

January/February Meetings Software Quality Group of New England (SQGNE)

Topic: Proactive UAT Makes Users Competent, Confident, and Committed
Speaker: Robin Goldsmith, GoPro Management
Date: Wednesday, January 11, 2006 6 PM Networking, 6:30 -8:00 PM Business Meeting & Presentation
Location: Sun Microsystems, Burlington, MA
Details: http://www.sqadvice.com/SQGNE_Calendar.htm

Software Quality Group of New England (SQGNE)

Topic: Preparing for Your Next Job
Speaker: Johanna Rothman, Rothman Consulting Group
Date: Wednesday, Feb 8, 2006 6 PM Networking, 6:30 -8:00 PM Business Meeting & Presentation
Location: Sun Microsystems, Burlington, MA
Details: http://www.sqadvice.com/SQGNE_Calendar.htm

Boston SPIN

Topic: Excess Friction: How Fast Deadlines Can Slow You Down & Ruin Your Life
Speaker: Michael Mah
Date: Tuesday, January 17, 2006 6 PM Networking, 7:10 PM Presentation
Location: The Mitre Corporation, S Building, Bedford, MA
Details: <http://www.boston-spin.org/meeting.html>

Boston Section of IEEE Social Implications of Technology; Computational Intelligence Society and Robotics and Automation Society

Topic: Social Implications of Computational Intelligence: Will We Better Understand the Mind, Art, and Religion
Speaker: Dr. Leonid I. Perlovsky, Air Force Research Laboratory, Hanscom Air Force Base
Date: Tuesday, January 17, 2006 5:30-7:00 PM (Dinner 7:15 PM)
Location: MIT Lincoln Laboratory, Lexington, MA
Details: http://www.ieeeboston.org/society_on_social_implications.htm#jan17

MIT Enterprise Forum of Cambridge Open Source: Charting Your Course

Topic 1: Keynote Address: The State of Open Source Today
Speaker 1: Matthew Szulik, President, Chairman and CEO of Red Hat
Topic 2: Closing Keynote
Speaker 2: Marc Fleury, Founder, Chairman and CEO of Jboss, Inc.
Other Topics/Speakers: Cover a wide range of open source topics focusing on ways in which open source is changing the tide of business
Date: Saturday, February 11, 2006, 7:30 AM - 3:30 PM
Location: Burlington Marriott, Burlington, MA
Fee: Early bird special: \$95 for MIT Enterprise Forum members and members of partner organizations; \$130 for nonmembers; \$25 for full-time students with ID
Details: <http://www.mitforumcambridge.org/WW06/OpenSource.html>

GBC ACM December 2005 General Meeting Review

by Russell Doty, GBC ACM Member

To Spelunk or Not to Spelunk: Does Immersive Virtual Reality Help?
David Laidlaw, Director, Visualization Research Lab, Brown University
Thursday, December 1, 2005, 7-9 PM
MIT E51-345

David Laidlaw, Director of the Visualization Lab at Brown University, delivered a talk on December 1, 2005, at the GBC ACM General Meeting addressing the application of immersive virtual reality (VR) to the visualization of scientific data. The talk was well received, running over the allotted two hours and sparking considerable discussion and numerous questions.

David addressed several issues, focusing on the effectiveness of several different approaches to conveying information from complex datasets. One conclusion is that presenting large, complex, multi-dimensional data in a form that humans can understand remains a challenge. VR is a powerful tool for presenting data, but even using immersive VR the data must be structured into a form people can easily process. An example showed six different ways of presenting flow data. While the audience disagreed on the "best" way of presenting this data, there was universal agreement that the standard gridded representation was the least effective.

David presented several VR projects at Brown, including Digital Painting and Virtual Archeology. The Digital Painting project is designed for a CAVE Immersive VR environment. It uses "seven dimensional" trackers attached to an actual paintbrush. The trackers report location in space (three dimensions), orientation of the brush (3 axis of rotation for three additional dimensions), and time. The artist "draws" through space producing ribbon-like swathes of paint. The power of this approach is that it combines natural actions with the technology of a CAVE to produce a new type of art.

The Virtual Archeology project was a cross-disciplinary activity between the Visualization lab and a group of archeologists. The goal was to combine a 3D model of the archeological site with the discoveries from the site, present this information in the CAVE, and see if new insights could be gained by visually examining spatial correlation of discovered artifacts.

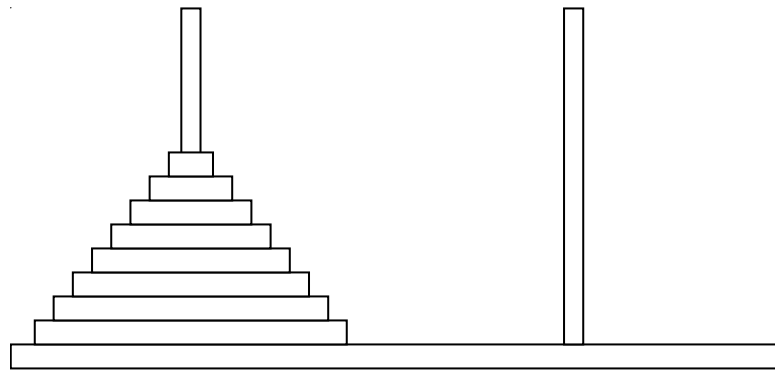
The project involved building a 3D model of the site and then importing the locations and details of discoveries from the site. The records from the excavation included the physical location of each item discovered. Unfortunately, much of this data was in different formats, including paper. Considerable effort was required to prepare all the data for use in the CAVE.

The first lesson learned was that a reconstruction of the site was not useful to the archeologists! They were only familiar with the ruins of the site, and could only work effectively with a model of the ruins. A second lesson involved the combination of visualization and the vagaries of memory. The digging at this site had spanned roughly ten years, so that the most recent finds were the best remembered. Seeing all of the data presented visually helped bring back memories of earlier discoveries at a specific location. This prompted consideration of several years work at a single location and provided new insights. Examining the spatial grouping of specific types of artifacts also provided considerable insight. Both the archeologists and the Visualization Lab considered this exercise productive and are interested in continuing the project.

Solution to The Tower of Hanoi Game from December 2005 Issue

<http://www.cut-the-knot.com/recurrence/hanoi.shtml>

The object of the game is to move the tower on the left needle to the right needle, under the conditions that only one disk may be moved at a time, and at no stage may a larger disk rest on a smaller disk.



SRC

AUX

DST

This is a problem of recursion and can be solved by using mathematical induction. For one disk, just move the disk from its source needle (SRC) to its destination needle (DST). Assume the solution for N - 1 disks. For N disks, proceed with the solution for N-1 disks but let these rest from largest to smallest on needle AUX instead of needle DST. Now, move the largest disk to needle DST and proceed with the solution for N-1 disks again but this time letting them rest on needle DST.

The minimum number of moves for N disks is $2^N - 1$. Below are the steps for N=4 and there are 15 steps:

- | | | | |
|---|----------------------|----|----------------------|
| 1 | Move from SRC to AUX | 9 | Move from AUX to DST |
| 2 | Move from SRC to DST | 10 | Move from AUX to SRC |
| 3 | Move from AUX to DST | 11 | Move from DST to SRC |
| 4 | Move from SRC to AUX | 12 | Move from AUX to DST |
| 5 | Move from DST to SRC | 13 | Move from SRC to AUX |
| 6 | Move from DST to AUX | 14 | Move from SRC to DST |
| 7 | Move from SRC to AUX | 15 | Move from AUX to DST |
| 8 | Move from SRC to DST | | |

Function to Solve the Problem:

```
Solve(N, SRC, AUX, DST)
  if N==0, then Exit
  Solve(N-1, SRC, AUX, DST)
  Move from SRC to DST
  Solve(AUX, SRC, DST)
```

DIGITS PUZZLE

from 2005 Page-A-Day Calendar

There are several ways to use all the digits from 1 to 9 in equations equaling 927. How many ways can you find?

Example: $341 + 586 = 927$ (commuting addends does not count)

More generally, how many ways can you find using the digits from 1 to 9 in equations of the form: $abc + def = xyz$ where a, b, c, d, e, f, x, y, z are distinct digits from 1 to 9?

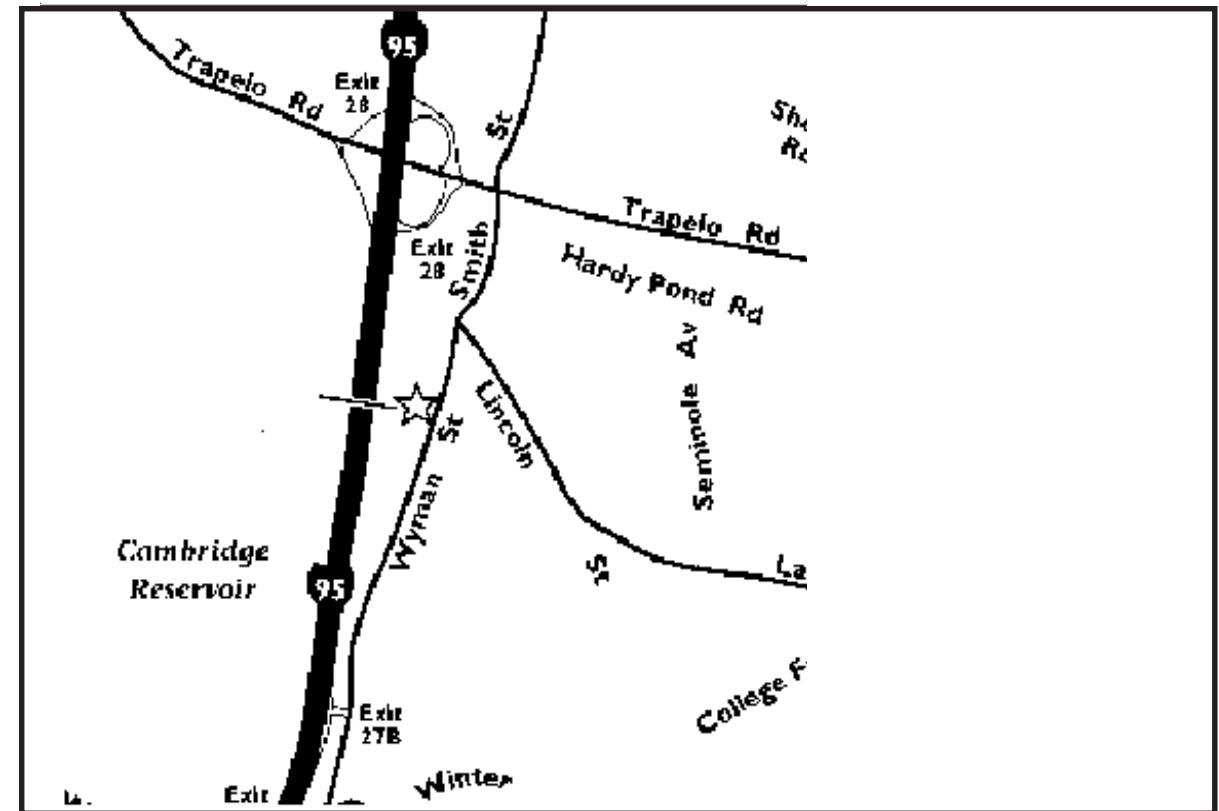
continued from page 1 - GBC ACM January 2006 General Meeting

If you've ever seen Jared speak about usability, you know that he's one of the most effective, knowledgeable communicators on the subject today. What you probably don't know is that he has guided the research agenda and built User Interface Engineering into the largest research organization of its kind in the world. He's been working in the field of usability and design since 1978, before the term "usability" was ever associated with computers.

Jared spends his time working with the research teams at the company, helps clients understand how to solve their design problems, explains to reporters and industry analysts what the current state of design is all about, and is a top-rated speaker at more than 20 conferences every year. He is also the conference chair and keynote speaker at the annual User Interface Conference, is on the faculty of the Tufts University Gordon Institute, and manages to squeeze in a fair amount of writing time.

The IBM Innovation Center is located at 404 Wyman Street, Waltham. There is free parking in the garage at the north end of the building. To reach the meeting room, walk out the front of the garage and around to your right to the front door of the building.

Directions to the room will be available when you sign in at the front desk. Directions are available online at <http://www.developer.ibm.com/isv/spc/waltham.pdf>. For further information contact Peter Mager p.mager@computer.org.



Real Times Editor

Rochelle Goren, editor@comcast.net

GBC/ACM Officers (2005 - 2006)

President

Peter Carmichael, pcarmichael@gbcacm.org

Vice President

Jay Conne, conne@acm.org

Secretary

Ed Bristol, e.bristol@comcast.net

Treasurer

Yona Carmichael, treasurer@gbcacm.org

Past President

Stephanie Collins, jsoco@attglobal.net

Local Special Interest Group Chairs

GB/SIGCHI

Gabriel Spitz, spitz@aptima.com

SIGGRAPH/Boston

Samuel Murphy, samuelmurphy@gmail.com

GBWEB TECH

Dan Jacobs, (781) 273-5825, daniel.jacobs@acm.org

Standing Committee Chairs

PDS Committee

Peter Barzdines, (617) 924-4072 (home), peterbar@world.std.com

Program Committee

Peter Mager, p.mager@computer.org

Interest Group Committee

Sam Cardman, sc@mbunix.mit.edu

Membership Chairman

Dick Knowles, membership@gbcacm.org

Volunteer Coordinator

volunteer@gbcacm.org

Webmaster

Michael Ciaraldi, ciaraldi@ciaraldi.com, <http://www.gbcacm.org>

The Real Times is published ten times per year (September through June) and is the official newsletter of the Greater Boston Chapter of the Association for Computing Machinery, First-class postage paid at Boston, MA, 02101.

All rights reserved: ©2006 by the Greater Boston Chapter of the ACM. Copying without fee is permitted, provided that copies are not made or distributed for direct commercial advantage and credit to the source is given, except articles that are noted otherwise. Abstracting with credit is permitted. For copying of articles that are specially noted, contact the Editor at the address below.

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 emailed to:

editor@gbcacm.org

Please check the privacy policy at:

<http://www.gbcacm.org/website/privacy.php>

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.

Check IEEE web site for course dates: <http://ieeeboston.org>



The Institute of Electrical and Electronic Engineers, Inc.

Spring 2006 Continuing Education Program

For complete course details, locations, dates and registration information,

Visit our Website at <http://ieeeboston.org> ; Phone: 781-245-5405

Register Early to get a Discount!

Security Awareness: Practical Elements of Security

Introduction to Java Servlets and JSPs

Software Verification & Validation for Practitioners and Managers

Radio Frequency Identification (RFID): Technology, Applications and Impacts

Networking and Internet Programming in Perl

Object-Oriented Programming in Perl

Perl and the World Wide Web

Regular Expressions in Perl

Troubleshooting, Verification, and the High Frequency Measurements in SI, Design, and EMC for Digital and Analog Designers

ESD: Design and Troubleshooting at the System and PWB Level

Failure Analysis and Prevention in Electronic Circuits

Developing for Embedded Linux 2.6

Introduction to Vx Works 5.x and Tornado 2.x

Introduction to Eclipse Development Platform and Application Framework

Project Retrospectives: Learning from Past Mistakes

How to Build & Maintain a Profitable Consulting Practice

MEMS in RF and Microwave Electronics

Introduction to Airborne and Pulse-Doppler Radars, and Phased-Arrays and Adaptive Arrays

Building Accurate Schedules from Software Requirements

Software Development for Medical Device Manufacturers



Are you a current member of GBC/ACM?*

If not, join! The \$10 annual membership fee offers many opportunities for development, through regular and engaging interaction with local contemporaries in addition to access to our popular PDS seminars. Mail in your membership form today!

Name: _____

Address: _____

City/State/Zip: _____

Phone Number: _____

Email Address: _____

Please make checks payable to GBC/ACM and mail to:
P.O. Box 465
Lexington, MA 02420

(*Check your address label for expiration date.)

IMPORTANT NOTICE - PLEASE READ

Request to send email address

Sometime in the future, we will be switching from a hard to soft copy of the Real Times. In order to send you notification of the Newsletter posting, we need your email address. We are asking the members to send their email address to the following:

membership@gbcacm.org

Please include your first and last name, membership identification number (found on the address label) and if you would like to receive email copy/notification of the Real Times once it goes into soft copy.

The GBC ACM will not disclose your email address outside the chapter without your permission.

Please check the privacy policy at:

<http://www.gbcacm.org/website/privacy.php>

State of GBC ACM Seminar Series

We are working on improving our PDS Seminars, and getting better attendance. We are in a state of flux right now...

Expect more information soon. In the meantime, please come to our exciting program of free evening seminars.

Reminder to mail in your annual dues

Please check the address label of the Real Times for your membership expiration date. If this date has passed or will be reached within the next few months, please submit your dues. Send a \$10 check payable to GBC/ACM and mail to:

*GBC/ACM
P.O. Box 465
Lexington, MA 02420*

Please include : Name, Membership ID, Address, Phone Number, Email Address.

*** Calendar January/February 2006 Events ***

Date	Page	Sponsor	Location
Jan 11	4	SQGNE	SUN Microsystems Burlington, MA
Jan 17	4	Boston SPIN	Mitre Corporation Bedford, MA
Jan 17	4	IEEE Social Implications of Technology & Computational Intelligence Society	MIT Lincoln Laboratory Lexington, MA
Jan 19	1	GBC ACM January General Meeting	IBM Innovation Center Waltham, MA
Feb 8	4	SQGNE	SUN Microsystems Burlington, MA
Feb 11	4	MIT Enterprise Forum of Cambridge	Burlington Marriott Burlington, MA

If the top line of your mailing label below reads ****EXPIRED****, please renew your membership (for just \$10/yr). For that \$10 you get a copy of this newsletter/local event calendar mailed to any address you choose plus the right to attend PDS seminars at the member rate. Please consider renewing for more than one year at time. Your support helps make possible the wide array of GBC/ACM activities.

Address Service Requested

**First Class:
Dated Materials**

GBC/ACM is a non-profit educational and scientific society.
(781) 862-1181 - www.gbcacm.org

P.O. Box 465
Lexington, MA 02420



The Greater Boston Chapter of the

First Class
Presorted
U.S. Postage
PAID
Boston, MA
Permit Number
56536



The Real Times

Vol. 45 No. 4

www.gbcacm.org

December 2005

GBC/ACM January 2006 Meeting

Joint Meeting with IEEE Computer Society

The Scent of a Web Page: Five Types of Navigation Pages

Speaker: Jared Spool, Director, Founding Principal, User Interface Engineering (UIE)

Date/Time: Thursday, January 19, 2006, 7-9 PM

Location: IBM Innovation Center, 404 Wyman Street, Waltham, MA

You work hard providing top-notch content on your site. Will your users find it? If they don't find it, all that effort is for nothing. What can you do to guarantee that users find the content they've come looking for? You'll come away with the most up-to-the-minute research on how users actually navigate sites.

As users traverse through a web site, they encounter different types of pages, each with unique functions. The designers of the best sites understand the special functions of each type of page on a web site, and design the pages individually based on their specific purpose.

Research has uncovered three ways to predict when users will fail finding the content they desire. Jared Spool will show you what these three predictors are and how to counter the effects in your design.

Jared Spool will share the secrets behind successful designs including Lands' End, the Bureau of Labor and Statistics, CNN, and the BBC. You'll learn why trigger words are critical to users successfully finding their content, why the best sites prevent users from using Search, how exposing a site's hierarchy can increase the success of the user, how designing longer pages helps users find what they seek, and how to best use lateral links and breadcrumbs.

Continued on page 3

Visit the GBCACM website for last minute meeting changes: www.gbcacm.org