@atl.lmco.com

Workshop Committee

David W. Aha (Cochair), Naval Research Laboratory (aha@aic.nrl.navy.mil); L. Karl Branting, University of Wyoming (karl@uwyo.edu); Claire Cardie, Cornell University (cardie@cs.cornell. edu); Jody J. Daniels (Cochair), Lockheed Martin (jdaniels@atl.lmco.com)

From Control to Information/Intelligent Systems
New Application Domains of Fuzzy Logic

Domains such as biology, medicine, psychology, meteorology, ecology, political science, or economics, amongst many others, are still far from being the important and productive areas of fuzzy logic (FL) that Lotfi Zadeh prophesied more than 25 years ago.

Topics

This workshop aims to deal with the explication and demonstration of the applicability of fuzzy logic (FL) to intelligent systems; the illustratation of selected applications, discussing their enabling technology and cost/benefit trade-offs; what the state of the art in new application domains of FL is, beyond fuzzy control and its applications in industrial domains and commercial electronics appliances, which are now a classic: fuzzy case-based reasoning, decision support systems, classification (diagnostics) and prediction, natural language-based systems, intelligent user interfaces, information retrieval, machine learning using fuzzy sets, high level programming languages for fuzzy sets in AI; to what measure relevant real-world complex applications are being tackled on domains such as the ones previously mentioned; what the principal factors limiting the development of real, complete and complex applications in these domains are (outside perspectives on why FL has not significantly penetrated some application domains are welcome); and the presentation of ways of overcoming these factors, such as the synergistic role of FL within the field of soft computing.

Format

We strongly encourage that submitted papers should not only deal with showing applications already under development, or in use, but also with the presentation and discussion of ideas on how to make the qualitative leap forward so that the presence of FL in these domains enjoys the importance that, from our point of view, it merits. The workshop will last one day; 10-15 papers will be presented. Discussion periods, one or two invited lectures and a final session for summary and discussion will be celebrated.

Attendance and Submission Requirements

Attendance is limited to 50 participants (upper limit). Potential presenters should submit three hard-copies of a paper (maximum of ten pages) and one electronic PostScript version. A description of interests and background (partial list of relevant research work and publications) should be sent (two-page maximum). Selection of papers will be mainly based on relevance to the focus of the workshop, clarity of the work submitted, and significance of the research involved.

Interested individuals not sending a paper should also send this short description. Priority in the selection of these participants will take their affinity to the theme of the workshop and relative experience into account. Additional nformation can be found at www-gsi.dec.usc.es/AAAI98-Workshop.

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James F. Baldwin, University of Bristol (jim.baldwin@ bris.ac.uk); Piero P. Bonissone, General Electric, Research and Development Center (bonissone@ crd.ge.com); Michio Sugeno, Tokyo Institute of Technology

Functional Modeling/Telelogical Reasoning

Functional modeling and teleological reasoning is a maturing subdiscipline in AI focusing on abstract device understanding and device operation. A device is understood to be any world system of interest which has defined input/output behavior. The device is typically modeled as an ensemble of interacting subsystems. When a system performs according to its functional roles, desired input to the system is transformed to desired output by interacting device components.

The central objective of this workshop is to provide a forum for discussion and interaction. In particular the workshop is oriented towards multidisciplinary interaction: computer scientists, engineers, scientists, humanities, or any area in which principles of functional modeling or teleological reasoning are being applied and extended. Finally, the workshop will provide a focal point for researchers operating from a function-motivated perspective who are working to define, implement, and/or deploy software agents.

Topics

The workshop will include topics from all aspects of computational approaches to functional modeling and teleological reasoning. In addition there will be two strong focus areas for the workshop: inclusion of applications of engineers working from a functional perspective, and general application of a functional viewpoint for the development of software agents.

Format and Attendance

The workshop will be one full day. Workshop attendance will be limited to forty participants from academia, industry and government in both R&D and applications. A small number of "observer seats" will be available.

Submission Requirements

Submissions for the workshop are sought in four categories: Papers on completed or near-completed work. Limit: 4,000 words. Papers on work in progress. Limit: 1,500 words. Position papers. Limit: 1,500 words. Posters. Electronic file of the poster panels with short abstract.

In addition submitters should include a brief biography of up to two pages. Individuals applying for observer status should submit the biography.

Drop files must be in one of four formats: Adobe Acrobat 2 (preferred), HTML files, Microsoft Word 6, or PostScript (least preferred).

An electronic drop box can be found at islnotes.cps.msu.edu/domsite/ FR.nsf?OpenDatabase. This drop box will be available from 1 March 1998. Electronic mail indicating submission should be sent to Jon Sticklen, sticklen@cps.msu.edu. All submissions will be confirmed by e-mail. An extended version of this workshop call is located at islnotes.cps.msu.edu/FMTR/98cfp.html

Jon Sticklen, (Chair)
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Workshop Committee

Dean Allemang, Synquiry Technologies; Amaresh Chakrabarti, University of Cambridge; Luca Chittaro, Universita' di Udine, Italy; Jack Hodges, San Francisco State University; Ashok K. Goel, Georgia Institute of Technology; Amruth N. Kumar, Ramapo College of New Jersey; James K. McDowell, Michigan State University; Jane Malin, NASA Johnson Space Center; Chris Price, University of Wales; Jon Sticklen, Michigan State University; Yasushi Umeda, University of Tokyo.

The Grounding of Word Meaning
Data and Models

Jointly Sponsored by the Cognitive Science Society

Language begins with the acquisition of word meaning. A normal child masters tens of thousands of words over the course of the ensuing years. Understanding how this happens is fundamental to understanding how language works as well as to the development of viable computational approaches to language acquisition.

Early research on the development of word meaning focused on constraints that were internal to the linguistic system or to relationships between language and symbolic thought. More recently, however, there have been attempts to "ground" or "embody" meaning in general cognitive or perceptual processes or in the body of the organism interacting with its environment. The advent of connectionism has opened up the possibility of models that relate analog systems to discrete categories, thus of explicit models of perception and motor control. Recently some connectionists have begun to model the acquisition of word meaning, usually focusing on the way in which meaning arises out of a system perceiving the world. This work is consistent with the growing grounding or embodiment view among empirical researchers. However, psychologists, linguists, anthropologists, and biologists may be unaware of what neural networks, especially those with built-in modularity, are capable of, and AI researchers could benefit from greater familiarity with the data. The goal of this workshop is to bring together these different communities.

Format and Submission

The workshop will be organized around ten-minute position statements by approximately twenty participants. The statements will be grouped in four areas: cross-linguistic differences, categorization and conceptual structure, words and perception, and evolution. Each group of statements will be followed by a panel discussion among the presenters. The workshop will end with a one-hour open discussion of issues that arose during the different sessions.

Workshop participation will be limited to 40 people. Approximately half of the presenters will be invited by the organizers; others will be selected from among those making submissions. All prospective participants should submit a brief list of relevant work and publications. Those interested in making presentations should submit in addition a position statement of approximately 1,000 words. All submissions should be by e-mail. Submit to:

Michael Gasser
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Voice: 812 855-7078
Fax: 812 855-4829
gasser@cs.indiana.edu

Workshop Committee

Georg Dorffner, University of Vienna (georg@ai.univie.ac.at); Michael Gasser (Chair); Terry Regier, Chicago University (regier@uchicago.edu)

Integrating Artificial Intelligence and Assistive Technology

Researchers in several disciplines within AI have discovered that assistive technology (AT) offers a fertile domain for challenging research problems. Developing assistive technology for individuals with disabilities requires the construction of robust, practical systems with different constraints than systems meant to act autonomously or with able-bodied users. Areas of AI research that have influenced AT include robotics, vision, natural language processing, gesture recognition, intelligent environments, adaptive interfaces and user modeling.

Topics

Questions this workshop will address include:

- What is the state of the art in the various areas of assistive technology research?
- How can research in different areas of AT be integrated into useful products?
- What would clinicians and users like to see in future AT research?
- What are the major barriers to moving AT research from the laboratory to the marketplace?

Additional topics of interest are listed at http://www.hypercon.com/rich/workshop.html

The workshop will be divided between paper presentations by participants, invited talks, and a panel of clinicians active in AT. Papers will be selected for presentation based on quality and a desire for presentations from a variety of AT disciplines. Invited speakers will discuss what future developments in AT would be most useful for clinicians and end users. Following the invited talks will be a panel discussion in which the clinicians and workshop attendees will discuss the challenges involved in moving AT research from the laboratory to the real world.

Potential participants should submit a paper (5-8 pages) describing work in progress, completed work, or discussion of one or more of the questions above (or at the web page). Other interested researchers should submit an abstract (up to 2 pages) describing their work (which may be AI research that has not been applied to the AT domain), their interest in AT, and any specific questions or issues that they feel should be addressed in the workshop.

We encourage electronic transmission in ASCII text (preferred), PostScript, or Microsoft Word format to rsimpson@traclabs.com. Please use single-column format and 12 point type. Submissions and inquiries should be sent to:

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1012 Hercules
Houston, TX 77598
rsimpson@traclabs.com
Voice: 281-461-9525
Fax: 281-461-9550

Workshop Committee

Gerard Lacey, Trinity College Dublin (Gerard.Lacey@cs.tcd.ie); Kathleen McCoy, University of Delaware (mccoy@mail.eecis.udel.edu); Rich Simpson (Chair), Holly Yanco, MIT AI Lab (holly@ai.mit.edu)

Knowledge Sharing Across Biological and Medical Knowledge Based Systems

The amount of biological and medical information is growing at an exponential rate and overwhelming researchers and clinicians. Various groups have applied the technology of knowledge based systems to help in the effective utilization of available information. These systems have been used for applications in information retrieval, natural language processing, database integration, machine learning, data mining, and decision-making.

While there is a substantial overlap of knowledge represented in these knowledge based systems there has been very limited dialog among the various groups creating these systems. This one-day workshop explores ways in which the knowledge contained in the various systems can be shared. Specifically, the workshop goals include:

- Understanding the scope of knowledge contained in various knowledge based systems in biology and medicine.
- Understanding strengths and limitations of different knowledge representation formalisms, inference engines, and knowledge acquisition methods for biological and medical knowledge based systems.
- Identifying strategies for knowledge sharing across different development groups as we move toward more comprehensive knowledge bases for researchers and clinicians in biology and medicine.

Submissions

The workshop will consist of a number of presentations with discussion periods for ample exchange of views by participants.

Potential presenters should submit a short paper (up to 5-8 pages) addressing any of the issues relevant to the workshop goals. Others interested in participating should submit a 1-2 page statement of background and interest.

Submissions should be e-mailed in PostScript or Microsoft Word format to Dhiraj K. Pathak at dp33010@glaxowellcome.com.

Workshop Committee

Carol Bean, National Library of Medicine (bean@nlm.nih.gov); Andy Brass, University of Manchester (abrass@manchester.ac.uk); Ed Hammond, Duke University (hammo001@mc.duke.edu); Robert Jenders, Columbia University (jenders@cucis.cis. columbia.edu); Gary H. Merrill (Cochair), Glaxo Wellcome (ghm48805@glaxowellcome.com); Dhiraj K. Pathak (Cochair), Glaxo Wellcome (dp33010@glaxowellcome.com)

Learning for Text Categorization

Jointly Sponsored by the International Conference on Machine Learning

The enormous growth of on-line information has led to a comparable growth in the need for methods that help users organize such information. One area in particular that has seen much recent research activity is the use of automated learning techniques to categorize text documents. Such methods are useful for addressing problems including, but not limited to: keyword tagging, word sense disambiguation, information filtering and routing, sentence parsing, clustering of related documents and classification of documents into pre-defined topics.

The aim of this workshop is to examine recent theoretical, methodological, and practical innovations from the various communities interested in text categorization. The workshop will cover recent advances from such fields as machine learning, Bayesian networks, information retrieval, natural language processing, case-based reasoning, language modeling and speech recognition. By analyzing the different underlying assumptions and state-of-the-art methodologies used in text categorization research, as well as successful applications of this work, we hope to foster new interactions between researchers in this area.

Topics

Particular topics of interest for the workshop include, but are not limited to: text representations, classification methods, clustering methods, formal models, feature selection and data transformation methods, evaluation metrics, and innovative applications of text categorization systems.

The workshop will include paper presentations, invited talks, and numerous opportunities for discussion. Those interested in making a presentation should submit a paper (4-8 pages) describing their recent work in text categorization. Submissions regarding work in progress and preliminary results are encouraged. Those interested in participating in the workshop, but not submitting a paper, should submit a one-page abstract of their research interests in learning methods for text categorization. Attendance is limited to 50 participants.

Paper and abstract submissions can be sent via electronic mail as a PostScript document, or a URL to a PostScript document to: thorsten@informatik.uni-dortmund.de. Alternatively, 5 hard copies of the paper or abstract can be sent to:

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FB Informatik VIII
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For further information, check the WWW page: http://www.cs.cmu.edu/~mccallum/textcat.html

Workshop Committee

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The Methodology of Applying Machine Learning

(Problem Definition, Task Decomposition and Technique Selection)

Jointly Sponsored by the International Conference on Machine Learning

This workshop will focus on refining the state-of-the-art in applying machine learning (ML) techniques rather than documenting application experiences. Our objective is to analyze existing experience to extract guidelines for developing ML applications.

Topics

Topics (including but not limited to)
- Frameworks for creating ML applications and reusing parts of previously developed applications
- Methodologies for applying ML techniques
- The roles of knowledge necessary for applying ML
- Matching problem definitions to specific technique configurations
- Relating and characterizing ML techniques with problem types
- Embedding the ML application process in knowledge acquisition and system development methodologies
- Comparing ML applications with applications of related techniques
- Approaches that combine human and automated learning agents

Submissions should discuss problem definition, task decomposition, algorithm selection, and iterative characteristics in developing ML applications. Presenters will be asked to focus on a topic list to be communicated in their submission's review. Several discussion periods will be reserved, and accepted papers will be WWW-distributed beforehand to stimulate discussion.

Format

This one-day workshop is intended to attract scientists and practitioners who apply ML and related techniques to solve practical problems. We will include invited talks and papers from several pertinent scientists and practitioners. Workshop attendance is by invitation from the organizers. To attend, please submit either a paper, a one page extended abstract, or a statement of interest. Selections will be based on workshop relevance, and will contain a mix of university and industrial participants.

Attendance

Attendance is limited to 50 invitees.

Submission Requirements

Paper submissions should follow the format specified on our WWW page: http://www.aifb.uni-karlsruhe.de/WBS/AAAI98/AAAIWS98.html Papers will be reviewed by at least three members of the workshop committee for their scientific and applied relevance to the workshop's discussions. Please e-mail PostScript paper submissions, or otherwise 3-fold double sided hardcopies, to:

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Workshop Committee

David W. Aha, Naval Research Laboratory, (aha@aic.nrl.navy.mil); Robert Engels (Chair); Floor Verdenius, ATO-DLO, The Netherlands (f.verdenius@ato.dlo.nl)

Predicting the Future
AI Approaches to Time-Series Problems

Jointly Sponsored by the International Conference on Machine Learning

Many dream of being able to predict the future. In finance, accurate predictions can direct portfolio management decisions. In marketing, predicting future demand for products and services can direct capital allocation.

When crystal balls are not available, one may rely on analysis of historical data to discover predictive patterns. Temporal patterns are of particular interest because of the large number of high-profile applications that include historical time series. The goal of this workshop is to bring together AI researchers who study time-series problems, along with practitioners and researchers from related fields, in order to establish common ground.

Topics
We are interested in original research results and application solutions involving the automated analysis of time-series data. Authors are asked to address the following questions, where applicable:

- How have you formulated the time-series analysis problem? Do you build complete classification or regression models? Discover temporal patterns?
- Are you focusing on the creation of a new algorithm? On the creation of temporally oriented features?
- Have you built on related work from AI or from other communities?
- Is your method designed for a particular application? Do your results generalize?
- Have you evaluated your work?

Format
The workshop will be a one-day focused working session with several paper sessions, each followed by ample time for discussion. It will also include invited talks designed to portray time-series analysis from a wide range of perspectives (statistical, state space, etc.).

Attendance
Attendance will be by invitation. 25-50 people will be invited based on experience, as indicated by paper submissions or research summaries.

Submission Requirements
Authors should submit papers of no more than 8 pages (12-pt font) to the workshop chair. Each submission should include authors' e-mail and surface mail addresses, a short abstract, and a list of keywords. E-mailed submissions of PostScript files are preferred; if a PostScript file cannot be produced, submit four (4) printed copies. Those interested in attending without submitting a paper should submit a one-page summary of related work. For additional information, see http://www.cs.williams.edu/~andrea/aaai98.html

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Recommender Systems

Over the past few years a new kind of application, the "recommender system," has appeared, based on a synthesis of ideas from artificial intelligence, human-computer interaction, sociology, information retrieval, and the technology of the WWW. Recommender systems assist and augment the natural process of relying on friends, colleagues, publications, and other sources to make the choices that arise in everyday life. Examples of the kinds of questions that could be answered by a recommender system include: What kind of car should I buy? What web-pages would I find most interesting? What people in my company would be best assigned to a particular project team?

Topics

Some of the issues we will explore in this workshop include:

- Identifying different types of recommendations. Techniques for generating recommendations and learning user profiles. Personalized versus non-personalized recommendations.
- When does social filtering work, and when does it fail? Can we trust the recommendations received from remote, anonymous users to be trustworthy and representative?
- What happens when recommender systems meet the "real world" — how do you get a business model and a user base? What is the current state of the art?
- Social implications of recommendation systems, and how the technology relates to traditional publishers and editors.
- Visualizing recommendation spaces.

Format

The workshop will include moderated discussions, panels, and breakout sessions. We will identify three or four major common themes based on the position statements we receive (see below), and will invite people to make brief presentations on the themes as part of the discussions. The working notes will contain only position statements and selected supplementary materials. Demonstrations of working systems will be given during breaks and/or a special session of the workshop.

Attendance and Submission Requirements

Participation will be by invitation only, and will be limited to approximately 30 people. If you wish to participate, submit a position statement (1 to 2 pages) addressing an important issue or describing an interesting lesson you have learned, with a short summary of your relevant research activities. You may optionally include a copy of a paper (published or unpublished) that you have written in the area. Please indicate on your statement if you may want to present a demo, and your expected system requirements.

Send electronic submissions (preferred) to: kautz@research.att.com. (Required) position statement should be plain ascii text. Optional paper may be in text, PostScript, or Microsoft Word (.doc) formats. Send hardcopy submissions (2 copies) to:

Henry Kautz (Chair) (kautz@research.att.com)
AT&T Labs, Room A-257
180 Park Avenue
Florham Park, NJ 07932
Voice: 973-360-8310
Fax: 973-360-8970
http://robotics.stanford.edu/people/marko/rec98/

Workshop Committee

Marko Balabanovic, Stanford (marko@cs.stanford.edu); Kristian J. Hammond, University of Chicago (hammond@cs.uchicago.edu); Haym Hirsh, Rutgers University (hirsh@cs.rutgers.edu); Joseph Konstan, University of Minnesota (konstan@cs.umn.edu); Alexandros Moukas, MIT (moux@media.mit.edu); Loren Terveen, AT&T Labs (terveen@research.att.com)

Representations for Multi-modal Human-Computer Interaction

Representations for processing human communication have, mainly, been concerned with single modalities. Further advances, however, may require taking advantage of the fact that most human communication takes place in more than one modality at the same time.

A core problem in multi-modal human-computer interaction is how the information conveyed via multiple modalities is funneled into and out of a single underlying representation of meaning to be communicated. On the output side, this is the information-to-media allocation problem; on the input side, this is the cross-media information fusion problem.

The aims of this workshop are first, to assess the state of computer representations for understanding human communication in multiple modalities or communicating with humans with multiple media, and second, to encourage collaborative research in developing and using representations that facilitate multi-modal interaction.

Relevant modalities include visual, auditory, olfactory, haptic (touch), kinesthetic (motion/position-sensing), speech, gesture, facial expression, myoelectric signals, and neural inputs. Relevant media include video, text, handwriting, graphics, images, and animation. Proper communication with these modalities and media may be contingent on an underlying set of intentions, such as being informative, deceptive, persuasive, entertaining, affective, social, and so forth.

Topics

Topics of interest include (but are not limited to):
- Representations that facilitate multi-modal human communication or multimedia presentation,
- Discourse and dialogue phenomena for a wide variety of multi-modal tasks,
- User models that integrate representations of multi-modal user interaction,
- New algorithms with representations for processing multiple modalities,
- Architectures that permit the separation of application functionality from modality of user interaction,
- Papers outlining positions on these topics.

Recognizing the multidisciplinary nature of multi-modal communication, the intent of the workshop is to be as inclusive as possible. However, papers should address the topics of the workshop directly.

Format

The workshop format will be a mix of paper presentations, invited talks, panels, and break-out sessions. Paper sessions will be organized around the (above listed) workshop topics. Panel discussions or break-out sessions would follow paper sessions. Short stand-alone (e.g., laptop-based) demonstrations are welcome.

Attendance

Attendance is expected to be limited, with preference given to authors whose papers have been accepted at the workshop.

Submission Requirements

Two types of submissions are possible: a short paper, or a full paper. Short papers consist of a one or two page description of current late-breaking research, or short position papers on topics listed above. Full papers consist of a complete paper, no more than six pages, presenting completed research or full position papers.

Submissions should be two columns with 3/4 inch margins all around (formatted using the AAAI guidelines).

(A more detailed (and regularly updated) CFP can be found at: http://tigger.cs.uwm.edu/~syali/AAAI-98-Workshop/aaai-wrkshp.html.

We prefer electronic submissions (either plain text or stand-alone PostScript or Microsoft Word), which should be e-mailed to syali@tigger.cs.uwm.edu. Otherwise, send 6 copies to:

Syed S. Ali
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Workshop Committee

Syed S. Ali (Cochair), University of Wisconsin-Milwaukee; Justine Cassell, MIT; George Ferguson, University of Rochester; Susan M. Haller, University of Wisconsin-Parkside; Eduard Hovy, ISI; Robert Jacob, Tufts University; Andy Kehler, SRI International; James Lester, North Carolina State University; Susann LuperFoy, Mitre Corporation; Mark Maybury, Mitre Corporation; Susan W. McRoy (Cochair), University of Wisconsin-Milwaukee; Ethan Munson, University of Wisconsin-Milwaukee; Sharon Oviatt, Oregon Graduate Institute of Science & Technology; Stuart C. Shapiro, State University of New York at Buffalo; Chris Welty, Vassar College

Software Tools for Developing Agents

The study of various kinds of complete more or less autonomous intelligent agents of various kinds is an important subfield of AI and many software tools have been developed to support them. This workshop will discuss existing and future tools, especially integrated toolkits, with a view to providing a conceptual framework for analyzing requirements, assessing strengths and weaknesses of existing tools, and providing guidelines and suggestions for future developments. Although discussion of specific toolkits is welcome, the main focus will be on *general* issues affecting the design of toolkits and their performance rather than on specific applications or their embodiment of a particular agent theory. Papers that analyze the use of the same tools in several domains or the use of different tools in the same domain are particularly welcome.

More generally, the workshop will aim to foster a new, more global, view of future requirements which could lead to novel approaches to future toolkits. Additional information about the workshop is available at: http://www.cs.bham.ac.uk/~bsl/aaai-98

Topics

Topics of interest include: analysis and comparison of agent development tasks and toolkit types; trade-offs in designing or selecting a toolkit; interoperability issues; and evaluation criteria and instrumentation.

Format and Attendance

This workshop will include paper presentations and panel-led discussions together with a poster display. The paper presentations and panel discussions will be organized around two main themes: developing individual agents with sophisticated combinations of features, and developing multi-agent systems.

Attendance will be limited to 25-50 active participants.

Submission Requirements

Potential participants may submit either a full paper (up to 5,000 words), or an extended abstract (up to 1,000 words). Descriptions of toolkits may also be submitted as posters (one page summary). PostScript files or five hard copies of papers should be sent to:

Brian Logan
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Workshop Committee

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Workshop Program Committee

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Textual Case-Based Reasoning

In recent years, there has been a growing interest of CBR researchers in dealing with textual representations of cases. This workshop aims at bringing together the groups active in this area in order to identify major problems to be solved, alternative approaches to this task, and specific properties which distinguish textual CBR from other areas, such as information retrieval.

Topics

The overall theme of the workshop will be handling of textual documents within CBR systems. Possible topics include (but are not limited to): *Representation:* mapping of text into cases; selection of documents and portions thereof; reuse of non-textual information. *System development and maintenance:* integration of domain knowledge to lend CBR an advantage over other technologies; knowledge required to build a textual CBR system; acquisition and maintenance of this knowledge. *Evaluation of textual CBR systems. Integration issues:* relations to other technologies; what can CBR provide for these, and what should be learned? C*ase studies:* applications built and lessons learned.

Format

The workshop format will combine an invited talk, short presentations and group discussion. Each potential participant is asked to submit a position paper (see below). From these papers, the workshop chairs will select for oral presentation a relatively small number of papers staking out interesting positions. After the oral presentations, the workshop will break down into a number of discussion groups on important topics suggested by the position papers and oral presentations. After that, the groups will report back to the workshop, followed by general discussion.

David L. Waltz, Vice President, Computer Science Research, NEC Research Institute and President of AAAI, will deliver an invited talk.

Attendance

Each potential participant should submit a position paper dealing with one or more of the above topics. Based on these, the workshop chairs will select participants. Papers that stake out positions and make recommendations will facilitate more interesting small group discussions.

Submission Requirements

Potential participants are invited to submit position papers that are at most 2,500 words (five pages) in length. The accepted papers will be made available to the workshop participants as either working notes or an AAAI technical report. Submissions should preferably be made via electronic mail as UNIX printable PostScript. If electronic submission is not possible at all, then 3 hard copies should be sent to the address below.

More details can be found at www.informatik.hu-berlin.de/~lenz/AAAI98-WS/workshop.html. Submit to:

Mario Lenz (Cochair)
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Humboldt University Berlin
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Fax +49 30 20181-221
lenz@informatik.hu-berlin.de

Kevin D. Ashley, Cochair
University of Pittsburgh, Learning Research and Development Center, 3939 O'Hara Street, Room 518, Pittsburgh, PA 15260
Voice: 412-624-7496
Fax: 412 624-9149
ashley+@pitt.edu

Workshop Committee

Ralph Barletta, Inference Corporation; Mike Brown, Siemens AG; Mario Lenz; Yoshio Nakatani, Mitsubishi Electric Corporation; Stefan Wess, tecInno GmbH

Using AI for Knowledge Management and Business Process Reengineering

Issues of knowledge management and business process reengineering, such as workflow management, are among the most important topics to business in today's information technology environment. Unfortunately, to date there has been only limited use of AI to address these issues. The purpose of this workshop is to establish foundations for the use of AI in these emerging areas of corporate interest. The workshop seeks papers and panels to discuss these issues and the AI techniques being embedded and/or applied to resolve and facilitate them.

Previous research in this area has extended many AI approaches to this domain, including case-based reasoning, constraint-based approaches, expert systems and intelligent agents. The workshop will attempt to examine the trade-offs between these approaches and new approaches brought forward. One focus of the workshop will be on the problems of knowledge and information flow, control, and distribution with respect to knowledge management and business process reengineering.

Interested participants should submit a full paper (maximum 5,000 words), a panel proposal that includes a title and the names and affiliations of panel members, or a position paper (maximum 2,500 words) on a topic related to the theme of the workshop. E-mail is the preferred submission format.

Submit to:
Rose Gamble (Chair)
Department of Mathematical and Computer Sciences
University of Tulsa
600 South College Avenue
Tulsa, OK 74101
gamble@utulsa.edu
Voice: 918-631-2988
Fax: 918-631-3077

Workshop Committee

Daniel E. O'Leary (Cochair), University of Southern California (oleary@rcf.usc.edu); Mark Fox, University of Toronto (msf@mie.utoronto.ca); Mark Nissan, Naval Postgraduate School (mnissen@nps.navy.mil); Robert Plant, University of Miami (RPLANT@sba02. msmail.miami.edu); Peter Selfridge, AT&T Labs - Research (pgs@research.att.com)

Verification & Validation of Knowledge-Based Systems

AAAI-98 marks the eleventh anniversary of the first AAAI V&V workshop. Since then, a considerable amount of progress has been made in defining effective verification & validation (V&V) techniques for knowledge-based systems (KBS), integrated within KBS development methodologies. AAAI V&V workshops have been instrumental in bringing academic researchers together with industrial practitioners and have been a major focus for the KBS V&V community's research efforts.

While many problems have been solved in the last decade, there remain many unresolved problems, and the evolving nature of KBS technology generates new V&V challenges. Many of the issues involved in V&V of rule-based systems are now well understood, but few modern KBS are purely rule-based. Current challenges lie in V&V techniques for complex, hybrid knowledge-representation and reasoning systems. Increasing adoption of distributed KBS technology (for example, multiple-agent systems, distributed enterprise knowledge bases, and web-based KBS) have raised new—and hard— V&V requirements.

Topics
The workshop will focus upon the following contributions:
- Comprehensive surveys of V&V approaches and techniques.
- V&V of emerging types of KBS; e.g., multiple-agent KBS, personal assistant agents, KBS providing organizational memories, tightly-coupled knowledge/database systems, heterogeneous component-based KBS, and knowledge sharing architectures.
- Integration of V&V with other related fields, such as formal methods, software engineering, machine learning, knowledge acquisition, ontologies, etc.

Format
This one day workshop will include presentations of contributed papers, and an invited panel of researchers and practitioners who have made significant contributions over the last decade or are leading changes in emerging areas of V&V.

Attendance
Workshop attendance will be limited to 45 persons.

Submission Requirements
Electronic copies should be sent to either of the cochairs. Alternatively, three hard copies can be sent. Submissions can take any of three forms: (1) papers of no more than 12 pages, (2) two-page abstracts, or (3) requests to participate. Generally, priority will be given submissions that are the most complete and most interesting. Submit to either cochair:

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Workshop Committee

Grigoris Antoniou, Valerie Barr, Rose Gamble, Daniel E. O'Leary (Cochair), Robert Plant, Alun Preece (Cochair)