Banks OF THE Boneyard

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for computing
machinery
university of
illinois student
chapter.

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Terror! at IEEE NPC '95

by Doug Beeferman

Do you ever find yourself pining for something a little more violent than Othello or Connect Four as you code your CS225 machine problems? Does the thought of swarming insects make your skin crawl? Then read on.

In a typical programming contest, teams code up solutions to five or six problems independently. The winner is usually the team that finishes first, submits the most correct solutions, or writes the fastest code.

Students at the IEEE chapter of the University of Texas at Austin had a different idea in mind when they created the National Programming Contest (NPC) four years ago. NPC is an annual invitational contest held in Austin in which participants truly *compete* . Each team of three students writes a *player* for a two-player game, and a tournament between the players decides the winner.

Gameplay takes place in a client-server fashion, with a common server program accepting and interpreting commands from two team-specific clients. The NPC staff provides the server, as well as code to handle the networking, graphics, and other grungy details, leaving the core client algorithm development (in C++) to the participants.

This year's NPC was held on March 25 and 26 at an IBM site in Austin. Dan Simms, Norbert Burger, and Doug Beeferman represented UIUC. The name of this year's contest was "Ants": each player controlled an army of ants on a square playing field dotted with randomly distributed piles of food. Ants could move around and pick up, eat, or drop food, all the while losing health and fighting and defending against enemy ants. Each team had a home base, and the goal was to bring food to the base as quickly as possible while keeping the army alive. A game ended after a team was wiped out or after time ran out, with the final score for each team being a combination of the number of living ants and the amount of scavenged food.

Sixteen schools from as far east as the University of Puerto Rico and as far west as Stanford sent teams to this year's NPC, and there was at least as much diversity in the algorithms they chose for their players. Some teams were belligerent, focusing on attacking and forming blockades around their enemy's home base. Some were more defensive, concentrating on acquiring food close to home and returning quickly to base.

UIUC's approach was a division of labor. Our army of ants was divided into teams that were responsible for scavenging for food, relaying food back to the home base, fighting, and a combination of these.

Dan Simms implemented a class hierarchy that consisted of an upper level of management in the control of the ants and a modular framework for adding groups that report to this manager. He also wrote code for the scavenging module:

5 ➧

A look back at EOH '95!

by Eric Adams

Once again, Engineering Open House was a success for ACM@UIUC. Two of our SIGs earned a total of four awards this year. SigGraph placed twice: once for the Virtual Juggler project, and once for the introduction to and demonstration of computer graphics algorithms. The joint effort between SigMicro and the Astronomical Society, the Computer Aided Telescope System, also placed twice: once in the standard EOH category, and again in the category for the Lockmiller Award for Robotics and Artificial Intelligence.

Over sixty ACM members helped out with different aspects of EOH '95. It goes without saying that the atmosphere was intense, from the final preparations on Thursday night, to the presentations themselves, to the excellent post-EOH party sponsored by 1995 EOH Chair Jason Silcox and his roommates.

If you would like to see some pictures from EOH, Joe Gross has made some available at `http://www.beckman.uiuc.edu/groups/biss/people/jgross/eoh/beforepix.html`.

This has been the second year that I have managed ACM's EOH activity, and I have really enjoyed my work. Unfortunately, I'm graduating and won't be able to contribute next year, so I'm seeking a replacement. If managing, negotiating, fundraising, and attending regular EOH meetings are your ideas of a good time, drop me a line at `yesfan@uiuc.edu`.

INSIDE

From the Chair

by Alan Braverman

Welcome to my final *Banks of the Boneyard* appearance as the ACM chairperson. I'd like to first thank all ACM members who contributed to this exciting year.

Also, thanks go out to Purdue University's Professor Gene Spafford for speaking at another blockbuster general meeting. Professor Spafford is well-known as the co-author of O'Reilly's *Practical UNIX Security*, among many other publications. He is also the director of Purdue's COAST Project and Laboratory (Computer Operations, Audit, and Security Technology). Spafford discussed *Software Forensics* at our meeting, outlining experimental attempts to identify computer culprits by some of their fingerprints—the source code they leave behind.

Our meeting was broadcast across the globe via the Internet MBONE with great success. Viewers as far as Norway received live audio and video, and communicated amongst other MBONE users using SigNet's MUMBLE program. Thanks to Jay Kreibich for handling the technical details.

Our final ACM general meeting for this year will feature one-half of the original NCSA Mosaic development team, Eric Bina, who now telecommutes to work (from Champaign to California) for Netscape Communications Corporation. Also, watch `uiuc.org.acm` for the many upcoming social events in late April.

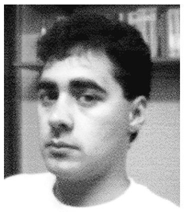
Finally, it's time to say congratulations and, in some cases, *ciao,* to our members who are graduating and moving on!

Some of them are entering industry: **Julie Staraitis** is heading east to the semiconductor group at DEC in Hudson, Massachusetts. SigMusic chair and ex-secretary **Ed Burns** is going the other direction to Portland, Oregon, where he will found the successor to grunge, and, in his spare time, work for Intel. **Michael Alford** will join GTE Data Services in Tampa, Florida.

Other ACM grads are joining consultancies. **Eric Adams** and **Mike Blumenthal** are both joining Lante Corp. in Chicago. **Michael Myung** is starting at New Resources Corporation in Schaumburg.

Many of our seniors have chosen to continue their education at grad school. SigCAS chair **Ben Gross** will be studying Library and Information Science here at UIUC. Corporate Liaison **Brandon Long** is staying in the ECE department here at UIUC, with a graduate fellowship from NCSA. **Amy Ryan**'s off to the University of Washington to do research in computer graphics, though she says she's considered joining the Pro Aggressive Inline Skating Tour instead. **Doug Beeferman**'s going to Carnegie Mellon University to study speech recognition, NLP, and theory. SigVR chair **A.C. Patel** is starting medical school at Rush Medical in Chicago.

Of course, this is only a handful of ACM's Class of '95. Check out the summer issue (to be printed this August) for a more complete list of what our May grads are up to. Ciao!



Outgoing
ACM chair
Alan Braverman

Incoming
ACM chair
Jonathan Stark

Congratulations
to the '95-'96
top four ACM execs:

Chair: Jonathan Stark
Vice-Chair: Jeff Thompson
Treasurer: Norbert Burger
Secretary: Luke Nosek

ACM General Meeting

Eric Bina

Co-developer of the original Mosaic for X and software engineer for Netscape Communications Corporation

Eric will speak about (what else?) the World Wide Web.

Thursday, April 27, 1995. 5:00pm, 1320 DCL

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 International Association for Computing Machinery.

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Computer Science

SigNet

by Jay Kreibich

If it has to do with computer networks, SigNet is the place to be. Now that EOH has come and gone, we have undertaken a few quick projects to keep us busy before finals set in. We held a talk on April 12 called "How UIUCnet Works", and on the 19th we're doing the sequel, called "Network Programming", which will introduce basic network programming concepts in C under UNIX. The talk will take place at 7pm in 1320 DCL.

One other idea that has started to take form is the production of a short video detailing the workings of UIUCnet. Currently we are working on coming up with a story board. If you have any ideas, questions, or comments, please feel free to email us at `signet@uiuc.edu`.

SIGOPS

BY PAUL SWANSON

After a long hiatus, the Special Interest Group for Operating Systems (SigOps) is back in action. While we've only had a few meetings so far, everyone seems generally enthused about the discussions, and most are anxious to get their hands dirty writing an actual OS.

What's this group about, you ask? Well, the game plan right now is to analyze a specific operating system or operating system concept each week. From there, we'll hopefully get a few projects going in the near future.

If any of this sounds interesting to you, come to the weekly SigOps meetings, Tuesdays at 8pm in room 1102 DCL. No matter what you know, you'll walk out knowing more! For more information, email `sigops@uiuc.edu`.

Linux

by Mark Roth

The UIUC Linux Users' Group is a forum for Linux users at UIUC to get together, help each other, and collaborate on projects. At each meeting, we announce recent happenings in the Linux community, work on current projects, and discuss matters of interest to the Linux community here at UIUC. Linux is a free implementation of the UNIX operating system which runs on 386/486/Pentium or compatible PCs.

Our major project right now is the UIUC Linux Distribution. We are in the process of compiling all the sources and putting together a new distribution of the complete Linux system. The distribution will be aimed at the "power user" community, and is not meant to replace Slackware or other distributions with different goals. If you're interested in this project, feel free to get involved!

The LUG meets at 7pm on Tuesdays in room 1102 DCL. If you have any questions, feel free to mail `lug@uiuc.edu`.

Upcoming Events:

19 April, 7-10pm, 1320 DCL: SigNet network programming workshop

20 April, 8pm, 1102 DCL: Web Monkeys' special meeting time (this week only)

22 April, 8am-3pm, 1225 DCL: Paintball excursion (aka "Norbert Shoot '95").

22 April, 1pm, 252 Everitt: SigArch FPGA workshop, Part Deux

23 April, 1-5pm: ACM Spring Picnic (Location to be announced.)

27 April, 5pm, 1320 DCL: ACM May-ish General Meeting. Speaker: Eric Bina

29 April, time TBA, Turkey Run: ACM and Alumni Canoe Trip

4 May, 4-7pm, Grainger Quad: Engineering Society picnic

Rap wit' Sigsoft

by "Snoop" Alan B.

The Special Interest Group for Software Development has a new meeting time: We now meet every Thursday at 2pm at the ACM office. At our last few meetings, we have devoted more time than usual to discussion about our latest software development efforts. On the other hand, the design and implementation of Realms of Darkness, our networked fantasy adventure game, has slowed to a crawl. We plan to schedule an introductory workshop on programming in the X Window System. Watch `uiuc.org.acm.sigsoft` for the announcement.

Web Monkeys!

Web Monkeys is the newest ACM special interest group! These are some of the topics we'll be exploring:

- Creative web site design
- CGI scripting
- Secure form submissions with Netscape's Netsite Commerce Server (yes, ACM has one!)
- Virtual reality markup language (VRML)
- Sun's newest browser, HotJava, with executable content

Our next meeting is Thursday, April 20 at 8pm in 1102 DCL. If you're interested in joining us, stop by. For more info, email `banister@uiuc.edu` or watch our Web page `http://www.acm.uiuc.edu/webmonkeys`.

Libor unleashed!

by Kai Mantsch

Despite the claims of many less than reputable sources, the mysterious man known as "Libor" (LEE-bor) really exists. No, this is not just another unsubstantiated Libor sighting. In reality he is a lively and creative person who dreams of a potato-based cognition network and has a fascinating history that includes a dramatic escape from Czechoslovakia.

The question of his existence began with a "Libor sighting" posted to the Usenet newsgroup `uiuc.general`. Libor explains the origins of the story.

"I used to have really long hair, and I used to dress really wild. I would wear clothes that didn't, like, match...bright orange shirts with black and white camouflage pants. Then, last summer, I got this haircut and started dressing more conservatively. Someone drove by one day and saw me. They posted to `uiuc.general` and called it a "Libor sighting."

The sightings grew more frequent, and finally one poster asked, in desperation, "Who's Libor, and why's he called *Libor*?"

When friends claimed that they were going to meet Libor, they were frequently asked what they were really going to do. Not unlike Big Bird's woolly friend Snuffleupagus on Sesame Street, Libor never seemed to be around when his doubters were. It soon reached the point where the few electronic mail and newsgroup postings actually written by Libor were assumed to be elaborate fabrications.

If his antics aren't exciting, his history certainly is. Born in communist Czechoslovakia, Libor's father tried for many years to find a way to escape. After several failed attempts he managed to get a two week permit to vacation in Yugoslavia. This was no easy task considering his father's history of antigovernment activities, but he had friends in a permit office and, with the help of some forged documents, he was ready to leave.

Getting the permit was only a small part of the battle, however. If the government had even the slightest suspicion that he intended to escape, they would have revoked the pass without any hesitation (or justification!) If they tried to sell their house or make any other moves that would suggest leaving for more than a vacation, their chance would be gone. For this reason he never actually made the conscious decision to escape until the family was safely across the border.

Libor was seven years old when he arrived in Yugoslavia. The family lived in a tent in a recreational campground, surviving on the two weeks of vacation supplies that they had brought with them. Libor's father made money digging ditches and doing other odd jobs, and saved up enough for the next big step.

Leaving Yugoslavia was a much easier task, due to the vast numbers of people vacationing there. When they had enough money, the family headed for Austria where they lived in a slum of Vienna for another year. During this time they applied for political asylum in the United States... and they waited.

At last the papers arrived. By selling the car they were able to buy plane tickets and fly to New York. Here they lived in airports and train stations for another two weeks, totally homeless, while they called a long series of friends of friends of friends who might be able to help them. At last, on a long shot, they found someone near Chicago who was willing to pay for the plane tickets overseas, and would help them get on their feet again. They stayed with this family for two weeks until Libor's father, an electrical engineer, was able to find a job.

"I remember living in a basement then," says Libor. "We were just living in someone's basement... paying rent." The family carefully saved the money they earned and, just a year later, were able to buy a new house. After living briefly in Florida for another year, they returned to settle in Downer's Grove, Illinois, where Libor spent the rest of his childhood years.

Libor has always been excited by the changes and the challenges of life. "Life is so great," he says. "Even when it's bad, it's great because you know that everything is going to change again anyway. Some people fear change. They like everything to stay the same and they work hard to live in routines. I try really hard to avoid routines. If I get up in the morning and [urinate], shower, and then brush my teeth, the next day I'll brush my teeth in the shower just to be different."

What can we expect next from Libor? In his own words, "I don't know. About fifty percent of the time I say, 'I don't know' even if I do know just to avoid a long, difficult explanation." Okay, Libor, now tell me again about that potato network?

SigArch

by Jonathan Stark

SigArch is looking for a few good people. For what? For the most impressive fiasco of the year! We will be dimming the lights of the entire campus on the night of Saturday, April 31, and we need your help.

What will it involve? Well, some of us won't be coming back from this one. The details, as usual, have yet to be worked out, but the tentative plan includes shoving some freshmen in the powergrid over at the Abbot power plant. (Volunteers, please mail me ASAP so that we can determine whether you are a good conductor. Please remember that only freshmen are being tested at this time.)

The rest of us will serve as decoys to keep the police from interfering with this exciting bit of science. Group A will be rewiring all of the traffic lights in the city. Group B will be developing a Tesla coil to hurl lightning bolts at Group A. And Group C (which I will lead), will be watching the whole thing in awe.

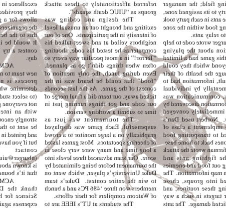
As always, if you are caught, SigArch will deny any knowledge of your actions, so make sure to bring your fake IDs and your IEEE membership cards. See you all there!

SigBio

by Arwin Levinson

SIGBio is having a great semester. We have started constructing our Web page (`http://www.acm.uiuc.edu/sigbio/public_html/`). Our current project is to create a "point and click" Web anatomy book and dictionary. As usual we still have several small programming projects in mind, including biological systems modeling and artificial life programming in C or C++. If any or all of this interests you, please join us at our meetings at 7pm Thursdays in 1102 DCL or 1225 DCL. Mail any questions or comments to Joey Lasky (`jlasky@uiuc.edu`) or Arwin Levinson (`alevinso@uiuc.edu`).

◂1 Terror at IEEE NPC '95!! (cont.)



Search parties were assigned to rectangular zones of the playing field; the manager dispatched each party to its assigned zone, and upon arrival, the ants in each party took on the task of finding food within the zone and handing it off to relay ants.

Norbert Burger wrote code to help discover information about the playing field. The ants in this game had a limited range of vision, beyond which they could not see food or gauge the health of their enemies. As a result, information had to be gathered incrementally by individual ants. Fortunately, communication was global, allowing information discovered by any one ant to be immediately conveyed to the entire army. Norbert used Dan's class hierarchy to implement a class of relay ants dedicated to transporting food from scavenging zones back to home base.

Doug Beeferman wrote the attack algorithms for the fighting ants and routines for seeking out food and enemies based on the known map information. The attack ants divided into groups, chose target enemies using these routines, and ganged up on their targets in such a way as to maximize inflicted damage. The ants were dynamically reassigned to attack groups when necessary, based on their success and health. One of our opponents referred affectionately to these attack groups as "UIUC death squads".

The design and coding was exciting and brought out an unusual level of intensity in the participants. One of our neighbors yelled at and sweet-talked his computer as he tested his code, shouting "Terror!" in a most peculiar way every so often when things didn't go as planned. Even during lunch, the only mention of "food" that could be heard was in the context of the game. As the last seconds ticked away, our team did a final merge of our code and got things running just in time to submit a working version.

The tournament was just as suspenseful. Each game was displayed graphically on a large monitor to a crowd of cheering spectators. Most games lasted a long time and many were very close in score. Our team advanced three levels into the tournament before being eliminated by Duke University's player, which went on to win the entire contest. Duke's team members won three '486 PCs and a bunch of Watcom compilers for their efforts.

The students at UT's IEEE are to be commended for this superbly executed event. They showed not only a great deal of hospitality, but also a lot of technical excellence in the code and documentation they provided. The format of the NPC allows for a great deal of creativity, and the organizers have consistently exploited this to the benefit of all the participants. It would be interesting to give a similar contest a try here at ACM@UIUC some day.

ACM@UIUC hopes to send a new team to next year's NPC. A selection process is necessary, both at UT (to determine which teams attend) and here (to select students to represent UIUC), so not everyone gets to go. Proficient coders with an interest in AI algorithms are strongly encouraged to apply. Details will be sent to the ACM general mailing list and printed in the Banks late next semester, but if you have questions about the contest, contact Norbert Burger (nburger@uiuc.edu) for now. Nothing is known about next year's contest except that it's bound to be a lot of fun!

ACM@UIUC would also like to thank the Department of Computer Science for helping to cover the travel expenses again this year.

SigMicro

by Paul Watts

SigMicro had a very fruitful EOH this year. Our Computer Aided Telescope took third in the Interdisciplinary Competition and in the Lockmiller Robotics and AI Competition. We are continuing this project with the Astronomical Society, and to improve the interface we've decided to write the next version of the software for Windows. For the rest of the year, we're sponsoring several workshops and tutorials: Our C workshop is April 7, from 1-4pm, so watch for more information on that; Ed Burns is going to share with us some Emacs wisdom; and Max Levchin is going to introduce us to protected mode programming on the PC. If you're interested in any of these or if you have some ideas of your own, email me at sigmicro@uiuc.edu. Better yet, come to our meetings! We meet Thursdays at 8pm in 1102 DCL. Hope to see you there!

ACM Spring Paintball Outing '95

When: Saturday, April 22nd, 8am-3pm
Where: Sudden Impact Paintball fields in Bloomington
What: A paintball outing to Sudden Impact fields in Bloomington. We will be leaving from the ACM office at 8am on Saturday, April 22nd. We will be playing against members of the Bradley and ISU ACM chapters. Both ACM and non-ACM members are welcome to participate.
How much: The price to play is roughly $15 for a rental gun, mask, and 100 paintballs. Additional paintballs cost extra. The typical amount spent for an entire day is usually between $25 - $35. If you own your own gun and mask, the field cost is $5. However, you are required to use field paint.

If you can drive, please let Jeff Thompson know, as he is coordinating transportation for everyone. If you have questions, mail Jeff at `jwthomp@uiuc.edu`.

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

special interest groups

(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

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return form with check or money order payable to the

- ☐ $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

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- ☐ yes — #
- ☐ no
- ☐ currently applying