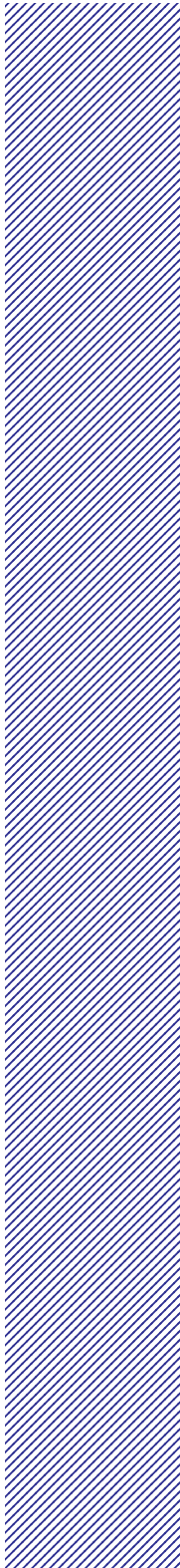




The Official Newsletter of the Greater Boston Chapter of the 

The *Real Times* 

Vol.36 No.9 www.acm.org/chapters/gbc May 1998




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May 27	Page 6	SIGCHI	MITRE	xensei.com/gbsigchi/mtg.html
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If the top line of your mailing label below reads ****EXPIRED****, please renew your membership at the very affordable rate of \$10/yr. Please consider renewing for more than one year at time. It saves all of us some labor. For that \$10 you get your very own copy of this newsletter/local event calendar. And, not to worry, we know our database can handle the century boundary because at least one member has paid through the year 2000! Thank you.



The Greater Boston Chapter of the 
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The Real Times

Vol.36 No.9

www.acm.org/chapters/gbc

May 1998

GBC/ACM Meeting Announcement

May 14-Pin-Face — How ILM Produces an Animated Commercial
May 15-A Day in the Life at Industrial Light and Magic or
How Did They Do That Visual Effect...

Marc Cooper
Industrial Light and Magic

Thursday, May 14, 1998 & Friday, May 15, 1998
Bartos Theater, MIT Media Lab, Cambridge

Abstract

GBC/ACM and SIGGRAPH/Boston are pleased to present a speaker from Industrial Light and Magic (ILM). ILM is the award-winning (multiple Oscars and Cleos, that is) company owned by George Lucas that is famous for all the visual effects we see in the movies such as the Star Wars series.

Bring your family to learn some of the behind the scenes details.

Marc Cooper will present an overview about ILM and what it takes to produce animation and visual effects for the movies and TV. He will describe how several visual effects were produced from such films as Lost World, Dragonheart and Star Trek. Come to the meeting to see what a day is really like at ILM. (It might not be a much fun as we all think...)

This meeting will be the second of two meetings co-sponsored by SIGGRAPH/Boston, GBC/ACM and the Boston Chapter of the IEEE-CS. SIGGRAPH/Boston will host the meeting Thursday, May 14 where Marc will present a detailed presentation of how he and his associates at ILM produced the CPA Pin-Face commercial. For more details on the SIGGRAPH/Boston meeting, please see their announcement elsewhere in this issue or visit their website at: www.siggraph.org/chapters/boston.

About the Speaker

Marc Cooper is a Technical Director at Industrial Light and Magic of Marin County, California. He has worked on numerous feature films including Casper, Dragonheart, and Flubber. He has just completed work on Dreamworks next film; Deep Impact.

Marc has been at ILM for 4 years. Prior to working at ILM, he worked as a research programmer and systems administrator at the NASA Lewis Research Center in Cleveland, Ohio and as a visualization programmer for the National Center for Supercomputer Applications (NCSA) at the University of Illinois. He has a degree in Computer Science from the University of Illinois.

When

Friday, May 15, 1998. Networking time at 6:30pm, announcements and feature presentation at 7:00pm.

Where

Bartos Theater, MIT Media Lab, Cambridge, MA.

See next page for directions to the Media Laboratory

MIT Building #E15, The Wiesner Building
20 Ames Street
Cambridge, MA 02139
617-253-0338

(Continued on page 2)

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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.
(781) 862-1181**

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:

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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.

Media Laboratory

MIT Building #E15, The Wiesner Building
20 Ames Street
Cambridge, MA 02139
617-253-0338

Directions to Bartos Theater, MIT Media Lab.

From the West:

From the Massachusetts Turnpike: Exit at "Brighton/Cambridge". Follow signs to Cambridge. The Doubletree Hotel will be on your right. Go straight over the bridge into Cambridge (on River Street) and take your first right onto Memorial Drive. The Charles River will be on your right. Go straight on Memorial Drive, staying to the center of the road and going over the overpass at the Boston University (B.U.) Bridge (past MicroCenter). Pass under the next bridge, which is the Massachusetts Avenue Bridge. The first street after that bridge, to the left, is Ames Street—but it is one way in the wrong direction. You will have to take the second left (sign says Kendall Square) onto Wadsworth St. Take the first left onto Amherst Street. On Amherst Street, take the third right onto Ames Street. The Media Laboratory is the second building on your right. It is a large contemporary white tiled building. Bartos Theater is on the ground floor.

By Subway: Please check the subway map at your boarding point. You want to take the Red Line to the "Kendall/MIT" stop. You can transfer without additional fees from any other subway line at the appropriate subway station. At the Kendall/MIT stop, you will surface at Main Street in Kendall Square. Landmarks include Au bon Pain, the Marriott Hotel, the MIT Coop and MIT Press Bookstore (across Main Street from the others), and Legal Seafoods Restaurant (at the west end of the block). Facing Main Street, with the Marriott and the MIT Coop to your back, proceed right (west) towards Legal Seafoods. Walk to the first traffic light. This is the intersection of Main Street and Ames Street. Turn left onto Ames Street. The Media Laboratory is the second building on the left at 20 Ames Street. Bartos Theater is on the ground floor.

Parking:

There are rarely any on-street parking spaces on the MIT campus. The only garage that is convenient to the Media Laboratory is the Marriott Hotel garage. The entrance to this is on Ames Street, between Main and Broadway.

May 14

We all have seen those pinboard toys where you can press your hand or your face into the back and leave a "pin-pression" of it on the front. But how do you simulate that functionality using computer graphics? Marc Cooper, a technical director at ILM will explain the various technical and artistic challenges encountered in making over eight thousand virtual pins perform for a commercial called "CPA Pin-Face" for the Certified Public Accountants Association. In addition he will review some of his work from the last Star Trek movie, *Star Trek: First Contact*.

May 15

Marc will present an overview about ILM and what it takes to produce animation and visual effects for the movies and TV. He will describe how several visual effects were produced from such films as *Lost World*, *Dragonheart* and *Star Trek*. Come to the meeting to see what a day is really like at ILM. (It might not be a much fun as we all think...)

Results of a contest for "theories" sponsored by Omni magazine.

GRAND PRIZE WINNER

When a cat is dropped, it always lands on its feet. And when toast is dropped, it always lands with the buttered side facing down. I propose to strap buttered toast to the back of a cat; the two will hover, spinning inches above the ground. With a giant buttered cat array, a high-speed monorail could easily link New York with Chicago.

RUNNERS-UP:

#1 If an infinite number of rednecks riding in an infinite number of pickup trucks fire an infinite number of shotgun rounds at an infinite number of highway signs, they will eventually produce all the world's great literary works in Braille.

#2 Why Yawning Is Contagious: You yawn to equalize the pressure on your eardrums. This pressure change outside your eardrums unbalances other people's ear pressures, so they must yawn to even it out.

#3 Communist China is technologically underdeveloped because they have no alphabet and therefore cannot use acronyms to communicate ideas at a faster rate.

#4 The earth may spin faster on its axis due to deforestation. Just as a figure skater's rate of spin increases when the arms are brought in close to the body, the cutting of tall trees may cause our planet to spin dangerously fast.

HONORABLE MENTION:

The quantity of consonants in the English language is constant. If omitted in one place, they turn up in another. When a Bostonian "pahks" his "cah," the lost r's migrate southwest, causing a Texan to "warsh" his car and invest in "erl wells."

Dear Chapter Chairs,
Policy '98 Shaping Policy in the Information Age will be held on May 10-12, 1998, at the Renaissance hotel in Washington D.C. Its goal is to build collaborations between computing professionals and policy makers. If you could help us spread the word regarding Policy'98 by distributing flyers at your chapter meetings, we would very much appreciate it. We also have an address for Policy '98 that you can use to send an electronic announcement to your chapter members.

Please send your requests to: Haritini Kanthou at: kanthou@acm.org

For more information on Policy '98, please visit our web site at: <http://www.acm.org/policy98> We strongly encourage ACM members and Non-members to attend this exciting Conference.

Thanking you in advance for your support.
With very best regards, Fran Sinhart, ACM Local Activities Coordinator

GBC/ACM Member Registration Form			
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IEEE CS
6:30 pm, Thursday, May 28

Component-Based Software Development
Narayanan Krishnakumar, Ph.D.
Fidelity Investments Enterprise Products and Services Division

Abstract

Component-based development is fast changing the world of software engineering. Analogous to electronic components, software components are reusable application building blocks with well-defined interfaces that run in the context of other applications called containers. Components have been most popular in compound document frameworks, where for instance, an Excel spreadsheet can be embedded within a Word document (container) and manipulated directly from within the Word document. This paradigm is swiftly being extended to non-visual service components in client-server environments, resulting in server-side containers such as Microsoft Transaction Server or IBM's Component Broker. Software developers trained in component-based development can produce substantial business functionality in a short time period with relatively low error (bug) rates. This talk will illustrate the promise of components and outline the benefit and cost tradeoffs of component-based software development. We will compare and contrast the technical aspects of the three prominent component models -COM/ActiveX, CORBA, and Java Beans. We will also discuss how components are developed, used, tested and managed on client desktop and server back-ends today, and how these development environments may work in the future.

Speaker's Bio

Narayanan Krishnakumar (KK) received a B.Tech in Computer Science from the Indian Institute of Technology, Madras, India in 1987 and a PhD in Computer Science from the State University of New York at Stony Brook in 1992. He is currently with the Systems Co. at Fidelity Investments and is chief architect of a customer relationship tracking and management product that utilizes Java, ActiveX and Microsoft Transaction Server technologies. KK has published widely in the fields of transaction processing, workflow systems, and mobile computing. He has been on several conference committees and was most recently guest co-editor of a special issue of the Distributed and Parallel Databases journal on Databases and Mobile Computing. KK has also been teaching systems courses at Brandeis University, Waltham, MA. KK's current interests are primarily in distributed object computing, component technologies, and their applicability to high-performance transaction processing systems.

Directions to MARCAM:

Take Route 128 to the Highland Avenue, Needham, exit (the Muzi Ford exit). Turn left at the first light onto Hunting Road. Turn left at the first light onto Kendrick Street. Cross over 128, turn right at the first light onto Wells Avenue. Go about 0.2 miles to Marcam Corporation on the right side of the road at 95 Wells Avenue. Enter the building at 85 Wells Avenue, in the middle of the back of the building, as this is the closest entrance to the auditorium.

REVIEW of April Monthly Meeting

Held jointly with the Boston Section of the IEEE Computer Society. Reviewed by Jay Conne Conversational Spoken Language Systems for Human-Computer Interaction

Did you ever wish you could talk to your computer like the crew of the Starship Enterprise communicates with theirs? Dr James Glass, Associate Head of the MIT LCS Spoken Language Systems Group, showed us a very impressive demonstration of how close today's research is getting to that fantasy. His talk was equal parts of demonstrating their prototypes and discussing the underlying technologies. To experience a bit of it, call the toll free number 1-888-573-8255 and have a conversation with Jupiter. Just ask any weather-related question and see how it responds. By doing so you will be lending your voice to science. They use every call as part of their research. Please invite all you friends and colleagues to try it too. For more information about Jupiter see www.sls.lcs.mit.edu/jupiter. And then pop up a level to see the full scope of the Spoken Language Systems Group's research.

Jupiter uses DECtalk for voice synthesis which is quite understandable albeit very artificial sounding and not much improved since it was introduced by Digital Equipment Corp. about 15 years ago. I used it in a medical systems startup I founded in 1982. A member of the audience suggested that Berkeley Text to Speech is reported to be much better for text to voice synthesis. Another member, Rob Mathews, who I spoke to later, had worked with both at Pure Speech and found them not that different and agreed with Dr. Glass that they all sounded bad. However, a dramatically more natural speech synthesis was demonstrated using pre-recorded phrases. The system was able to make complex selections of prerecorded fragments that had a very natural inflection and timing when played as a response. Unfortunately this is not used in Jupiter.

Quoting from the Jupiter web site: Jupiter is a conversational system that provides up-to-date weather information over the phone for several hundred cities worldwide. Jupiter knows about 500+ cities worldwide (of which 350 are within the US) and gets its weather information from four different Web-based sources." Jupiter presents challenges in: 1. Virtual Browsing: Jupiter provides access to Web weather information to those without PC's, internet providers, etc. All that is needed is a telephone. 2. Displayless Interaction: Jupiter is a telephone-based conversational system. Our only means to get information to you is via an audio interface. This means that we must worry about issues such as conciseness (to answer user queries in the most efficient, user-friendly way), and the quality of our synthetic speech (to provide the clearest form of audio output). 3. Content Understanding: Jupiter must understand the content of Web-based weather reports in order to deliver just the information that the user requests (e.g., "What is the temperature today in Boston?"). The challenges here include retrieving, understanding, and synthesizing information from multiple knowledge sources on the Web. 4. Multilinguality: One of the goals of Jupiter is to understand user queries in multiple

languages and answer those queries in the same language. We are currently working on paraphrasing weather content into Spanish, German, and Mandarin Chinese and hope to begin work soon on speech understanding in these languages. 5. Robust Speech Recognition/Understanding: Jupiter is a telephone-only system, so we must be able to deal with the special challenges telephone speech presents. Additional research issues here include rejection (e.g., for out-of-domain inquiries) and dialog-dependent language-modeling.

A more general demonstration showed both voice and visual output (displayful vs displayless Jupiter). This demo system supports conversations across three domains: weather, flight information, and restaurants. For example, when asked for a list of local italian restaurants, it supplied a restaurant list with addresses and then displayed a menu from one when asked. If asked about weather in some part of the country, it provided a five day forecast with maps and graphics. And it would answer a question like what flights are arriving from Chicago around 8:00PM and then and then accept the follow-up question. "How about Phoenix?" while retaining the previous context.

We did not see cross-domain requests such as, "When can I fly to Chicago this week and avoid bad weather?" But we did get answers to, "Where are there weather advisories in the US?" and "When can I get a flight to Chicago tomorrow afternoon?" In responding to the advisories question, the system listed states with weather advisories and asked the requestor to pick from that list - thus demonstrating effective delivery of mentally manageable chunks of information.

What I found most impressive was the complexity of the questions it could handle with fully continuous speech input. The complexity of context analysis is certainly a difficult problem. One demonstration showed the actual parsing process as the system makes guesses until it finds meaningful phrases that match the spoken input. At no time did the demo system try to respond to nonsense with nonsense. In each case it either responded with meaningful interpretations of the request or asked for clarification. The complexity demonstrated was probably good enough to be commercially viable. However, we had no comparisons of this work with the two well-known commercial vendors' products - Kerzweil & Dragon Systems.

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Jay Conne Consulting	[Home Office]	617-776-0339	218
School Street	[Cell]	617-460-2663	
Somerville,	MA		02145

**Data Presentation through Natural Scenes
Georges Grinstein
Institute for Visualization and Perception Research
University of Massachusetts, Lowell**

**Wednesday, May 27, 1998
Refreshments at 6:30, meeting at 7:00**

**MITRE Corporation, Bedford, MA, Building M
(directions & parking info below)
Free and open to the public.**

**For more information please contact the program chair:
Ron Perkins
rperkins@shore.net
9788-465-6083 (email preferred)**

Abstract

The challenge in developing advanced techniques for data visualization is to display ever increasing large amounts of data for perceptual consumption. Graphical data displays are pushing the limits of human understanding. As the amount of data for analysis increases, more and more capable displays are required. Various issues like physical screen limitations and technique scalability need to be addressed, but particularly, human perceptive capabilities. Visualizations are graphical objects designed for visual stimulation in such a way as to provide perceptual access to information. Our approach to scientific data visualization relies on Gibson's principles of ecological psychology. This approach assumes that the human perceptual apparatus has evolved to respond automatically to the surrounding environment allowing the observer to react rapidly without "thinking". These external environments are natural scenes and not abstract objects or images typically found in modern displays. Thus, the display of data should utilize shapes that are familiar in nature, which the visual system has evolved for. Natural scenes provide the means to present data in a systematic way that is visually perceptive. If we can understand the rules whereby various parameters of real substances, real objects and real scenes control the appearance of natural scenes and then let data be mapped onto those parameters, we can harness these natural perceptual processes to explore and analyze scientific data. This presentation will discuss the iconographic approach developed by Grinstein, Levkowitz, Pickett and Smith in the late 1980's and provide examples of newer artificial displays that trigger comprehensive natural computations of the data.

Bio

Georges Grinstein is a full time Professor of Computer Science at University of Massachusetts Lowell, Director of the Graphics Research Laboratory, Director of the Institute for Visualization and Perception Research and a Principal Engineer with the MITRE Corporation. He received his B.S. from the City College of N. Y. in 1967, his M.S. from the Courant Institute of Mathematical Sciences of New York University in 1969 and his Ph.D. in Mathematics from the University of Rochester in 1978. His areas of research include graphics, imaging, sonification, virtual environments, user interfaces and interaction, with a very strong interest in the visualization and analysis of complex systems.

DIRECTIONS

From New Hampshire Take Route 3 South to Exit 26 (Route 62). Turn Left on Route 62. Turn Left at the second light to enter MITRE.

From Boston Take Route 93 North Route 128 South. Take Route 128 South six miles to Exit 32A (Route 3 North). Take Route 3 North for two miles to Exit 26 (Route 62). Bear right on Route 62. Turn Left at the light to enter MITRE. After entering MITRE Stay to your left at the fork, and pass a two story parking garage on the right. Continue straight until you reach a stop sign, then turn right. After you pass the parking garage on your right, turn right, and park in the parking area in front of MITRE's M building. Enter through the revolving door, and the conference room is immediately to your right.

Using Inspection Data
John T. Harding, Software Technology Transition

May 19, 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)

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

Abstract

A large number of organizations are using software inspections today but many of them are not getting enough value from the data. Jack will describe various uses of the inspection data including: 1. Optimizing the inspections to find the most defects 2. Using inspection data to make business trade-offs 3. Forecasting the number of defects remaining which need to be found during test 4. Creating and using defect removal models
The discussion will also identify those aspects of the inspection process which need to be in place to use the data for these types of analysis.

Bio

John T. Harding is one of the founding partners of Software Technology Transition, which provides training and implementation in the Software Engineering Institute (SEI) Capability Maturity Model (CMM) and CMM-Based Appraisal for Internal Process Improvement method and in software inspections, metrics, and project management. He was a visiting scientist at the SEI, was the metrics mission manager for Groupe Bull, and held various technical and managerial positions in software development with IBM and the Bank of Boston.

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.