Banks of the Boneyard

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(This is a special EOH issue of the ACM's newsletter. In this issue, we introduce you to the Department of Computer Science, the Association for Computing Machinery. -Ed.)

What is ACM?

The Association for Computing Machinery has over 69,000 individual members as well as 400 university and corporate members. ACM is the oldest scientific and technical association in the computer field.

ACM promotes the development of computer technology and information processing through research, publications, and conferences. Its efforts during the past 37 years have resulted in the development of seminal concepts currently receiving practical application in computer methodologies, systems, programming, and computing applications.

While participating in some national ACM activities, our local student chapter operates independently of the national association. The University of Illinois Chapter of the ACM is the official professional society of the Department of Computer Science. Our student chapter tries to increase the level of computer awareness to students by hosting technical speakers at our general meetings. ACM also sponsors many computer-related technical projects and social events to get its members together. One of ACM's largest local activities is the Programming Contest for Illinois students in grades 7-12.

ACM has something for everyone. If you are interested in any aspect of computing or just want to learn something about computers, join ACM today. Hardware enthusiasts, software enthusiasts, and people dwelling on the business side of computers have all learned a great deal through participation in our events.

– John Chris Ravencroft
Chairman, UIUC ACM

Department of Computer Science

In the relatively young field of Computer Science, the University of Illinois has one of the oldest and largest departments in the country. The department currently has 36 faculty and over 350 graduate students, and plans are underway for continued growth. In a recent survey, the department was ranked first in the influence of its publications and sixth nationally in graduate faculty.

The department originated in 1948 with the mission of studying and designing electronic digital computers. The first computer produced here was the ORDVAC, completed in 1951. In 1952, the first of the ILLIAC series of computers, the ILLIAC I, was completed. It represented the first computer to be built and owned entirely by an educational institution. The following ILLIAC's II,III, and IV continued the department's production of ground-breaking machines. The ILLIAC IV, which was once the largest and fastest computer in existence, was just removed from service at the NASA Ames Research Laboratory in 1982. The University's reputation for excellence in Computer Science was such that the infamous computer "HAL" from the film 2001 was supposed to have been invented in Urbana.

The tradition of innovation and advancement in computer architecture continues today at the University of Illinois. In 1985, a group of department faculty formed the Center for Supercomputing Research and Development (not to be confused with the National Center for Supercomputing applications - the Cray XMP) and received grants totaling $9 million. The goal is to develop a large-scale multiple processor supercomputer, whose capacity will eventually outstrip anything now available. A recent grant of $40 million from University alumnus Arnold Beckman will go to establish the inter- disciplinary Beckman Institute, devoted to the study of human and artificial intelligence.

Computer Science Open House

The theme of this year's Engineering Open House, "In Search of Solutions" is especially appropriate for individuals studying Computer Science at the University. The magnitude of problems that can be solved on computers has increased steadily over the years. Present systems now allow researchers to undertake calculations and projects that would have taken years to accomplish on past computers.

The most famous example of the new technology is the Cray X-MP24 on campus. ACM and the National Center for Supercomputing Applications (NCSA) is inviting everyone to see and learn what this machine can do. A demonstration of recent work done on the Cray will be given which includes simulations of Black Holes, Galaxies and Neutron stars. Also, to enlighten visitors about graphics capabilities, one can take the controls of either a Cessna 150, Boeing 747, or F-16 in a real time flight simulator package. Along with this, many other interesting demonstrations can be seen on Friday 9am-12pm and 2pm-5pm in room 253 of the Water Resources Building (SW corner of Wright and Springfield).

The main area for Computer Science exhibits is in DCL and the Woodshop. Information pamphlets will be handed out in the first floor of DCL. Inside, one will be treated to a wide display of computer power. Projects are mainly the work of students here at the University. They include an artificially intelligent Othello game that actually learns and gets better as you play, a chess game, and many graphics projects donated by students in graphics classes here. Also on display will be an amazing CAD/CAM project which allows the user to first design a shape on a computer screen, then the computer will proceed to control a wire and stepping motors to cut the actual shape out of a block of styrofoam. In room 115 DCL, come witness the edge of technology-- a new light-modulating screen projector by Hughes Aircraft which allows a wide range of computers to have their image enlarged onto a 15 x 15 foot area. Across the street in the Woodshop, tours will be given of our VLSI and logic labs along with some hands-on opportunities.

For more information about Computer Science Open House exhibits and attractions, look for the CSOH pamphlets which are available at the Digital Computer Laboratory and in the tent in front of Engineering Hall.

Programming Contest

The ACM Programming Contest is an annual event sponsored by the University of Illinois chapter of the Association for Computing Machinery.

The contest is open to students from junior high and high schools across the state of Illinois. This competition was created to give budding young programmers a chance to display their ability and their skills. The best programmers in each of the four categories of games, graphics and simulations, computer-aided instruction, and general computer science are awarded prizes at a banquet held on the first day of Engineering Open House. Winning programs will be on display in room 237 of the Digital Computer Laboratory.

The Cray X-MP 24

Cray is the maker of the world's fastest computer. The Cray X-MP 24 is divided into three parts: the Central Processing Unit (CPU), Input/Output Subsystem (I/OS), and the Solid-state Storage Device (SSD). The X-MP 24 houses two CPUs with sixteen megabytes of memory. The Solid-state Storage Device can store up to 1024 megabytes or one hundred twenty-eight Cray megawords of very fast random-access secondary memory.

In addition to the Cray itself, there are eight disk drives with six hundred megabyte storage capabilities each and several terminals. The machine room and the motor generator room are each equipped with costly halon fire extinguishing systems.

The machine room temperature is maintained at approximately sixty-eight degrees Fahrenheit. Air is forced through vents in the false floor as well as through vents in the ceiling. The Cray is cooled via freon running through its cooling system which has been chilled with sixty degree (Fahrenheit) water. If the cooling system should fail, an alarm will sound to notify someone in the twenty-four hour operations staff.

Professor John Kogut is exploring the physical state of the universe in its first few seconds of existence. Professor Larry Smarr is using the Cray to do research on black holes. Plans are already being made for the arrival of the Cray X-MP 48 (which has four CPUs) sometime in 1986. The Cray X-MP 48 has twice the computing power of the present Cray and comes in a wide variety of colors.