



AAAI 2000

Fall Symposium Series
Registration Brochure

November 3-5, 2000

Sea Crest Oceanfront Resort & 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/

AAAI presents the 2000 Fall Symposium Series to be held Friday through Sunday, November 3-5, 2000 at the Sea Crest Oceanfront Conference Center. The topics of the five symposia in the 2000 Fall Symposium Series are:

- **Building Dialogue Systems for Tutorial Applications**
- **Learning How to Do Things**
- **Parallel Cognition for Embodied Agents**
- **Simulating Human Agents**
- **Socially Intelligent Agents: The Human in the Loop**

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

- 2000 Fall Symposium Series
AAAI
445 Burgess Drive
Menlo Park, CA 94025
- Telephone: (650) 328-3123*
- Fax: (650) 321-4457*
- Email: 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.

Tentative Program Schedule

(subject to change)

Friday, November 3

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

6:00 PM – 7:00 PM: *Reception*

Saturday, November 4

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

6:00 PM – 7:00 PM: *Plenary session*

Sunday, November 5

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

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

Building Dialogue Systems for Tutorial Applications

Studies of human tutoring have argued the importance of conversation between the student and the tutor in making tutoring interactions successful, suggesting that intelligent tutoring systems will be more effective if they can engage in dialogues with students. Although building highly interactive dialogue-based systems presents a wide range of new computational challenges, recent advances in computational linguistics have made it possible to make significant strides towards the development of dialogue-based tutors in both educational and industrial settings. Already several large-scale efforts towards the construction of such systems are in progress at a variety of universities worldwide, many of which will be represented at the symposium.

The overall focus of this symposium will be the design, implementation, and evaluation of effective dialogue-based intelligent tutoring systems (ITSs). We received many high-quality submissions and are looking forward to an exciting symposium covering a wide range of issues. The working notes include papers on architectures for dialogue-based ITSs, approaches to dialogue management, robust language understanding techniques, practical approaches to natural language generation, authoring tools, student modeling, analysis of human tutorial dialogues, and system evaluation.

We invite participation from researchers in many areas of artificial

intelligence, including intelligent tutoring system development, computational linguistics, planning, user and student modeling, knowledge representation and probabilistic reasoning. We also encourage participation from the related fields of cognitive science, applied cognitive psychology and educational technology.

Our format will emphasize discussion and group participation through panel discussions and demo and poster sessions describing both implemented systems and work in progress. Our hope is that this symposium will solidify the community of researchers developing tutorial dialogue systems by facilitating the development of a shared vision and promoting the development of shared resources.

Organizing Committee

Carolyn Penstein Rose (cochair), University of Pittsburgh; Reva Freedman (cochair), University of Pittsburgh; Vincent Aleven, Carnegie Mellon University; Sandra Carberry, University of Delaware; Michael Glass, Illinois Institute of Technology; Art Graesser, University of Memphis; Nancy Green, University of North Carolina/Greensboro; Pamela W. Jordan, University of Pittsburgh; James Lester, NCSU; Susan McRoy, University of Wisconsin/ Milwaukee; Ronnie Smith, East Carolina University; Ingrid Zukerman, Monash University

Learning How to Do Things

Knowing how to do things is an important category of knowledge underlying many kinds of intelligent behavior in artificial agents, such as critiquing, advice giving, tutoring, collaboration, and delegation. In the current state of the art, most of this procedural knowledge is encoded manually by a single person (or a small team) who needs to be expert in both the task domain and the appropriate knowledge representation formalisms. This is a serious bottleneck in the development of these kinds of systems.

The focus of this symposium is on how to automate or partially automate the acquisition of procedural knowledge, namely, indexed collections of what are variously called macros, plans, procedures, or recipes for action. The techniques for acquiring this knowledge may depend on many variables, including:

- size of the domain (e.g., number of recipes)
- amount of input data
- number of steps in a typical task
- type of tasks (e.g., analysis versus synthesis)
- number of agents involved (e.g., one, two, or many)
- type of agents involved (e.g., human versus computer)
- intended use of the knowledge (e.g., acting, critiquing, etc.)
- degree of supervision (e.g., teaching versus unsupervised learning)
- level of abstraction (e.g., primitive operations versus high-level goals)
- degree of initiative (e.g., learning by experimentation versus passively)

Because of this problem diversity, we hope to include participants in the workshop from a number of research areas, including:

- programming by demonstration (highly supervised, small amount of input data)
- data mining (unsupervised, large amount of input data)
- case-based problem solving (cases are like recipes, especially if abstracted)
- machine learning (range of techniques)
- cognitive and social sciences (e.g., studies of human instructional dialogues)
- instructable agents

Organizing Committee

Mathias Bauer (cochair), DFKI (bauer@dfki.de); Charles Rich (cochair), Mitsubishi Electric Research Labs (rich@merl.com, cochair); Andrew Garland, Brandeis University; Abigail Gertner, University of Pittsburgh; Eric Horvitz, Microsoft Research; Tessa Lau, University of Washington; Neal Lesh, Mitsubishi Electric Research Labs; James Lester, North Carolina State University; Henry Lieberman, MIT; Jeff Rickel, USC/ISI; Candace Sidner, Lotus Development Corporation

Parallel Cognition for Embodied Agents

The aim of this symposium is to draw together researchers working in the society of mind, behavior-based robotics, connectionism, cognitive science, and neuroscience to discuss advances in, and prospects for, a theory of high level cognition that is compatible with computational and neurophysiological constraints, and with grounding in an environment through sensors and actuators. We will discuss issues, such as:

- How can high-level cognition be efficiently grounded in interaction with the environment? Many of the most successful robot architectures are based on parallel collections of experts (behaviors, schemas, agents, etc.). Can these techniques be extended to more “cognitive” tasks, or does symbolic reasoning require a fundamentally different model of computation? If so, how do we ground that model in sensors and actuators?
- How can parallel systems be extended to more expressive representations? The binding problem limits most parallel systems to propositional reasoning. How much binding (and therefore how much predicate inference) can we plausibly implement in parallel?
- What kinds of operations can plausibly be parallelized? Many common AI algorithms, such as unification, are believed to be unparallelizable. Does this mean we should reject them, use limited versions that are parallelizable, or simply accept the seriality of these computations?
- When is parallelism really necessary? While human cognition is clearly parallel over short time scales, it is often argued that it looks serial over medium-to-long time scales (>100ms). Is

this where the real action is?

- Should parallel inference systems even look like classical AI systems? Many systems try to simulate the operation of classical AI inference systems using parallel hardware. Other systems (e.g. society of mind) adopt architectures and semantics that are fundamentally different from conventional serial inference systems.
- What does the biological evidence really say about high-level cognition in humans and other animals?

Organizing Committee

Ian Horswill (cochair), Northwestern University (ian@cs.northwestern.edu); Alan Schultz (cochair), Naval Research Laboratory (schultz@aic.nrl.navy.mil); Brian Scassellati, MIT Artificial Intelligence Laboratory (scaz@ai.mit.edu)

Simulating Human Agents

Simulated human agents are a key software component in many kinds of applications including, e.g., simulation-based training, games and other forms of interactive entertainment, and simulation-based tools for analyzing human-machine system designs. Creating sufficiently powerful and realistic human agents presents several challenges. To get the agent to behave capably in dynamic, time-pressured and otherwise demanding application environments requires adapting state-of-the-art AI techniques. Making the human model accurate or believable requires identifying and incorporating relevant human performance data. Finally, reusable, well-documented software architectures are needed to reduce the time and expertise needed to construct new human agent simulations.

The symposium will address practical questions about the incorporation of existing AI and human performance modeling technologies into applications such as those listed above. Questions to be addressed during the symposium include:

- What AI technologies are most relevant for simulating human behavior? How should these be improved or adapted?
- What aspects of existing human modeling architectures are most/least helpful for building new applications? How can they be improved to become more useful to applications developers?
- Which aspects of human behavior are most worth capturing in a human modeling architecture, generally or for

a given application area?

- What relevant scientific findings are “ready” to be incorporated into general-purpose human simulation tools? How should one best go about filling in the gaps where appropriate scientific findings do not yet exist?

Organizing Committee

Michael Byrne, Rice University; Ron Chong, Soar Technology; Michael Freed (chair), NASA Ames Research Center; Randy Hill, USC/ISI; Lewis Johnson USC/ISI; John Laird, University of Michigan; Frank Ritter, Pennsylvania State University

Socially Intelligent Agents: The Human in the Loop

The highly interdisciplinary area of socially intelligent agents has attracted a number of active researchers who model, design and analyze agents (software or robotic), which behave socially. Much of this work is strongly inspired by forms of natural social intelligence characteristic of humans. This symposium will address recent technological, methodological and theoretical developments in the field of socially intelligent agents (SIA's), as well as discuss social and cultural issues, and limitations and problems of socially intelligent agents. A focus will be the issue of the "human-in-the-loop."

Both agents and humans can have different roles during agent-human interaction, e.g. as designers, users, observers, assistants, collaborators, competitors, customers, or friends. The symposium will concentrate primarily on SIA's that are either directly interacting with humans, showing aspects of human-style intelligence, supporting interaction among humans and/or modeling explicitly aspects of human social intelligence.

The symposium will focus on four key themes for which considerations of the "human-in-the-loop" are crucial. The symposium will comprise keynote talks, panel discussions and individual paper presentations, addressing one or several of these themes:

- *Connecting to SIA's*: architectures and design spaces for SIA's; innovative user-interfaces, novel environments and new methodologies for software and

robotic agents interacting and collaborating with humans and facilitating communication and collaboration between humans; hot approaches (emotional, empathic aspects) and cold approaches (intention and plan ascription, reasoning etc.); synchronization in human-agent dialogue; the role of embodiment in human-agent interaction; exploiting anthropomorphism; believability and degrees of agent complexity

- *Learning and playing with SIA's*: new applications of social agent technology in rehabilitation and education; SIA's as instructors, guides, teachers, assistants and friends; SIA's which support human creativity and imagination; SIA's in living environments (e.g. at school, at home, at work, on holiday, at meeting points)
- *Living with SIA's*: social agent technology which influences attitudes/opinions/behavior; issues of "social relationships" between human and agent e.g. helping, competition and cooperation, autonomy and control, predictability, deception, manipulation, initiative, delegation, responsibility, conflicts
- *Growing up and evolving with SIA's*: social agent technology which empowers humans, addressing the cognitive and emotional needs of humans; impact of SIA's on human society and culture; agents adapting to and supporting cultural diversity; ethical considerations

Organizing Committee

Elisabeth Andre, DFKI GmbH; Ruth Aylett, University of Salford; Cynthia Breazeal, MIT AI Lab; Cristiano Castelfranchi, Italian National Research Council; Justine Cassell, MIT Media Lab; Kerstin Dautenhahn (Chair), University of Hertfordshire; Francois Michaud, Universite de Sherbrooke; Fiorella de Rosis, University of Bari

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 6, 2000. 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 20, 2000.

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 2000 Fall Symposium Series
445 Burgess Drive
Menlo Park, CA 94025

If you are paying by credit card, you may email the form to 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.

Please note: All refund requests must be in writing and postmarked by October 2, 2000. 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 2

7:00 PM - 8:30 PM

Friday, November 3

8:00 AM - 5:00 PM

Saturday, November 4

8:00 AM - 5:00 PM

Sunday, November 5

8:00 AM - 12:00 PM

Accommodations

For your convenience, AAAI has reserved a block of rooms at Sea Crest. The rate is \$82.00 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 2, 2000. 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 Conventions in America (CIA) as the official travel agency for this meeting. Call 1-800-929-4242 and ask for Group #428 to receive the following discounts or the lowest available fares on any other carrier: American Airlines and USAirways - save 5%-10% off the lowest applicable fares. Take an additional 5% off with minimum 60-day advance purchase. Fly into Boston or Providence between October 29 – November 10, 2000. All customers of CIA also receive free flight insurance of \$100,000. Due to changes in the airline industry, CIA has instated a transaction fee of \$10.00. Alamo Rent A Car – special rates start as low as \$38/day or \$165/week with unlimited free mileage. Reservation hours: M-F 6:30AM-5:00PM PDT. Outside US and Canada, call 619-232-4298 or fax 619-232-6497. Website: www.stellaraccess.com (use #428). Email: flycia@stellaraccess.com. If you call direct, refer to these codes:

- *American:* 1-800-433-1790, Index #12396
- *USAirways:* 1-800-334-8644, Goldfile #54651281
- *Alamo:* 1-800-732-3232, ID #409268 GR

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 TF 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 \$14 one way and \$26.00 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 \$14.00 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, American Airlines, USAirways, Alamo Rent A 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 2000 AAAI Fall Symposium Series

ALL ATTENDEES MUST PREREGISTER
Please complete in full and return to AAAI, postmarked by September 6, 2000 (invited attendees) or by September 20, 2000 (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. Building Dialogue Systems for Tutorial Applications

2. Learning How to Do Things

3. Parallel Cognition for Embodied Agents

4. Simulating Human Agents

5. Socially Intelligent Agents: The Human in the Loop

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 PO's 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 October 2, 2000. 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 _____

