



**AAAI 2001**

**Fall Symposium Series**  
**Registration Brochure**

*November 2-4, 2001*

*Sea Crest Oceanfront Conference Center*  
*North Falmouth, Massachusetts USA*

*Sponsored by the*  
American Association for Artificial Intelligence  
445 Burgess Drive, Menlo Park, CA 94025  
(650) 328-3123  
fss@aaai.org • [www.aaai.org/Symposia/Fall/](http://www.aaai.org/Symposia/Fall/)

AAAI presents the 2001 Fall Symposium Series, to be held Friday through Sunday, November 2-4, 2001 at the Sea Crest Oceanfront Conference Center. The topics of the five symposia in the 2001 Fall Symposium Series are:

- Anchoring Symbols to Sensor Data in Single and Multiple Robot Systems
- Emotional and Intelligent II: The Tangled Knot of Social Cognition
- Intent Inference for Collaborative Tasks
- Negotiation Methods for Autonomous Cooperative Systems
- Using Uncertainty within Computation

The highlights of each symposium will be presented at a special plenary session. Working notes will be prepared and distributed to participants in each symposium, but will not otherwise be available unless published as an AAAI Technical Report or AAAI Press edited collection.

Each symposium will have limited attendance. Participants will be expected to attend a single symposium throughout the symposium series. In addition to participants selected by the program committee of the symposia, a limited number of other interested parties will be allowed to register in each symposium on a first-come, first-served basis. To reg-

ister, please fill out the registration form, and send it along with payment to:

- 2001 Fall Symposium Series  
AAAI  
445 Burgess Drive  
Menlo Park, CA 94025
- Telephone: (650) 328-3123\*
- Fax: (650) 321-4457\*
- E-mail: [fss@aaai.org](mailto:fss@aaai.org)\*

\*Credit card orders only, please. Please note that there are security issues involved with the transmittal of credit card information over the internet. AAAI will not be held liable for any misuse of your credit card information during its transmittal to AAAI.

This document is also accessible from [www.aaai.org/Symposia/symposia.html](http://www.aaai.org/Symposia/symposia.html).

## Tentative Program Schedule

*(subject to change)*

### Friday, November 2

9:00 AM – 5:30 PM: *Symposia sessions*

6:00 PM – 7:00 PM: *Reception*

### Saturday, November 3

9:00 AM – 5:30 PM: *Symposia sessions*

6:00 PM – 7:00 PM: *Plenary session*

### Sunday, November 4

9:00 AM – 12:30 PM: *Symposia sessions*

Registration will be located in the lobby of the conference center.

# Anchoring Symbols to Sensor Data in Single and Multiple Robot Systems

The focus of this symposium is on the connection between abstract- and physical-level representations of objects in autonomous robotic systems. We call *anchoring* the process of creating, and maintaining in time, this connection. Anchoring can thus be seen as a special case of symbol grounding where the symbols denote physical objects.

Anchoring is required in any robot that uses a symbolic representation. A typical example is to identify and track a specific person in a crowd given a linguistic description. Anchoring must also occur in multiple robot systems whenever the robots exchange information via symbolic representations. We talk in this case of *grounded communication*. Grounded communication is also needed for efficient human-robot cooperation.

Our main preoccupation is a practical one. All existing robotics systems that comprise a symbolic reasoning component implicitly incorporate a solution to the anchoring problem. However, this solution is typically developed on a system by system basis on a restricted domain. The ambition of this symposium is to create an interdisciplinary community that will develop a general theory of anchoring. The emphasis will be on the computational aspects of anchoring, including the functionalities and representations needed to perform it.

Topics of interest include:

- General theories of anchoring
- Action grounding
- Perceptual attention
- Visual tracking
- Grounded communication
- Cooperative perception
- Symbol grounding
- Architectures for anchoring
- Anchoring in natural systems
- Theories of linguistic reference

The symposium will include presentations of technical papers, invited talks, and a round table discussion. In addition, all symposium participants will have the opportunity to present their ideas at an informal “rump” session. Plenty of time will be dedicated to joint discussions.

Detailed information about this symposium can be found at [www.aass.oru.se/Agora/FSS01/](http://www.aass.oru.se/Agora/FSS01/).

## Organizing Committee

Silvia Coradeschi (cochair), Orebro University, Sweden; Alessandro Saffiotti (cochair), Orebro University, Sweden; Kurt Konolige, SRI International; Benjamin Kuipers, University of Texas at Austin; Yves Lesperance, York University, Canada; Maja Mataric, University of Southern California; Luc Steels, Free University of Brussels, Belgium

# Emotional and Intelligent II: The Tangled Knot of Social Cognition

According to some theories, emotions come into play as soon as we consider individuals in interaction with their social environment. For some researchers, emotions are at the very heart of what being social means. In the last years, the AI community has echoed the importance of emotions in social interactions in a growing number of applications: expressive and social robots, animated and storytelling characters with “feelings,” expressive interfaces, systems for human-computer emotional interaction, etc. This symposium proposes a multi-disciplinary framework where researchers can exchange ideas and reflect on the motivations, scientific grounds, and practical consequences of these efforts.

The symposium investigates the role of emotions in grounding interpersonal behaviors and social cognition, from the perspective of both, the individual and the collectivity. The main focus is on natural and artificial agents (in all sorts of embodiments) in social environments, and on the possibilities for cross-fertilization between research in artificial emotions and studies of emotions in animals and humans. Issues to be discussed at the symposium include:

- Synthesizing, expressing, and eliciting emotions
- Perceiving other’s and own emotions, perceiving the others through emotions
- Embodiment and biological aspects of emotions

- Emotions in (social) cognition and learning
- Developmental and cultural perspectives of emotions
- Intra- and inter-individual regulation in social interactions,
- Emotion and motivation in adaptation and behavior
- Origins, evolution, and emergence of emotional phenomena
- Emotions, communication, and language
- Emotional disorders, emotions and social interactions in therapy
- Philosophical aspects
- Applications

Interaction among participants will be fostered, and ample time will be devoted to discussion. Presentations will be short and organized around particular topics. Poster sessions will allow for more detailed and technical discussions. Researchers from fields other than AI (e.g., arts, biology, ethology, humanities, neurosciences, philosophy, psychology, social sciences) are encouraged to participate. More information about the symposium can be obtained from [homepages.feis.herts.ac.uk/~comqlc/eifs01.html](http://homepages.feis.herts.ac.uk/~comqlc/eifs01.html)

## Organizing Committee

Lola Canamero (chair), University of Hertfordshire; Cynthia Breazeal, MIT; Kerstin Dautenhahn, University of Hertfordshire; Philippe Gaussier, ENSEA, France; Eva Hudlicka, Psychometrix, USA; Susanne Kaiser, University of Geneva, Switzerland; Andrew Ortony, Northwestern University; Paolo Petta, OEFAL, Austria; Rosalind Picard, MIT.

# Intent Inference for Collaborative Tasks

As decision support systems become more capable of autonomous performance, they must engage more fully with human operators (and other autonomous entities), negotiating task assignments, anticipating near-term needs, and proactively providing information, analysis, and alerts. A body of work in intent inference has shed much light on how automation systems can be given some measure of understanding of their users' tasks and needs. But decision support systems are seldom limited to a single operator, and research into *team* intent-inference is therefore assuming greater importance.

Understanding team-level intent requires a multidisciplinary approach informed by team dynamics and workflow, workplace procedures, cognitive task analysis, reasoning under uncertainty, and intelligent collaborative agents. By bringing together researchers from the intent inference community, those engaged in the study of collaboration, and prominent players in the application domains, this symposium will help foster the emerging discipline of team intent inference and promote the development of intent-aware decision support for multi-operator complex systems.

Specific topics to be discussed at the symposium include:

- Intelligent agents that interact with users based on intent inference
- Task analysis at the team or workplace level

- Monitoring user actions to track progress and manage dialog
- Applying team intent inference to decision support, human-agent teaming, attention focusing/alerting, and information filtering/retrieval.

The symposium will present a survey of representative works in progress and foster a meaningful dialog to promote research agenda and collaboration along lines of shared interest. A presymposium discussion of "visions" will help set the stage for the on-site schedule, which will include invited presentations and breakout sessions that synthesize emerging concepts and approaches, assess application needs, and suggest areas for fruitful research.

## Organizing Committee

Benjamin Bell (chair), Lockheed Martin Advanced Technology Laboratories; Scott Brown, Air Force Research Laboratory; Todd J. Callantine, NASA Ames Research Center; Neal Lesh, Mitsubishi Electric Research Laboratories (MERL); Eugene Santos (cochair), University of Connecticut; Sriprakash Sarathy, Clark Atlanta University.

# Negotiation Methods for Autonomous Cooperative Systems

Negotiation is one important mechanism through which groups of autonomous systems can reach agreement, in a distributed fashion, on the sharing of limited resources or the allocation of tasks. Through negotiation, groups can form cooperative teams, in a bottom-up fashion, to resolve a variety of constraint satisfaction problems. In cooperative settings, negotiating entities must be able to evaluate local constraints in a way that respects global constraints as much as possible. Many competing protocols have been put forward for this purpose, such as auctions, contract nets, bargaining systems, and argumentation systems.

The symposium studies the latest developments in cooperative negotiation. Topics to be presented include both formal approaches to cooperative negotiation and implementations of complex negotiating systems in a variety of applications.

The symposium is scheduled to provide extensive discussion time and group interactions. The symposium consists of twenty paper presentations, topic-oriented panel discussions, and invited talks. For more details, contact Costas Tsatsoulis (tsatsoul@ittc.ukans.edu)

## **Organizing Committee**

Costas Tsatsoulis (chair), The University of Kansas (tsatsoul@ittc.ukans.edu); Michael Huhns, University of South Carolina (huhns@ece.sc.edu); Victor Lesser, University of Massachusetts, Amherst (lesser@cs.umass.edu); Robert Neches, ISI (rneches@isi.edu); Charlie Ortiz, SRI (ortiz@ai.sri.com); Leen-Kiat Soh, The University of Kansas (lksoh@ittc.ukans.edu)

# Using Uncertainty Within Computation

To reason about complex computational systems, researchers are starting to borrow techniques from the field of uncertainty reasoning. In some cases, this is because the algorithms contain stochastic components. For example, Markov decision processes are now being used to model the trajectory of stochastic local search procedures. In other cases, uncertainty is used to help model and cope with the stochastic nature of inputs to (possibly deterministic) algorithms. For example, Monte Carlo sampling is used to deal with uncertainty in game playing programs, while probability distributions are used to model variations in runtime performance. Uncertainty and randomness have also been found to be a useful addition to many deterministic algorithms. And a number of areas like planning, constraint satisfaction, and inductive logic programming, which have traditionally ignored uncertainty in their computations are waking up to the possibility of incorporating uncertainty into their formalisms. The goal of this symposium is to encourage symbiosis between these different areas. The areas of AI represented may include (but are not limited to) agents, constraint programming, decision theory, game playing, knowledge representation and reasoning, learning, planning, probabilistic reasoning, qualitative reasoning, reasoning under uncertainty, and search. Possible topics include (but are not limited to):

- Incorporating uncertainty into existing frameworks
- Modeling uncertainty in computation
- Monte Carlo sampling
- Probabilistic analysis and evaluation of algorithms
- Randomization of algorithms
- Stochastic vs. systematic algorithms
- Utility and computation

We anticipate having funds from the Institute of Intelligent Information Systems (IISI) to support doctoral students (and others with limited access to travel funds) to attend the Symposium. Please see the symposium web site at [www-users.cs.york.ac.uk/~tw/fall/index.html](http://www-users.cs.york.ac.uk/~tw/fall/index.html) for details about how to apply for these grants.

## Organizing Committee

Tom Dean, Brown University; Marek Druzdel, University of Pittsburgh; Matt Ginsberg, CIRL; Carla Gomes (cochair), Cornell University, [gomes@cs.cornell.edu](mailto:gomes@cs.cornell.edu); Holger Hoos, University of British Columbia; Eric Horvitz, Microsoft; Michael Jordan, University of California, Berkeley; Henry Kautz, University of Washington; Scott Kirkpatrick, IBM; Michael Littman, AT&T; Stephen Muggleton, University of York; David Poole, University of British Columbia; Stuart Russell, University of California, Berkeley; Bart Selman, Cornell University; Stephen Smith, CMU; Toby Walsh (cochair), University of York, [tw@cs.york.ac.uk](mailto:tw@cs.york.ac.uk)

# Registration and General Information

**ALL ATTENDEES MUST PREREGISTER.** Each symposium has a limited attendance, with priority given to invited attendees. All accepted authors, symposium participants, and other invited attendees must register by September 7, 2001. After that period, registration will be opened up to the general membership of AAAI and other interested parties. All registrations must be postmarked by September 21, 2001.

The conference registration fee includes admission to one symposium, one copy of the working notes from the symposium, a continental breakfast each morning, mid-morning coffee breaks, lunch Friday and Saturday, afternoon coffee breaks with a light snack Friday and Saturday, and the opening reception.

Checks (drawn on US bank) or international money orders should be made out to AAAI. VISA, MasterCard and American Express are also accepted. Please fill out the attached registration form and mail it with your fee to:

AAAI 2001 Fall Symposium Series  
445 Burgess Drive  
Menlo Park, CA 94025

If you are paying by credit card, you may e-mail the form to [fss@aaai.org](mailto:fss@aaai.org) or fax it to (650) 321-4457. Registration forms are also available on AAAI's web page: [www.aaai.org/Symposia/symposia.html](http://www.aaai.org/Symposia/symposia.html).

*Please note: All refund requests must be in writing and postmarked by September 28, 2001. No refunds*

will be granted after this date. A \$25.00 processing fee will be levied on all refunds granted.

When you arrive at Sea Crest, please pick up your complete registration packet at the registration area in the lobby of the Conference center.

Registration hours will be:

**Thursday, November 1**

7:00 PM - 8:30 PM

**Friday, November 2**

8:00 AM - 5:00 PM

**Saturday, November 3**

8:00 AM - 5:00 PM

**Sunday, November 4**

8:00 AM - 11:00 AM

## Accommodations

For your convenience, AAAI has reserved a block of rooms at Sea Crest. The rate is \$84.00 plus 9.7% tax for a single or double room. Symposium attendees must contact Sea Crest directly. Please request the group rate for AAAI's Fall Symposium Series when reserving your room. The cut-off date for reservations is October 1, 2001. Reservations after this date will be accepted based on availability at the negotiated group rate. All reservations must be secured by one night's deposit per room, via credit card or check. If an individual reservation is cancelled eight days or more prior to arrival, the deposit is refunded, less a \$10.00 service charge. If an individual reservation is cancelled seven days or less prior to arrival, or does not arrive



on the specified dates, the reservation is cancelled for all nights, and the deposit will be forfeited.

**Sea Crest Oceanfront  
Conference Center**  
Old Silver Beach on Cape Cod  
350 Quaker Road  
North Falmouth, MA 02556-2943  
*Group Reservations: 800-225-3110 or  
508-540-7602  
Fax: 508-540-7602*

### **Air Transportation & Car Rental**

AAAI has selected Stellar Access, Inc. (SAI) as the official travel agency for this meeting. Call 800-929-4242 and ask for Group #428, or visit [www.stellaraccess.com](http://www.stellaraccess.com), register if you are a first-time user, and refer to Group 428. If you book on-line, you will pay no transaction fee. You will receive the following discounts or the lowest available fares on any other carrier: US Airways—save 5 to 10 percent on lowest applicable fares with an additional 5 percent off with a 60 day advance purchase. All rules and restrictions apply. Offer good for travel October 30 – November 7, 2001. Hertz Rent A Car rates start as low as \$40/day for economy models and \$184/week with unlimited free mileage.

*Reservation hours: M-F 6:30am-5:00 PM Pacific Time. Call SAI at 800-929-4242. Outside US & Canada: 619-232-4298 / fax 619-232-6497. A \$10 transaction fee will be applied to all tickets purchased via phone ser-*

vice. If you call direct or use your own agency, refer to these codes:

- US Airways: 1-877-874-7687  
GF# 48142042
- Hertz 1-800-654-2240  
CV #02EZ0010

### **Parking**

Parking is available at the Sea Crest at no charge for the duration of your stay.

### **Arrival by Air**

The Sea Crest is approximately one hour and fifty minutes from T. F. Green Airport in Warwick, Rhode Island, and approximately one hour and forty minutes from Logan International Airport in Boston, Massachusetts. There are frequent connecting flights to Hyannis from Boston, Newark, and New York City.

### **Ground Transportation**

This information is the best available at time of printing. Fares and routes change frequently. Please check by telephoning the appropriate numbers below for the most up-to-date information.

### **Transportation from Airport**

Sea Crest recommends Bonanza Bus, which provides regular transportation between Falmouth and Logan Airport in Boston, Massachusetts. The fare is \$21.00 one way and \$38.00 round trip. No reservations are necessary. Bonanza Bus stops at all Logan airport terminals, making eight round trips daily. Bonanza Bus may be contacted at 508-548-7588. Sea Crest

does not recommend taking public transportation from Rhode Island due to multiple stops and transfers.

**Taxi**

Taxis are readily available in Falmouth for transportation to Sea Crest. The approximate fare is \$16.00–18.00 one way.

**Arrival by Car**

Because of the location of the conference center, cars are recommended for convenience in accessing restaurants or attractions on Cape Cod.

*From Metropolitan Boston area:* Southeast Expressway to Route 3, take first exit on rotary at Sagamore Bridge to Route 6 West, take first exit at Bourne Bridge rotary to Route 28 (Falmouth and the Islands), to Bourne Bridge over Cape Cod Canal.

*From Points North and West of Boston:* Take Interstate 495 South, Route 25 South to Bourne Bridge over Cape Cod Canal.

*From Providence and New York:* Interstate 95 to Providence, Interstate 195 East from Providence to Route 25 South to Bourne Bridge over Cape Cod Canal.

*From Bourne Bridge and Cape Cod Canal:* Route 28 (Falmouth and the Islands) to Route 151 exit, left at bottom of exit ramp, left at traffic signals (Route 28A South) one mile to rotary, take first exit than 1 mile to Sea Crest.

**Disclaimer**

In offering the Sea Crest Conference Center, USAirways, Hertz Rental Car, (hereinafter referred to as “Supplier”) and all other service providers for the AAAI Fall Symposium Series, the American Association for Artificial Intelligence acts only in the capacity of agent for the Supplier which is the provider of hotel rooms and transportation. Because the American Association for Artificial Intelligence has no control over the personnel, equipment or operations of providers of accommodations or other services included as part of the Symposium program, AAAI assumes no responsibility for and will not be liable for any personal delay, inconveniences or other damage suffered by symposium participants which may arise by reason of (1) any wrongful or negligent acts or omissions on the part of any Supplier or its employees, (2) any defect in or failure of any vehicle, equipment or instrumentality owned, operated or otherwise used by any Supplier, or (3) any wrongful or negligent acts or omissions on the part of any other party not under the control, direct or otherwise, of AAAI.

## Registration Form 2001 AAAI Fall Symposium Series

**A**LL ATTENDEES MUST PREREGISTER  
Please complete in full and return to AAAI, postmarked by September 7, 2001 (invited attendees) or by September 21, 2001 (general registration). *Please print or type:*

First name \_\_\_\_\_ Last name \_\_\_\_\_

Company or Affiliation \_\_\_\_\_

Address \_\_\_\_\_ Home  or Business

City \_\_\_\_\_ State \_\_\_\_\_

Zip or postal code \_\_\_\_\_ Country \_\_\_\_\_

Daytime telephone \_\_\_\_\_ E-mail address \_\_\_\_\_

### Symposium

*(Please check only one)*

- 1. Anchoring Symbols to Sensor Data in Single and Multiple Robot Systems
- 2. Emotional and Intelligent II: The Tangled Knot of Social Cognition
- 3. Intent Inference for Collaborative Tasks
- 4. Negotiation Methods for Autonomous Cooperative Systems
- 5. Using Uncertainty within Computation

### Fee

Member: \$ 230.00       Nonmember: \$ 295.00

Student Member \$ 110.00     Nonmember student: \$ 135.00

*(Students must send legible proof of full-time student status.)*

TOTAL FEE *(Please enter correct amount.)*    \$ \_\_\_\_\_

### Method of Payment

All e-mail and fax registrations must be accompanied by credit card information.  
Prepayment is required. No purchase orders will be accepted. *(Please circle one)*

AMERICAN EXPRESS    MASTERCARD    VISA    CHECK    MONEY ORDER

Credit card number \_\_\_\_\_ Expiration date \_\_\_\_\_

Name (as it appears on card) \_\_\_\_\_

Signature \_\_\_\_\_

Thank you for your registration! Please mail completed form with your payment to:

AAAI Fall Symposium Series • 445 Burgess Drive • Menlo Park, CA 94025 or fax with credit card information to 650-321-4457.

**Please Note:** Registration cannot be processed if information is incomplete or illegible. Requests for refunds must be received in writing by September 28, 2001. No refunds will be granted after this date. A \$25.00 processing fee will be levied on all refunds granted.

### For Office Use Only

Check Number \_\_\_\_\_ Amount \_\_\_\_\_ Received \_\_\_\_\_

