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# The Real Times

Vol.36 No.7

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March 1998

## Conversational Spoken Language Systems for Human-Computer Interaction

James Glass,  
Spoken Language Systems Group,  
Laboratory for Computer Science, Massachusetts Institute of Technology

Thursday, April 23, 1998  
MIT Laboratory for Computer Science, Room 518  
545 Technology Square  
Joint Meeting with the IEEE-CS

Meeting starts at 6:30PM.

### Meeting Overview

As the user community for computers rapidly expands from experienced programmers to naive users, we must seriously address the issue of the human-computer interface. It is highly desirable to allow a user to access information and solve problems via spoken input, using their native language. In many of these applications involving interactive problem solving (e.g., extracting information from a database), speech recognition technology must be augmented with natural language processing so that the speech can be understood, sometimes within the context of a verbal dialogue, and the appropriate, verbal response generated.

In this talk I will present an overview of recent research at MIT on conversational system development. I will outline some of the challenges facing researchers trying to move beyond recognition to complete understanding of spontaneous-speech input. I will then describe the approaches we are developing for speech recognition, language understanding and generation, meaning representation, as well as discourse and dialogue. Our experiences with

issues of data collection, system evaluation, portability, and multilinguality will also be discussed.

The talk will incorporate both video clips and live demonstrations of several spoken language systems that have been developed in our group, including a web-based spoken language interface for on-line information access in the travel domain, and a telephone-based interface for weather forecast information.

### Speaker Biography

James R. Glass (<http://www.sls.lcs.mit.edu/jrg>) obtained his Ph.D. degree in Electrical Engineering and Computer Science from the Massachusetts Institute of Technology in 1988. He is currently a Principal Research Scientist and Associate Head of the Spoken Language Systems Group in MIT's Laboratory for Computer Science. Dr. Glass is a former member of the IEEE Signal Processing Society Technical Committee on Speech Processing and is currently an associate editor of the IEEE Transactions on Speech and Audio Processing.

This meeting is co-sponsored by the GBC/ACM and the Boston Section of the IEEE Computer Society. Meeting begins at 6:30 pm

### Directions to MIT LCS:

The MIT Laboratory for Computer Science is located at 545 Technology Square on Main Street in Cambridge near the intersection of Main and Vassar. Parking is available in front of the building. The closest T-stop is Kendall Square on the red line. The talk will be given in room 518. Please see "<http://whereis.mit.edu/doc/getting-to-mit.html>" for additional directions to MIT and "<http://whereis.mit.edu/bin/map?locate=lcs>" for a map showing the location of the MIT LCS.

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Timely notices of events, meetings, and other activities of interest to the Chapter's Membership should be submitted by the 10th of the month Before the intended issue and sent, with attention to the Managing Editor to:

**GBC/ACM, P.O. Box 465, Lexington, MA 02173.  
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The Chapter's mailing list is available to related professional organizations or for commercial use. Please contact the Membership Chair at the address above when requesting mailing lists.

**Subscriptions:**

Annual subscription cost is included in the Chapter Membership dues of \$10.00. See top line on mailing label for membership expiration date. Library subscriptions are free. Please send orders for copies to the Chapter mailing address above.

**Postmaster:**

Address changes should be sent to the mailing address above. Allow eight to ten weeks for changes to address or membership renewal to become effective. Send old label with address modifications.

WEBTECH EVENT  
 taken from  
 www.acm.org/chapters/webtech

Tuesday April 21, 1998  
 at 7:00  
 IBM Solutions Center  
 Waltham **Internet Security Panel**  
 (panel members to be announced)

<b>Seminar &amp; Book Titles</b>	<b>Advance Registration</b>	<b>Walk-in</b>	<b>Enter Amount</b>
Concurrent Programming in Java	\$75	\$85	
<i>Concurrent Programming in Java</i>	\$30	\$30	
Transaction Processing Overview	\$75	\$85	
<i>Principles of Transaction Processing</i>	\$30	\$30	
The C++ Standard Library	\$75	\$85	
<i>The C++ Programmingz Language 3rd edition</i>	\$30	\$30	
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# SIGCHI Monthly Meeting for April

## Morality, Privacy, and Interface Design

Judith A. Perrolle, Associate Professor of Sociology,  
Northeastern University

Tuesday, April 7, 1998  
Bolt, Baranek and Newman, Cambridge, MA  
Refreshments at 6:30 PM, meeting at 7:00 PM

### Abstract

Interface designs for human-to-human communication involve elements of surveillance and control of users. Security and protections for intellectual property are frequently given as the reasons for these design features. While institutional surveillance and controls seem appropriate for regulating the moral behavior of individuals in what cognitive-moral-theorist Lawrence Kohlberg calls the “pre-conventional” stage of moral reasoning, they are theoretically inappropriate for individuals operating at the higher “conventional” and “principled” stages. Learning and exercising higher forms of moral reasoning require the social conditions of what the theorist Jurgen Habermas calls “communicative action,” in which groups create communities with negotiated behavioral norms.

Privacy is required in both computer-supported cooperative work interfaces and in social interfaces in order for groups of individuals to operate in what the social-theorist Erving Goffman called “backstage” areas. There, free from the immediate supervision of formal authorities, they can work out mutually agreed-upon patterns of acceptable behavior. Without these shared private spaces, the theoretical conditions for communicative action and moral development are restricted by the interface design.

In our enthusiasm to civilize the unruly world of online communications, social theory strongly suggests that we avoid the temptation to build technologies of surveillance and control as a solution to online behavior. Private spaces, where social interactions among people regulate behavior, are essential for moral development, especially in educational and community environments.

*Judith A. Perrolle is an Associate Professor of Sociology at Northeastern University. Her publications include COMPUTERS AND SOCIAL CHANGE [1], “Surveillance and Privacy in Computer Supported Cooperative Work” [2], “Using the New ACM Code of Ethics in Decision Making,” [3], and “Conversations and Trust in Computer Interfaces,” [4]. She was the principal investigator of a National Science Foundation study, “Ethical Reasoning about Computers and Society,” and is currently studying practical issues in web-based online instruction.*

[1] Belmont, CA: Wadsworth, 1987 Available online at  
<http://www.ccs.neu.edu/home/perrolle/bookindex.html>

[2] In David Lyon and Elia Zureik, eds., New Technology, Surveillance and Social Control. University of Minnesota Press, 1995. Available online at  
<http://www.ccs.neu.edu/home/perrolle/privacy.html>

[3] Communications of the ACM February, 1993.

[4] In Charles Dunlop and Rob Kling, eds. Computers and Controversy: Value Conflicts and Social Choices. Academic Press, 1991.

**Directions to Bolt Beranek and Newman (BBN)/Recorded directions: (617) 873-4567**

**From Route 128, Lexington:** Take Route 2 inbound. The four-lane highway narrows to two lanes near Route 16. At the traffic light bear right onto Alewife Brook Parkway. Proceed past shopping centers to the Fresh Pond Rotary. Take the first right onto Concord Avenue. Fawcett Street is one block down Concord Avenue, on the right.

**From the Mass. Pike:** Take the Pike inbound to the Cambridge/Allston exit. Exit onto the Cambridge off-ramp and take Cambridge Street. Turn left onto either Storrow or Memorial Drive. (Storrow Drive is on the Boston side of the Charles River and Memorial Drive.)

**From Storrow and Memorial Drives:** Take Storrow or Memorial Drive west: follow signs to Route 2,3,16. Remain on 2. The road will become narrow and winding. This is the Fresh Pond Parkway. Several car dealerships and Fresh Pond Seafood will be on the right. At the 1st rotary, take the third right onto Concord Ave. Continue straight at the second rotary. Fawcett is one block further on right. Once on Fawcett St. the Newman Auditorium is about ½ block, on the right. Park in the lot on the right side of the street; the lot is adjacent to the auditorium building.

**Public Transportation:** Take the T to Harvard Square. From Harvard Square take the Concord Ave./Belmont Center bus. Get off at Fawcett St.

# Professional Development Seminars - 1998 Spring Series

## The C++ Standard Library

With Bjarne Stroustrup, AT&T Labs  
April 4, 1998  
Northeastern University

### OVERVIEW:

The structure, principles, and fundamental uses of the C++ Standard Library will be introduced by the author of the C++ language. Also, newer C++ features will be introduced in the context of library usage.

### WHO SHOULD ATTEND:

C++ programmers who want to learn about the newly ratified C++ Standard Library. A working knowledge of C++ is assumed.

### SEMINAR TOPICS:

- Significance of the standard library
- Simple examples
- Design of the standard library
- Library overview
- Container design
- Iterators, based containers, STL
- Exception safety
- Allocators
- Algorithms and function objects
- Strings and I/O streams

### LECTURER:

Bjarne Stroustrup is the designer and original implementor of C++ and the author of *The C++ Programming Language* (first edition 1985, second edition 1991), *The Annotated C++ Reference Manual*, and *The Design and Evolution of C++*. A graduate of the University of Aarhus, Denmark, and Cambridge University, England, Dr. Stroustrup is currently the head of AT&T's Large-scale Programming Research Department and an AT&T Bell Laboratories Fellow.

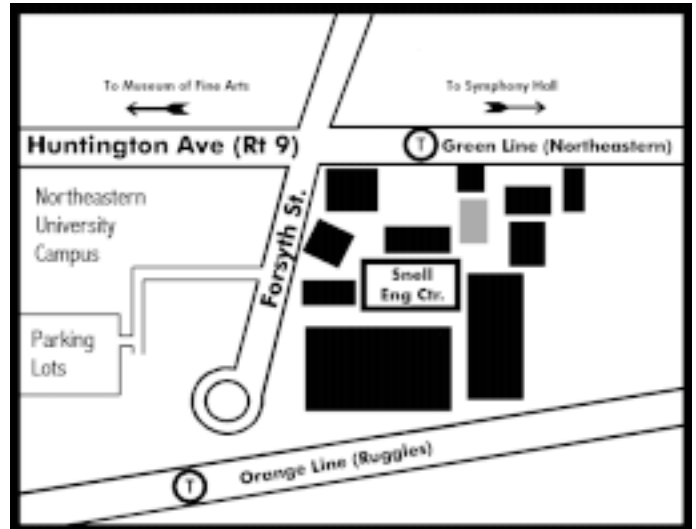
### SESSION CHAIR:

Robert Mathews, [rvm@world.std.com](mailto:rvm@world.std.com)

## GENERAL INFORMATION

### NORTHEASTERN LOCATION

Northeastern University, Boston, is within walking distance of the MBTA Green Line (Arborway/E Train) Northeastern station and the Orange Line Ruggles station. Free parking is also available.



### SCHEDULE

8:30am - 9:00am	Registration (continental breakfast)
9:00am - 12:15pm	Morning session (break at 10:30am)
12:15pm - 1:30pm	Lunch (provided on-site)
1:30pm - 4:30pm	Afternoon session (break at 2:30pm)

### REGISTRATION FEES

Included in the \$75 fee are seminar materials, lunch, and refreshments. Registrants not current members of the GBC/ACM are charged an additional \$10, and become members of the chapter for a year. This is distinct from ACM membership. Surcharge for on-site registration is \$10. Purchase orders, credit cards, faxes and e-mail cannot be accepted. **Enrollment is limited and on a first come, first served basis.** Early registration must be made by a check or money order at least three weeks in advance of the seminar to receive confirmation from GBC/ACM.

### CANCELLATION & REFUND POLICY

Cancellations must be received in writing. The full fee will be refunded if the PDS Registrar receives written notification on or before the day of the seminar, addressed to GBC/ACM, PO Box 465, Lexington MA 02173. Refund requests received after the seminar date will be subject to a \$15 administrative fee. The \$10 membership fee will not be refunded.

### ANY QUESTIONS?

See: <http://www.acm.org/chapters/gbc> or Call (617)862-1181

## Seminar Book Offer

The C++ Programming Language, third edition  
(about a 75% rewrite of the second edition)  
by Bjarne Stroustrup  
List: \$42.99 PDS Price: \$30.00

**Software Process Improvement Network (SPIN) April Meeting Announcement**  
**“Standards for Component-Based Development”**  
**Dr. Carma McClure, Extended Intelligence, Inc.**

**Tuesday, April 21, 1998**  
**6:30pm (networking & refreshments)**  
**7:00-8:30pm (meeting)**

**Boston area Software Process Improvement Network (SPIN)**  
**(Admission Free)**  
**GTE, Building #5, 77 A Street, Needham, MA**  
**(Wheelchair accessible)**

**Meeting Overview**

Component-based development promises to help developers rapidly construct high quality solutions by giving them an Internet-based toolbox of ready-made components. However, the catch is that component-based development is more dependent on standards than any other software technology. This talk will address the emerging software reuse standards and how they can help component-based development live up to its promises.

**Speaker Overview**

Dr. Carma McClure is VP of Research at Extended Intelligence, Inc., a Chicago-based company offering reuse methodology products and consulting services. Her latest book from Prentice-Hall is Software Reuse Techniques. She is the Chairperson of the IEEE Computer Society Reuse Processes Working Group that is currently developing a reuse processes standard.

**Directions: To get to GTE, Building #5:**

From Route 128 in Needham, take exit 19A onto Highland Avenue East. At first traffic light turn RIGHT onto Second Street. Go 1/4 mile (passing hillside Sheraton entrance on right) and turn RIGHT onto A Street. Go 1/5 mile and before GTE HQ building on left (multi-story glass facade), turn LEFT into Parking lot. Please enter at the cafeteria.

Maureen Harris (617) 455-3393,  
maureen.harris@GSC.GTE.com;

Ken Oasis (617) 563-4197, ken.oasis@fmr.com; or  
www.cs.uml.edu/Boston-SPIN/;

SPIN E-Mailing List Additions or other changes:  
Dan Allen 603-756-0938  
danallen@ma.ultranet.com

This month of April is very much a slow month for RealTimes. Many of the GBC/ACM PDS events are over and space is available. As the editor, I am faced with what to do with this space. So in an attempt to keep the information informative about local activities I chose to select the front page of the IEEE/CS web page at ([www.ieee-boston.org](http://www.ieee-boston.org)) for your viewing pleasure. It is full of local events that are happening. Here is a quick shot of the opening page.

Robert Epolito, [epolito@tiac.net](mailto:epolito@tiac.net)

## Section and Ultrahet Communications

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- • [Software Verification & Validation - An Overview for Practitioners](#)
- • [Java Overview for Managers](#)
- • [How to Build & Maintain a Profitable Consulting Practice](#)
- • [Object Oriented Design and Analysis - Building Systems the O.O. Way](#)
- • [Introduction to Satellite Communications](#)
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- JTAG - IEEE 1149 Standards - CANCELLED

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- • [IEEE Boston Section Spring Social & Awards Reception](#)
- • [IEEE Boston Section Annual Meeting](#)
- • [Electro '98 co-located with NEPCON East](#)
- • [36th Annual Spring Reliability Symposium](#)