



Banks of the Boneyard

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for Computing Machinery at UIUC

Editors: Rich Bloch and Tom Begnel

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Faculty Spotlight

["Faculty Spotlight", a regular feature of the ACM
Newsletter, attempts to introduce one CS faculty member
to our readers. -Eds.]

Our "Faculty Spotlight" this issue is on Assistant Professor Tony Ng. Professor Ng earned a combined bachelor and masters degree in Computer Science from Massachusetts Institute of Technology in 1982. He also worked intermittently at the IBM Research Center in San Jose, California. Professor Ng went on to gain his PhD from MIT with a thesis concerning the execution of long programs. Long programs are those requiring a large execution time and are then susceptible to failure interruptions and contention with other programs. Professor Ng joined our Department of Computer Science in the Fall of 1986.

Professor Ng's research interests include the designing of algorithms that provide reliability against transient failures in a distributed computer system, and also the simplification of the job of writing reliable programs. Designing reliability algorithms can be very difficult when a system consists of many individual computers, or when one computer does not know what is happening with other computers in the system. Specialized algorithms and specialized hardware architectures are sometimes necessary, so a language or operating system must provide useful abstractions to hide this complexity from programmers writing reliable programs.

Professor Ng chose academia over industry because he enjoys teaching and helping others to learn and also the flexibility for research provided by a department such as ours. He recommends that students pursue breadth and depth in their education and that they should also approach their classes with an attitude of wanting to learn. This attitude, he feels will make the classes more enjoyable for both the students and the professors and will also make rough classes seem easier.

--Tom Begnel

April 22nd General Meeting Cancelled

The general meeting scheduled for April 22nd has been cancelled. The corporation featured at the meeting, Hewlett Packard, was unable to provide any speakers due to scheduling conflicts. They were sorry to report the cancellation, but promised to provide the ACM with a speaker or presentation next Fall.

Despite the HP cancelling, don't lose faith, ACM members. Our May 6th general meeting is still scheduled. The speaker will be Professor C. L. Liu. If you have ever had C. L. Liu as an instructor, you know that he is more entertaining than five company speakers, David Letterman, and even Professional Wrestling. Last year Professor Liu gave a presentation at our last general meeting which was both humorous and informative. The meeting is Wednesday, May 6th, in 151 EEB at 3:00 pm. Don't miss it, or you'll be sorry.

-- Pete Hlavach

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Professor Symposia

The ACM-sponsored Professor Symposia series features faculty members from the Computer Science and related departments discussing their research and other topics of interest. The purpose of the Symposia is to allow students to familiarize themselves with some of our professors and gain insight into what types of research are being conducted here at the University of Illinois.

The Professor Symposia this month featuring Profs. Michalski and Mickunas have unfortunately, been cancelled. Faculty members interested in leading the Professor Symposia should call the ACM Office (333-5828).

--Kin Griffin

CS Alumni Association Formed

The first meeting of the Computer Science Alumni Association was held Thursday, April 9th. The new constituent group of the larger Alumni Association will help establish relations between University of Illinois alumni and the Department of Computer Science, keeping alumni abreast of current activities within the growing CS department.

Among the topics covered at this formational meeting were the redesign and ground-breaking of the new DCL building addition scheduled to begin later this year. Associate Department Head Prof. Kubitz also outlined future plans for the new north quadrangle, incorporating the Beckman Institute already under construction.

ACM representatives were on hand to discuss their involvement in the new association. ACM Chairman and newly-appointed CS Alumni Association Student Representative Jim Dobyns described present activities in the ACM and expressed an interest in working closely with the Association in the future via the ACM Alumni Network.

If you are interested in either the new Computer Science Alumni Association or the ACM Alumni Network contact Jim at home (384-8444), leave a message at the ACM Office (333-5828) or send electronic mail:

CS Alumni Association: alumni@b.cs.uiuc.edu
ACM Alumni Network: uiucdcss!dobyns

--Rich Bloch

Alumni Network

The recently formed ACM Alumni Network needs your involvement and support. The purpose of the Network is to interact with the Department of Computer Science Alumni Association (a constituent group of the University-wide Alumni Association) in ways to benefit ACM members, the Department, and the alumni.

Getting involved with the Network will allow you to meet alumni in the computer industry. This may lead to possible future job offers. In a time when the demand for students with CS degrees is dwindling, getting your foot in the door with such a contact is a major concern. Likewise, meeting alumni who are in academia can help your chances of getting into graduate school. And, of course, becoming involved would be helping your Department and fellow classmates.

Through contacts established by the ACM Alumni Network, we hope to:

- Attract more corporations to Job Fair '88
- Sell more ACM Resume Books to companies
- Establish corporate exhibits at EOH/CSOH '88
- Sponsor an Alumni Lectureship Series

If you are interested in the Alumni Network or if you have any ideas, call me at home (384-8444), leave a message at the ACM Office (333-5828), or send me electronic mail (uiucdcss!dobyns locally or uiucdcs!dobyns@s.cs.uiuc.edu via Arpanet).

--Jim Dobyns

ACM Election Results 1987

Chairman: Jim Dobyns

Vice Chairman: Bob Camp

Treasurer: Chris Gerrib

Secretary: Kathy Boka

"How I Did It"

**Russ Price, Winner of the 1987 Gould/Unix
Break-in Tells Us His Secret**

On Saturday, March 28, Gould Computer Systems Division in Urbana invited a group of hackers to test the security of their UTX/32S 1.0 Secure UNIX operating system. With the potential of getting a \$300 prize, plus being able to meet some of Gould's people, I decided to give it a shot.

All of the break-in participants were given signons on "Igor," one of their testing machines, and we were given four hours to try and find security holes. A valid break-in was one of the following: a) being able to access and read one of two files planted on the system (one in the special restricted environment, and one in the administrative environment), b) becoming super-user (that would be a *major* security flaw!), or c) being able to write messages onto someone else's terminal without using the *talk* program (which is forbidden by UTX/32S's device control modifications). Also, we were not allowed to have any direct or indirect assistance from system administrators (Trojan-horse traps to be run by the super-user would not count, for instance).

My plan of attack was to write on another terminal; the first thing I tried was to write a simple infinite loop that would print a message every three seconds. I then ran it in the background (allowing me to do other things while the program continued to run), and logged off. On my first attempt, the messages stopped as soon as I logged off, even though the program continued to run (as verified by the *ps* command), so I retried it, explicitly redirecting the standard output to */dev/tty* (the terminal), which is normally a redundant step. This time, the messages continued to show up on the terminal even after logging off, so right away I knew my plan would succeed. I then wrote two new programs: the first one would act as a *server* process, waiting to receive a message from the second *client* process through a *socket*, which is an interprocess communication channel used in Berkeley-based UNIX systems. The client process simply asked for a message and wrote it into the socket; the server waited for the message, read it from the socket, and printed it out to the terminal. I then ran the server in the background, with standard output redirected to */dev/tty*, and logged out. After someone else logged into the terminal, I ran my client process, gave it a message to send, and *voilà!* Instant security hole! It took me about three hours to figure out how the sockets worked, though, since I had never used them before, and the standard UNIX documentation on sockets is, to say the least, obscure. I

chose to use this approach since I figured that banging on the security modifications would be about as effective as banging my head on a brick wall, and maybe they hadn't modified the logout process to check and see if background jobs were still using the terminal -- sure enough, it worked!

I would like to thank Gould for the opportunity to legitimately try to break into a system -- such an opportunity is quite rare, and it helped improve the security of their system.

--Russ Price

ACM Computer Science Conference Wrap Up

On February 17th through 19th, seven ACM executives attended the Fifteenth Annual Computer Science Conference, sponsored by the National Chapter of ACM. The purpose of the conference was to bring together the industrial, governmental, and academic communities to learn about the latest in the field of information processing and computing. Also, since representatives from industry, government, and various colleges were present, interviews for hiring prospective employees for summer, co-op, and permanent work were held. The Conference took place in downtown St. Louis, Missouri.

During the three-day event, presentations were given between 9:00 am and 5:00 pm on "hot topics" in numerical analysis, database systems, expert systems, programming languages, and many other specializations in computer science. Each morning session had a special topic that was the focus of a distinguished keynote speaker. Nicklaus Wirth, the creator of Pascal, lectured during the session on computer science education, for example. Concurrently, a large display room was set up to show computer science instructors what texts and tools were available for the classroom; purchase of these was possible at the booths. Interviews were conducted from 10:00 am until 6:00 pm each day by talking to recruiters at their tables in the Employment Register Room; some held the standard half-hour interviews right at the table, others collected resumes and set up interviews for another time.

(see *Conference* on page 4)

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Conference

The executive members from our ACM chapter attended many of the seminars, and those graduating looked for possible employment. They talked with a variety of students from other colleges and ACM chapters. We were pleased to say what an outstanding Computer Science department we have at Illinois, and many were impressed at what our school had to offer. During free time, the sights and sounds of St. Louis were enjoyed by all--the Arch was very tall!

Gaining the insight and contacts we deem necessary for our functioning, ACM would like to thank the Department for absorbing most of the costs of attending this event. Next years Computer Science Conference is in Atlanta, Georgia. Interested people should plan ahead for a fun and enlightening experience.

--Tony Alonso

Microcomputer SIG

SIGMICRO was formed in the final weeks of last semester with the hope that it would become the thriving organization that it was intended to be. Unfortunately, all of the current officers are graduating seniors with little time to devote to such a group. Because of this, SIGMICRO has been slow to provide the workshops and demonstrations that were intended at its inception.

Given this situation, we are looking for some people who would like to see SIGMICRO become what it was intended to be. There are innumerable microcomputer users on our campus that could benefit from an organization such as SIGMICRO and this is an excellent opportunity for you to finally get involved in something while you are here at the University.

Currently, SIGMICRO has approximately 70 people on their membership roster. If you might be interested in getting involved with SIGMICRO, give me a call and I will be happy to discuss what is involved. I can be reached at home (352-1081), at the ACM Office on Tuesdays 11:00-1:00 pm and via e-mail (mbruno@s or mjb713@uxf).

--Mike Bruno

SIGUUCP Election Results

The goal of SIGUUCP is to provide new and experienced users of the Unix operating system and the C programming language with a source of information and help. We provide workshops to train new users, and to give tips to experienced users. Our general meetings will include guest speakers who will discuss new developments in the Unix system and the C language.

At the April 8th general meeting, elections were held for the positions of President, Vice President, Secretary and Treasurer. The new officers are:

Doug Drew	President
Leah Kleidon	Vice President
Mike Sosnowski	Secretary
Susan Hendricks	Treasurer

We are still looking for interested people to head up, and be part of the Publicity Committees. If interested in taking part in this committee, contact Rob Rolnik (398-3925).

We are also looking for people interested in helping teach our workshops on C and Unix. If we can get enough people to instruct workshops, we could put our workshops 'on the road' to the dorms. If interested, contact Doug Drew (398-6003).

An Ice Cream Pig-out at Delights is being planned for the evening of Wednesday, April 29th. Keep an eye out for more information.

--Dan Weber

Computer Graphics SIG

SIGGRAPH was formed to promote the field of graphics within computer science. Formed in the fall of 1986, SIGGRAPH has already grown and established itself as one of the more active Special Interest Groups in the ACM.

The next SIGGRAPH meeting will be held on Monday, April 20th at 4:00 pm in 115 DCL. Officer elections will be held, so all those interested in holding an office should attend. For more information, contact me (359-0742 or 244-5969) or the ACM Office (333-5828).

--David Trant

Artificial Intelligence SIG

The following meetings and speakers are currently scheduled for SIGART (the ACM Special Interest Group for Artificial Intelligence) during this semester:

Apr 29th John Chandler:
 "Expert Systems in Business"
 4:00 pm in 165 EEB

May 6th Gerald DeJong:
 "Explanation-Based Learning"
 4:00 pm in 151 EEB

As mentioned in the last newsletter, SIGART is currently accepting candidates for the following positions: Chairman, Vice Chairman, Secretary and Treasurer. We are also interested in getting people involved in publicity, newsletter and the lecture series for next semester.

If you are involved with AI in any way on campus or if you are just interested in the field, getting involved with SIGART is an excellent way of learning more about AI. For example, in recent years, there has been a large increase in the number of departments on campus which are becoming involved in AI research. However, the importance of communication between these departments is just beginning to be realized. For both graduate and undergraduate students, working with our lecture series is one of the best ways of finding out more about the research that these departments are doing. There are other projects that I have in mind that I would like to see SIGART get involved with. However, we need people to initiate them.

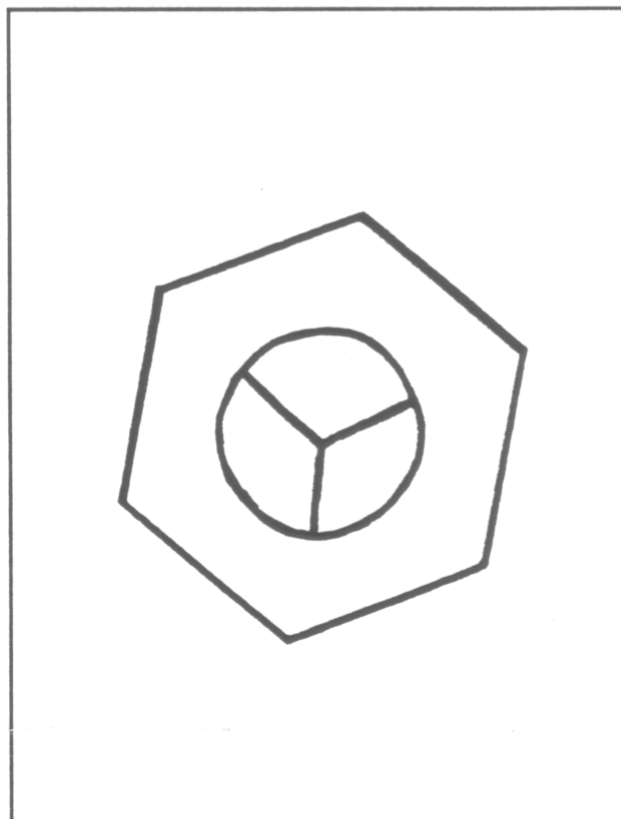
If there are any questions concerning SIGART in general, please contact me (398-4940), John Jenner (344-6883), or leave a message at the ACM Office (333-5828).

--Subutai Ahmad

"I'm coming close to believing that the computer is inherently anti-human -- an invention of the devil."

Professor J. Weizenbaum
Creator of 'Eliza'
MIT

Bits and Pieces



THE ELUSIVE MERCEDES-BENZENE MOLECULE.

--Tom Begnel

Coming Up...

Next month's May 6th issue will be devoted to wrapping up the ACM 1986-1987 school year. Enclosed in this issue will be a membership change-of-address form and a questionnaire designed to get feedback from our ACM members. Please take the time to fill out both of these forms and return them as soon as possible.

The May 6th issue of **Banks of the Boneyard** will also be the last monthly issue sent to ACM members. Beginning in the fall of 1987, **Banks** will arrive in your mailbox once at the beginning of each semester. Further issues will be put on display in various buildings throughout the campus. This will allow us to increase the content of the newsletter, and expand with the growing interests of the ACM membership.

--Eds.

Calendar of Events

Mon Apr 20th	SIGGRAPH General Meeting 4:00 pm 115 DCL	Wed May 6th	ACM General Meeting: Professor C.L. Liu 3:00 pm 151 EEB
Wed Apr 29th	SIGUUCP Ice Cream Pig-out <i>See SIG representatives for more information</i>	Wed May 6th	SIGART Lecture: Gerald DeJong: "Explanation-Based Learning" 4:00 pm 151 EEB
Wed Apr 29th	SIGART Lecture: John Chandler: "Expert Systems in Business" 4:00 pm 151 EEB		

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