Banks of the Boneyard

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INSIDE

Network Management

Chris Gressley will explain the tools that CCSO uses to manage the campus network.

Thursday,
October 6, 1994
5pm, 1320 DCL

Internet Hypermedia: Mosaic and the Web

by Doug Beeferman

Hypermedia describes the electronic integration of various media — text, graphics, sound, and video, to name a few — and the presentation of the data across a collection of cross-referenced documents. It wasn't until the HyperCard application for the Apple Macintosh that hypermedia was widely authored and used by novice computer users: teachers and students alike at nearly all levels were able to create educational "stacks", the HyperCard term for hypermedia document collections. Programs that followed in HyperCard's footsteps were of the same paradigm, offering users the ability to browse, author, and interconnect "stack"-like documents on their local machines.

> the world wide web is aimed at creating ...truly global hypermedia

But what if such a "stack" is allowed to span many machines; indeed, what if it may be distributed over the entire Internet? That's what a scientist named Tim Berners-Lee envisioned in mid-1989 while at the European Laboratory for Particle Physics (CERN) in Switzerland. While addressing a local demand — CERN's need for improved communications within the Laboratory — he sought a solution to a more general problem. He initiated and headed what became known as the World Wide Web project, aimed at creating the basic architecture to support Internet-based distributed hypermedia — truly *global* hypermedia.

World Wide Web (WWW) came to describe the subset of the Internet that serves hypermedia documents to the whole Internet. On the Web, information providers use server programs that comply with HTTP (hypertext transfer protocol) to serve information to client programs (Web *browsers*) elsewhere on the Internet. On the server side there may be documents of all kinds, including documents in a special text description format called HTML (hypertext markup language) that facilitates the expression of hypertext. Links within HTML files may reference other documents anywhere on the Internet through the use of text strings known as Uniform Resource Locators (URLs). On the client side, browsers display HTML files and possibly other document types, allowing users to navigate from site to site in search of information by following these links.

By January, 1993, a few Web browsers existed but were underpowered, and there 6 ➧

natural born killers and Information Technology

by Chris Trimble

A discussion of Oliver Stone's latest film, *Natural Born Killers* , doesn't immediately seem appropriate for the *Banks.* Upon further investigation, however, the film becomes completely relevant. The film satirizes modern media—television and newspapers, in particular—in the context of a news story ripe for sensationalistic coverage: two mass murderers (Mickey and Mallory Knox, played by Woody Harrelson and Juliette Lewis) at large. In particular, the film gives us Wayne Gale (Robert Downey Jr. with a British accent) and his television show (called *American Maniacs*) that tracks the killers' every move. So why is this film relevant, if it's playing on the media of today and not concerned with computers? Well, it's important to realize that the dominant media forms are shifting in the direction of the computer mainstream: information technology today will be the televisions and newspapers of tomorrow. With all these new media emerging, it's worthwhile discussing what they will be used for.

Let's talk about television and newspapers. The most important thing 4 ➧

From the Chair by Alan Braverman

If you are like me, every time you hear the term “information superhighway” on CNN, you want to barf. What’s all the hype about, anyway? We “surf” the Net every day here at UIUC, but it never looks like the cover of *Wired* magazine.

The Internet is currently celebrating its twenty-fifth birthday, marking the installation of the first four network sites on the ARPANet in 1969. But the mass media has only been really interested for about a year, now that the Net has become more visual. It looks cool.

When I open *Time* magazine to read their latest Internet story, I see terms like “bulletin board” and quotes from phone company PR people, and wonder which Internet they are talking about. It’s been years since I logged in to a bulletin board, but I know that they are actually referring to Usenet newsgroups. Especially amusing is *Time*’s attempt to explain the terms “flame” and “netiquette.”

Also distressing to us computer science types is the misuse of the word “hacker” by those evening news anchors. “Crackers” are people who misuse computers and Net access, crack codes, or what-have-you. “Hackers” are people who have a knack for cleverly solving computer-related problems, and explore computer systems for the sheer sake of obtaining knowledge.

Then there’s *Wired* magazine. I’ve come to the conclusion that *Wired*’s purpose is to glorify the image of geeks with money. Take anything you read in *Wired* with a quart of salt. *Wired* claims to live on the edge of the Infobahn (or is it the *I-way* now?). But I have to wonder who is doing their research when I see a rather disturbing reference to “Mosaic home pages” in the magazine’s Wired/Tired section (which is another story in itself). The phrase “Mosaic home page” confuses the actors in a client/server environment. Mosaic is only one of many clients capable of viewing said home pages, which reside on Web servers. Much preferred terms include “WWW home page” or “Web site,” and so forth.

Don’t get me wrong; I love Mosaic more than anyone. But, as you can imagine or maybe have experienced, when one is close to a project, it is disturbing to see its name used incorrectly. I believe that NCSA Mosaic is directly responsible for the present media blitz, and I’m proud to be a part of it. It should be noted, however, that many of the pure text offerings of the Internet have been around well before graphical browsers. Now that the Net has a new image, old ideas and projects are getting a second look. But they are often presented in a context that implies Mosaic is a part of them. That puts the members of the Mosaic project in an awkward position, with respect to the rest of the Internet community.

This issue of the *Banks* is somewhat “Mosaic-saturated,” as Doug Beeferman, our editor, put it. Doug overviews Mosaic and the Web in our cover story; Chris Trimble discusses the future of mass media and information technologies; and we even interview Kim Stephenson, one of Mosaic’s developers. Needless to say, I’ve been assured that our newsletter is light on hype and heavy on content.

How we spent our summer vacations

A cross-section of ACM summer experiences

Amy Ryan worked at **AT&T Bell Laboratories** in New Jersey, where she was involved in protocol design and analysis of ISDN endpoints. She worked primarily with multimedia and videoconferencing systems across telephone switches. She highly recommends Bell Labs as a place to work for a summer internship.

Jay Kreibich and Joe Gross both worked at **Argonne National Laboratory** in Argonne, Illinois. Jay was in the Summer Research Participation program at the Lab’s Mathematics and Computer Science Division, where he helped build their CAVE VR system. Joe was a system administrator in the Center for Mechanistic Biology and Biotechnology, where he supported scientists who were doing gene sequencing for the human genome project.

Norbert Burger worked as a research assistant at the Environmental Acoustics Group at the **U.S. Army Civil Engineering Research Lab** in Champaign, writing code for Wildfire, a program that manages resources used in controlling wildfires. He also had the good fortune to take a couple of trips out to Washington state to support his work.

Castedo Ellerman interned at **Microsoft Corporation** in Redmond, Washington, where he designed and implemented a test suite for Microsoft’s Telephony Application Programming Interface (TAPI). He claims that Mt. Rainier, a 14,410-foot peak just outside of Seattle, will satisfy all your Illinois mountain-climbing deficiencies.

Eric Adams spent his summer down in Dallas, Texas, working for the Defense Systems Electronics Group of **Texas Instruments**. He designed information systems for use by a group split between Europe, Dallas, and Asia.

Luke Nosek was an undergraduate research assistant for the **Concurrent Systems Architecture Group** here in the Department of Computer Science, working to design a test fixture for the group’s Planar Adaptive Router project. Luke encourages undergraduates to talk to their professors about research they’re interested in.

Chris Hargarten was a Consulting Intern at **Ernst and Young LLP** in Chicago’s Sears Tower. He took work from a variety of clients, doing everything from programming to CASE design and prototyping, not necessarily in that order.

Dan Simms worked as a research programmer for the Software Development Group at the **National Center for Supercomputing Applications** in Champaign working on the NCSA Collage collaboration tool for Windows. “Illinois would be great,” he laments, “if only it were somewhere else.”

And speaking of somewhere else, Ed Burns worked for **Arco Chemical Company**, an American firm, in Vienna, Austria and Duesseldorf, Germany. “My main reason for going was to avoid hearing about O.J. Simpson,” he says cryptically. And he didn’t. But he did visit the real Legoland theme park. Ed recommends the College of Engineering’s International Minor program and mentions that you can find information about it at the URL `http://www.cen.uiuc.edu/COE-Info/international/work.top.html`.

SIGCAS

by Ben Gross

SigCAS is a "forum for computer specialists, those in related fields and public at large to gather and report information, exchange ideas, and arouse concern about impact of computers and society. The main concern is ethical and philosophical implications."

SigCAS has had two **enlightening** meetings so far this semester. Our discussions have included topics such as encryption, the status of intellectual property on the net, ethics in system administration, and privacy in email. Each meeting, members bring in recent news articles and net.clips to rant about or to discuss. So stop by during the next meeting and bring any nifty ideas, articles, and friends, *etc*., with you. Meetings are Thursday evenings at 5:00pm in 1102 DCL.

SigMicro

by Jason Lindquist

As the fall rat race begins, the Special Interest Group for Microcomputers is off and running. Work continues on the Computer-Assisted Telescope System in conjunction with the Astronomical Society. The IBM PC code that finds a star's location in a database and drives the scope's mechanics is being reviewed, with plans in store to make it more robust and to give it a spiffier interface. A Windows version may be in the works should any kindhearted soul donate a '486 laptop to the cause.

The Lego Computer project, another holdover from last year, also has improvements planned for it. Last year's binary adder is to become something more significant this year, with the possibility of a full arithmetic unit somewhere on the horizon.

SigMicro has attracted numerous freshmen to the ranks of its membership, and with new people have come new ideas. One of these is a "really cool" Bulletin Board System (BBS) program. This project on the PC is meant to introduce beginners to programming, and more advanced members to the nuances of handling serial I/O, disk, and memory resources in a potentially multi-user PC-based environment.

The MBONE, or Internet Multicast Backbone, is a way to *broadcast* compressed real-time video and sound to computers connected to the 'Net, in contrast to the normal one-sender, one-recipient method. Sometime in the near to distant future, it will play host to a broadcast of a concert by the Rolling Stones. SigMicro is planning on hosting a public showing of it, live as it happens, once a firm date is announced. We'll also be hosting a workshop on C programming within the next month, and developing a tutorial for searching out information on the World Wide Web.

SigMicro meets every Thursday at 8:00 in 1102 DCL. Come join us! Bring ideas, bring suggestions, bring Pez, and bring yourselves.

SIGSoft

by Alan Braverman

Rumors are spreading like a Luke Nosek fork bomb all over DCL about that much-talked-about vaporware tallyho adventure, Realms of Darkness. ROD is a multi-user, networked, fantasy adventure game, whose purpose is to prevent D&D fans from ever studying again (networked D&D fans, that is).

Originally designed as a Macintosh application, we are moving ROD to the world of Unix running the X Window System. C programmers interested in a real-time, high speed, animated, information superhypeway, slash-'em-up killer experience should bring their pocket protectors to the ACM office this Wednesday.

Other SigSoft projects for this semester include an enhanced version of the "talk" command for X and VT100 environments; and other games and utilities for several platforms. New members are welcome at all meetings; programming experience is not required. Meetings are Wednesdays at 6pm in 1102 DCL; we usually gather in the ACM office beforehand.

SigBio

by Arwin Levinson and Joey Lasky

SigBio is the special interest group for computer applications in biology. At the last SigBio meeting we discussed an article on using structural homology to model proteins. Our next project will be to use the algorithm provided in the article to write a program in C or C++ which will compare sequences from two proteins. For those interested in this and other biocomputing applications, please join us at our meetings in 1102 DCL every other Thursday at 7:00pm. Our next meeting is Thursday, October 13.

Official ACM SigList

Coordinator:
Kai Mantsch mantsch@uiuc.edu

SigArch:
Jonathan Stark sigarch@uiuc.edu

SigArt:
Mike Kreger sigart@uiuc.edu

SigBio:
Arwin Levinson sigbio@uiuc.edu

SigCAS:
Ben Gross sigcas@uiuc.edu

SigGraph:
Ryan Grant siggraph@uiuc.edu

SigMicro:
Jason Lindquist sigmicro@uiuc.edu

SigMusic:
Ed Burns sigmusic@uiuc.edu

SigNet:
Jay Kreibich signet@uiuc.edu

SigSoft:
Alan Braverman sigsoft@uiuc.edu

SigUNIX:
Luke Nosek sigunix@uiuc.edu

SigVR:
A.C. Patel sigvr@uiuc.edu

ACM Members are
cordially invited to the

ACM Fall Picnic

Sunday, October 9
(that's 2 days after Pulp Fiction comes out)
Noon-4pm

North Pavillion
Crystal Lake Park, Urbana
contact Jeff Thompson (jwthomp@uiuc.edu)

◀ 1— Natural Born Killers... Continued

to notice about this kind of mass media is that you can't talk back to it. Sure, you can mail in a letter to *The Post* saying that you think headlines like "Ivana: 'Donald is a Jerk'" are despicable, but your letter isn't going to have the same presence that the 150-point headline on the front page has. Same thing with television. Oftentimes they'll have an address you can write letters to or a 900 number you can call with your comments. But your response will never take the same priority that their stories and opinions take. This unidirectionality is the fundamental problem with the mass media of today and it is at fault for most of the "junk-food for the brain" (as Wayne Gale says) that comes our way. Stories in today's mainstream media that actually inspire discussion or a desire to talk back to the medium are usually bad from the point of view of the market-hungry editor or producer. Stories *have* to be about shallow topics—such as mass murderers like Mickey and Mallory Knox on *American Maniacs*—and not inspire much discussion, or else the medium falls apart. When a viewer or reader does not agree with what a medium has to offer and has no means by which to make his own opinions known, he will ultimately turn off the television or close the newspaper out of frustration.

Notice that the editorials (opinions that are deemed such and invite response) are usually kept to two columns of print out of a whole newspaper, and that shows like *Meet the Press* or "Town Hall Meetings" make up less than 5% of the total programming on television. Seventy or so people can participate in a "Town Hall Meeting," while the millions of viewers can't express their opinion equally through the medium. The problem is not that the masses don't want to think; the problem is that they're unable to say what they *do* think in such a way that many others can hear—that's why the shows on television generally aren't intelligent.

Relatively newer technologies such as CD-ROMs and the World Wide Web are susceptible to the same problem, but only the Web has the potential of avoiding it. A CD-ROM is an outlet of information that doesn't have a true and equal inlet for response. If newspapers and magazines move to distributing CD-ROMs periodically as their medium instead of paper, the same problem ensues, because the magazine editors are still acting merely as information *providers*, and only the physical medium will have changed. The Web, however, could be a two-way street. Every user can make opinions known, and to everyone else, through Web pages. However, there's an obvious problem with precedence in these opinions on the Web. For example, if your Beatles fan page is connected to the NCSA home page, you're going to get a lot more viewers than an Anti-Beatles page that's connected to the `stupid.com` home page. There is hope: a new feature called Group Annotations slated for Mosaic will allow users to post annotations at the end of a page that are seen by everyone within a workgroup. If the concept is carried further, and the group annotation server is used by the whole Web community, we have *global* annotations. In this case, the Web becomes a viable medium in which discussion can occur and in which ideas can be expressed by everyone. If you disagree with Alan Braverman's claims that The Bad Examples are the best rock group in the world, for example, you can put your comments right at the bottom of his Bad Examples home page.

To abolish the junk on television from future information technology, and have a "media" that is intelligent, informative, and allows each user to express his or her opinions, we need to establish media that can go two ways. The USENET is a really great example of a medium that everyone can participate in equally (well, as long as the group isn't moderated.) The LBL multicast tools, such as Visual Audio Tool (an audio conferencing program for workstations), WhiteBoard, and nv (a video conferencing tool), allow everyone to participate. You can have *real* "Town Hall Meetings," because that is the kind of interaction that this technology promotes. This medium also has built-in checks against programs like *American Maniacs*, since there is almost no way to tolerate having just one reporter asking questions when every person has the technology to join in. Future media must be interactive if we are to avoid the society that *Natural Born Killers* plays upon.

The Banks is an interactive medium and welcomes response. If you have something to say about information technology and the future of mass media, send it to us and we'll try to print it in the next *Banks*. If we can't, I promise to give your opinion its own Web page linked from the page for this issue, so you can have as much say in the matter as I do. Hey, if I didn't do this, I'd look like a hypocrite, now wouldn't I?

:-)

The Banks Challenge will return next month! Same Bat-Channel, Same Bat-Time.

The Banks of the Boneyard

The **Banks of the Boneyard** is a student publication of the Association for Computing Machinery and does not necessarily represent, in whole or in part, the views of the University of Illinois, its faculty or students, the Department of Computer Science, or the National Association for Computing Machinery.

Newsletter Staff

Editor:
Doug Beeferman
Design:
Chris Trimble

The Association for Computing Machinery at UIUC
1225 Digital Computer Lab, MC-258
1304 W. Springfield Avenue
Urbana, IL 61801
(217) 333-5828
Faculty Advisor: Sylvian Ray

For more information, try:
`ph acm return all`
or visit our home page at
`http://www.acm.uiuc.edu/`

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SigNet

by Jay Kreibich

SigNet is the Special Interest Group interested in computer networks. This year we are continuing our DNS Redirector project in collaboration with CCSO. DNS is the protocol used to translate host names (such as “sleepless.acm.uiuc.edu”) into the IP addresses (such as “128.174.38.215”) the computer can understand. The DNS project takes in DNS requests and redistributes them to operational campus DNS servers. If a campus DNS server goes down, our system will be able to react and redirect requests. This will greatly improve DNS services should one of the servers go down.

Currently the project is able to redirect requests, but it does so unintelligently. If we can get interested people involved and things go well this semester, we hope to have the code ready for a campus-wide test next semester. For this project we are especially interested in people who want learn about very low level networking and distributed systems.

Other projects we would like to explore this semester include a multicast text based conferencing system called MUMBLE. We hope to explore multicast networking in an attempt to better understand efficient uses of new technology. This is a new and open project. Anyone who is interested in learning how to program with computer networks is encouraged to come out and get involved.

This semester we hope to continue our past successes with workshops on TCP/IP networking theory, and UNIX network programming, along with introductory workshops on various network services. We meet every Wednesday at 7pm in 1102 DCL.

SigUnix

by Luke Nosek

SIGUnix, the Special Interest Group for UNIX operating systems, will be starting off the year with several interesting projects and informative workshops, but is in need of active members to pursue them to completion. Currently, we are working on the Illinet-Mosaic interface project, which will allow you to access the Illinois library network using a WWW Browser such as Mosaic, offering a graphical user interface rather than the current text-based one. If the result is good enough, our work may be adopted by Illinet sites across the state.

We’re also considering doing workshops on several topics. Some being considered are: intermediate level Unix tools (an overview of shells, scripting languages, etc.), the X Window System (how to customize your setup, different window managers, etc.), and writing and setting up HTML forms.

If anyone is interested in parallel processing, we might also consider doing something (the form of which is undetermined at this point) with the PVM distributed processing system currently installed on the several hundred engineering workstations.

Come to 1102 DCL on Wednesdays at 8pm if you are interested in helping out in one of our projects. If you don’t think you have the necessary background, remember that half the purpose of SIG projects is to learn; we’ll teach you what you need to know.

SigArch

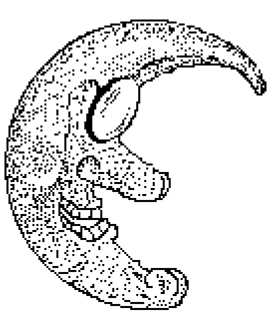
by Jonathan Stark

The Special Interest Group for computer architecture is getting a head start on Engineering Open House this year by starting three new projects. These are meant to be quick and easy projects to give our new members some experience in electrical design. We’re currently working on a set of message chase lights, a rotating color cylindrical display device, and a simple Field Programmable Gate Array-based sound generator. All three of these projects are geared toward beginners, and no prior experience or knowledge in electronics are required to contribute to any of them.

SigArch is also researching a number of concepts that we hope will eventually become projects. A versatile telphone-computer gateway, a redesigned Apropos Computational Engine (ACE), an electronic nametag/badge, and a Liquid Crystal Display (LCD) driver are but a few of the projects we hope to start before the end of the semester.

We still need a lot of help on all of these projects, so if you’re interested in electronics, we’d love your help, regardless of your experience or current abilities. Our meetings are Tuesdays at 6pm in 1102 DCL.

we still need a lot of HELP on all of these projects



ACM Up All Night Crew

(partial listing)

Chair	Alan Braverman	acm@uiuc.edu
Vice-Chair	Ed Burns	e-burns@uiuc.edu
Secretary	Amy Ryan	eighmi@uiuc.edu
Treasurer	Norbie Burger	nburger@uiuc.edu
Membership	Jeremiah Johnson	jjohnso4@uiuc.edu
Social Chair	Jeff Thompson	jwthomp@uiuc.edu
Corporate Liason	Brandon Long	blong@uiuc.edu
Engineering Council	Greg Brauer	gbrauer@uiuc.edu
EOH Chair	Eric Adams	yesfan@uiuc.edu

were only 50 known HTTP sites on the Internet; these were very related problems, because a large Web user base would motivate better browsers and vice versa. The infrastructure for the WWW was in place, but something was missing from the client technology that prevented people on both sides from taking full advantage of it.

A new browser emerges

Free browser software called NCSA Mosaic would soon fill the void. Mosaic was originally developed by the Software Development Group of the National Center for Supercomputing Applications (NCSA) here at UIUC last year. A version for Unix (running the X Window System) came first, followed by versions for Windows and the Macintosh. The key features that distinguished Mosaic from earlier attempts at browsers were a compelling graphical user interface, pioneering support of inline images, external handling of non-HTML data types such as Postscript and video, and smooth integration of other Internet services (such as FTP, news, gopher, and WAIS) into the program.

Mosaic's good looks and great personality made Web navigation easy and Web publishing a compelling option for information providers. It certainly played a big role in growing the Web: By the Fall of 1993 the number of HTTP servers had jumped by an order of magnitude since the beginning of the year to 500, and there are now at least 2,000; downloads of Mosaic from NCSA's FTP server number over 2,000 a day.

Past and present ACM members have been actively involved in the development and support of Mosaic: former SigMusic chair Chris Wilson, now at Spry, Inc., co-authored the initial Windows version with former PC lab manager John Mittlehauser, now at Mosaic Communications Corp.; ACM chair Alan Braverman supported the initial X version and now develops for it with former SigUUCP chair Dave Thompson; SigGraph chair Ryan Grant develops for the Windows version; SigNet chair Jay Kreibich develops for the Mac version; Social chair Jeff Thompson and Jason Marshall support the X and Windows versions, respectively; and vice-chair Ed Burns works in many capacities with the X group.

The refinement of the freely available Mosaic continues here, while about a dozen corporate NCSA licensees are working on or have released commercial versions of the program. NCSA has also released HTTP server software for various platforms and plans to release additional tools in the future (see the interview with Kim Stephenson on page 7.)

Getting onto the Web

You may access Mosaic for X from within X on all Engineering Workstation machines (execute "Mosaic" from a command line), or from the Instructional Lab Sparcs in 1240 DCL. The Macintosh and PC versions may be found at CCSO sites across campus, usually in a folder or Windows program group called "Mainframe Connections". (Note that some CCSO PCs, such as those at the Illini Union site, do not run Windows.) You may use all three versions of Mosaic at the ACM office in 1225 DCL if you are an ACM member.

Using Mosaic is quite straightforward. Upon running the program you will enter the "home page" as designated by your machine's administrator; the home page is a jumping-off point of sorts, and from here you can typically go to other documents on the Web by following links that branch from the home page. Links are represented as "anchors" — underlined, highlighted text regions (and sometimes inline graphics) — on Mosaic, and to follow them just click the mouse on the anchor. If you wish to jump to a Web document that does not branch from the page you're looking at, select "Open URL..." from the "File" menu and type in the URL to which you wish to jump; we'll mention a few interesting URLs later.

If you have trouble getting started, you'll find that Mosaic's online help is extensive and just as easy to use the program itself; in fact, the manual (accessible under the "Help" pulldown menu) is itself a cluster of the Web.

Carrying On

Perhaps the most common use of the Web to date is as a means for institutions, student organizations, and other groups to set up and publicize their own home pages, allowing for centralized retrieval of group-related information for members and non-members. The ACM at UIUC has its own Web server, for example; give it a try at the URL `http://www.acm.uiuc.edu`. You'll find information about the various SIGs and their projects, information about ACM members, and even online back issues of the *Banks*! Dozens of other organizations at the University have set up home pages. You'll want to start at `http://www.uiuc.edu`, the University's main Web server, if you wish to explore all of these.

Personal home pages for individuals have sprouted up, too. Some list interests, current project descriptions, and favorite quotes, hypertext analogs to what are provided through ".plan" files and the "finger" service; other home pages go further, providing political commentary, randomly generated quotes, photos of their subjects, and even links to résumés. You'll find a list of some student home pages at `http://www.cen.uiuc.edu/~mg7932/uiuc.people.html`.

Another frequent use of the Web is for staging multimedia *exhibits*. The Library of Congress, for example, has sponsored educational exhibits on topics ranging from the Dead Sea Scrolls to the archives of the former Soviet Union, combining the same text, graphics, and sound that you'd find if you visited their "real" exhibits in Washington, D.C. A Web page called the "Expo" serves links to a variety of multimedia exhibits; visit it at `http://sunsite.unc.edu/expo/ticket_office.html`.

This process of jumping from document to document may be called "browsing," but thanks to innovative Mosaic features such as "forms," the Web experience is increasingly an interactive one. Forms are simply collections of input items that can appear in HTML documents: editable text boxes, lists of things to choose from, buttons, and so forth. The reader may fill out a form and submit it back to an HTTP site, where it is processed by a program complying with what's known as the Common Gateway Interface (CGI) and a result is (possibly) returned. Forms on the client side and CGI scripts on the server side frequently act in tandem as a means by which the user's input can do meaningful things, such as allowing user feedback or processing credit card information Stop by `http://cougarxp.princeton.edu:2112 / bpd/webweather.html`

8

Meet the Mac Mosaic Maven

Kim Stephenson works at the Software Development Group of the National Center for Supercomputing Applications (NCSA). She is project lead and developer for the Macintosh version of the Mosaic software.

After receiving a bachelor's degree in biological sciences and a secondary education teaching certificate, Kim taught high school science for four years before taking up programming full time. Kim has been working as a developer for eight years and has been at NCSA for four. In June of 1993, shortly before the first alpha release of Mac Mosaic, she joined the project. With the release of the official Mac Mosaic 2.0.0 just around the corner, Kim is busier than ever, but she still found time to talk us briefly about Mosaic and the World Wide Web.

BANKS: Do you know what the user base size is for Mosaic?

***KS**: Downloads from the NCSA server are running at about a half million as of the end of August. This does not take into account all the people who have downloaded from mirror sites. The Mac downloads are at about 162,000.*

BANKS: What Web-related software other than the Mosaic client and HTTP server has NCSA released or plans to release? Does NCSA plan to release secure versions of Mosaic and httpd to support commerce on the Internet?

***KS**: There will probably be other Web-related software in the future, but I can't say for sure. As for a secure Mosaic, it's part of the plan, but I don't know what the timeline is for it right now.*

BANKS: Spyglass and others have licensed Mosaic for commercial redistribution. Do you think having high-quality freely available versions of the software, as you do now, threatens these commercialization efforts?

***KS**: I personally believe there is a place for both the commercial versions with all the support, bulletproofing, etc., and the free version.*

BANKS: With forms and CGI scripts, the Web was transformed into a more interactive medium, in which users could do more than simply "browse". Do you see the future Web as something of an interactive replacement for such unidirectional media as television and newspapers?

***KS**: Not until the net is more accessible by the average person from a home computer. One of the obvious goals here is make information more readily accessible. This means both the unidirectional reporting of events or information as well as information on demand such as what you'd find in a library situation. As the Web stands currently, information on demand is only marginally available, through things such as CGI scripts and databases. We need to do much more to make searching the whole Web easier, so that a user can enter something like "find all the information on black holes available on the Web."*

BANKS: So is NCSA taking steps to make the Web more accessible to users without a lot of technical knowledge — for example, to people who want to put up a home page but don't want to learn about HTML?

***KS**: We are trying. We don't currently have plans to write an HTML editor. That is being done in the commercial market. We try to make sure that the FAQ, How To, and other documentation is available to make those tasks as easy as possible.*

BANKS: How likely is it that we will see public annotations (in which a single annotation server is used by all Web clients) in the future?

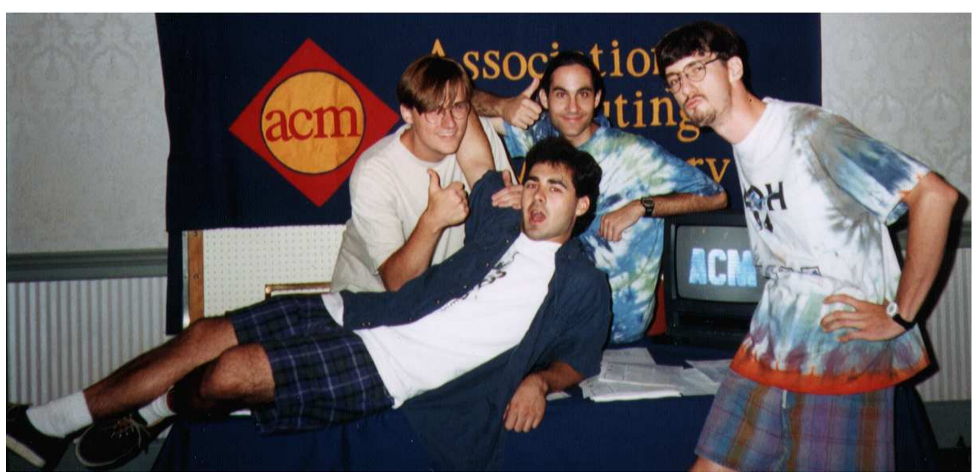
***KS**: That's an unknown that this time. We've been talking about it for quite some time so it will probably be done some time in the future but there are no guarantees at this point.*

BANKS: Do you feel that it is important that the Mac, Windows, and X versions of Mosaic look alike and have the same feature sets, or would you rather see versions that exploit platform-specific features at the expense of some consistency?

***KS**: Both, really. It's important that features that can be done across all three platforms be done, especially those that would otherwise cause a document not to be visible on another system. For example, if we implement tables on the Mac, tables need to be done on all three. Otherwise those using PCs or X Workstations would be unable to view documents that take advantage of that feature. On the other hand, we should be able to exploit system features that don't inhibit the other two platforms. In fact, we do. A good example of this is the speech recognition capability in the Mac version.*

BANKS: So what features can we look forward to in the next Mac Mosaic?

***KS**: Well, there are a number of user interface improvements coming in the 2.0.0 release. Also, there will be Common Client Interface (CCI) support, which will allow Mac Mosaic to have a two-way communication with other applications.*



Expertly manning the ACM booth at Engineer's Night are (from left to right) Chris Trimble, Alan Braverman, Joe Gross, and Ed Burns.

◀6— Mosaic . . . Continued

to see an interesting interface to weather reports for regions across the country.

This only scratches the surface of what can be done. For a list of links to what are, in the words of NCSA, “exemplary demonstrations” of Mosaic and the Web select “Demo” from Mosaic’s “Help” menu.

Information Overload

On the Web, unlike other media, unsolicited information is also unobtrusive. There is plenty of “junk mail” out there, but you do not have to sift through it in the traditional sense: Unless you get sidetracked (which seems to be as much a feature of the Web as it is a drawback), you won't spend time reading pages of no interest to you.

On the other hand, it is not always easy (and sometimes it’s not even possible) to reach the pages you do want to read, *i.e.* to find information that answers a real question or addresses a real need. Though “browsing” the Web by hand can lead to interesting answers to questions that you never asked, it is not often a good approach for the ones you do ask. Search engines to date aren’t fast enough or exhaustive enough to put the entire Internet at your fingertips, and even after the inevitable leap in technology and improved organization schemes handle these concerns, there isn’t enough content out there yet.. And it’s not clear whether the truly useful content of the future will be free.

As for Mosaic itself, it is perhaps the best interface imaginable to what’s out there, and as a Web client it is unmatched in its power and ease of use Its success can be measured by its pervasiveness: it has reached such a level of ubiquity that people instinctively associate it with more generic constructs such as HTTP servers (frequently called “Mosaic servers”) and HTML documents (“Mosaic pages”), and it has received applause in periodicals ranging from *Wired* to *The Wall Street Journal*.

- If you’re interested in exploring novel uses for Mosaic and CGI scripts, see the SigUnix update on page 5 and stop by a meeting.

- If you’re interested in discussing issues such as security, privacy, and the availability of free information on the Web, check out the SigCAS update on page 3 and stop by a meeting.

S.I.G. Graph

by Ryan Grant

SigGraph is the special interest group dealing with computer graphics. We are active in several graphics-related projects this year.

We are working on an animation for Engineering Open House, as we did last year. This year’s will have a Robotech theme; we’re gathering together the models needed to design a storyboard at the moment. The animation is hoped to wow audiences with a soundtrack, too, in contrast to the serene space scene of last year.

Our Virtual Campus model is coming along. A couple buildings are on film and waiting to be chopped up into bitmaps. If you like Photoshop or designing CAD models, we need help gathering wireframe models of buildings on campus, as well as converting pictures to textures. DataRace, a multiplayer game designed after the cyberspace in Neuromancer, is undergoing some changes. We are currently integrating code developed over the summer into the program and finalizing on the program’s behavior. Finally, the rendering part of our MARF project works. MARF (what a great name! hope it sticks... **:**)) stands for Modeling And Rendering for *Free*. We're currently developing an object-oriented user interface for it.

In the near future we will have a presentation on Microcosm. Microcosm is a complete rendering and animation package, with an object oriented design and interface language. It can render in many different styles, including any that are programmed into a scene by redefining object behavior. SigGraph hopes to buy a copy of Microcosm in the future, for use in the ACM office. Future workshops on general graphics programming and other animation packages are also planned.

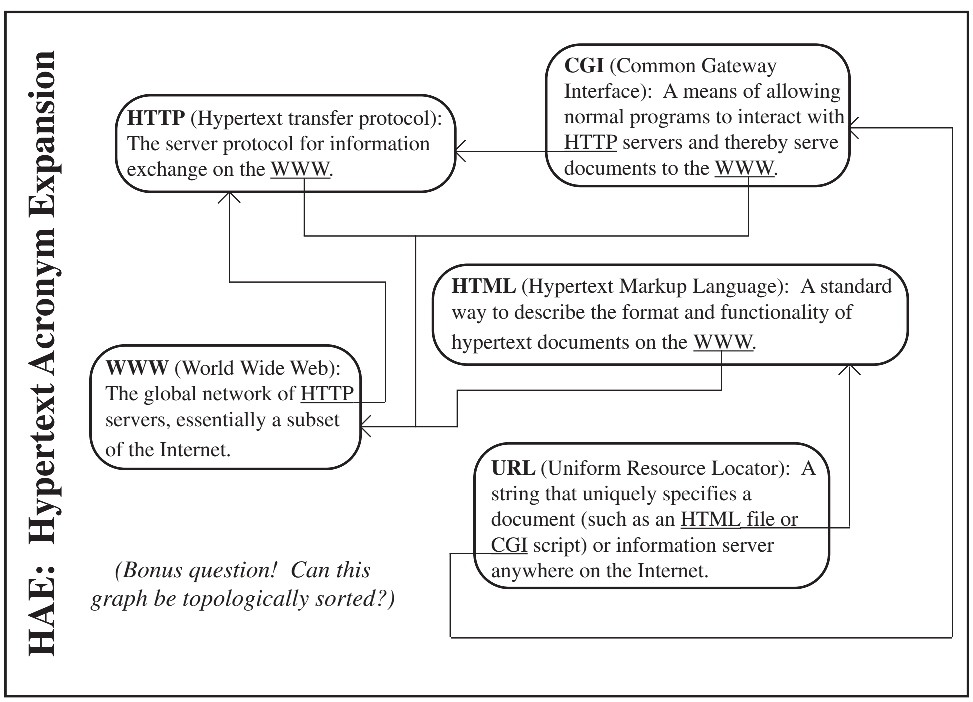
We have many new members this semester, so we have a lot of potential to get things done. If you’re interested in our current projects or have one of your own, come by and get involved. We meet Fridays at 5pm in 1102 DCL.

SigArt

by Mike Kreger

The ACM’s hottest group for artificial intelligence is going strong! With new members, new attitudes, and the same old shadow of HAL to live under, SigArt has launched into the new year. This year we’ve been covering the very basics of AI, so if you are just getting into the field, this is a great time to join.

We’re working on beefing up DOOM with neural network-based speech recognition, and have also been experimenting with genetic algorithms in another popular game, Corewars. Meetings are Thursdays at 7pm in 1330 DCL.



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- ☐ sophomore
- ☐ junior
- ☐ senior
- ☐ m.a. / m.s.
- ☐ ph.D.
- ☐ faculty / staff
- ☐ postdoc
- ☐ alumni
- ☐ other

special interest groups

acm's special interest groups (SIGs) focus on particular aspects of using computers and the computing community.

(circle some that you're interested in!)

sigarch	architecture
sigart	artificial intelligence
sigbio	biocomputing
sigcas	computers and society
siggraph	graphics
sigmicro	microcomputers
sigmusic	music
signet	networking
sigsoft	software development
sigunix	unix programming
sigvr	virtual reality

MEMBERSHIP TYPES

return form with check or money order payable to the ACM at UIUC

- ☐ $40 for eight semesters
  membership begins and ends sept 1
- ☐ $22 for four semesters
  membership begins and ends sept 1
- ☐ $12 for two semesters
  membership begins and ends sept 1 or jan 1
- ☐ $14 for two semesters
  off campus newsletter subscription mailing begins and ends sept 1

ACM NATIONAL MEMBER

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- ☐ no
- ☐ currently applying

1. staple check or money order to inside of this application

2. fold into thirds. be sure the acm address is on the front and your return address is on the back

3. drop into a campus mailbox, or normal mailbox with postage if off campus.

hold it!

WE NEED YOUR HELP!

if you're interested in helping with any of these acm activities, please circle them

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