CENTRAL CONNECTICUT STATE UNIVERSITY

Threads

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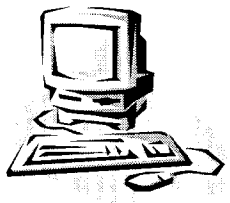
From the Chair's desk .....

Hello everyone and welcome to the 2004-5 academic year in the Computer Science department. I would like to take this opportunity to share with you a few significant highlights of recent happenings in the department. First and foremost we are pleased and proud to announce a significant achievement: in July 2004 the Computing Accreditation Commission of ABET voted to fully reaccredit our BS Computer Science Honors program through 2007. In addition, our department, together with the computer science department at SCSU, received a $60,000.00 CSU IT Pilot Project Grant to investigate and develop physiological human-computer interfaces for classroom PCs.

Focusing on our faculty, ***Dr. Brad Kjell*** has been chosen as a CAC/ABET visiting team evaluator and has just returned from a trip in which he participated in a site visit for the first time. In addition to his courses on computer graphics and image processing, he is also currently teaching an exciting new course on computer security. ***Dr. Brian O'Connell*** has been traveling extensively on business related to his active participation in various computing-related organizations and conferences. Most recently he was elected to the IEEE Computer Society Board of Governors. Dr. O'Connell was also recently elected to a second term as president of the IEEE Society on Social Implications of Technology. His most recent article, "Electronic Monitoring in the American Academy" will be published later this year in "Electronic Monitoring in the Workplace."



Having recently welcomed on board as a tenure track assistant professor, ***Dr. Mark Friedman*** has been active with our Computer Science Club members and majors. He most recently reports a very successful performance by a group of our Computer Science Club members which he mentored in a recent ACM International Collegiate Programming Contest. Our CCSU Blue team finished in the middle of the pack of all schools (8th of 14), and only behind one of two Trinity teams for bragging rights in Connecticut (2nd of 6). Dr. Friedman has also been active in working to diversify computing as the Program Committee Co-Chair for the Richard Tapia Celebration of Diversity in Computing Conference, and as an invited panelist at the New England Board of Higher Education (NEBHE) Science Network for underrepresented students. We also welcome ***Dr. John Peterson*** on board as a one-year emergency appointment. He comes to us from Yale where his interests focus on programming languages for computer science education.

To underscore the "science" in computer science, we are also extremely pleased to announce that ***Dr. Zdravko Markov*** has received a National Science Foundation grant for a research project that he is working on with professors from the University of Hartford and

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Inside this issue:

FEATURED ARTICLE

CCSU's Computer Science Department Embraces Linux and Open Source Technologies By Mark Friedman

According to IBM, "Linux is Everwhere" and today Linux is available to computer science students at Central Connecticut State University in the Computer Projects Laboratory in Maria Sanford 314.

Linux is an open-source UNIX-style operating system favored by many computing professionals and computing enthusiasts. Linux is quickly gaining acceptance and increased application in the computing and Information Technology (IT) infrastructures of businesses, corporations and other organizations, as well as expanded use in educational use in educational environments, in scientific and engineering organizations and in the homes of computer professionals and hobbyists.

UNIX, upon which Linux is based, is

originally created by a small group of researchers at AT&T's Bell Laboratories in the early 1970's. UNIX was designed to be simple and elegant, to be written in a high-level computer language, and to provide the ability to re-use operating provide the ability to re-use operating system code in both system and application programs. UNIX rapidly became popular in the computer science departments of colleges and universities, and then in scientific and technology-oriented organizations. Because UNIX was written in the C programming language, computer programmers could easily and quickly develop sophisticated applications using facilities provided by the operating system including multitasking, multiuser and networking capabilities. Due to its small core, modular design, and high-level language implementation, UNIX was easily ported to many different hardware systems including less costly systems such as the PDP and VAX microcomputers developed by Digital Equipment Corporation in the 1970's and 1980's. Additionally, AT&T's UNIX license permitted the University of California, Berkeley and other universities to use, study and extend the source code of the operating system at practically no cost. A community of computer science researchers and practitioners formed around UNIX. By the mid 1980's, UNIX had become the unanimous operating system choice for computer companies and academic computer science departments. Today, UNIX continues to be regarded as one of the most powerful, versatile, and flexible operating systems in the computer world.

The open-source software movement is based upon the philosophy that software developed by a community of developers in a freely open environment is naturally better software. According to the Open Source Initiative, "When programmers can read, redistribute, and modify the source code for a piece of software, the software evolves. People improve it, people adapt it, people fix bugs. And this can happen at a speed that, if one is used to the slow pace of conventional software development, seems astonishing." Open-source software traces its roots to the work of Richard Stallman in forming the Free Software Foundation (FSF). In computing's early days, software was developed as a feature of a computer's hardware. Computer hardware was sold to make a profit while computer software was given away freely. Companies soon recognized the value of software as intellectual property, and began creating copyrights which restricted the distribution of source code and their software technologies. While in the early days of computing, software innovations were public property, in later days, software became guarded corporate assets. Richard Stallman founded the Free Software Foundation (FSF) "to preserve, protect and promote the freedom to use, study, copy, modify, and redistribute computer software, and to defend the rights of Free Software users." The Free Software Foundation sponsors the GNU (GNU's Not Unix) Project whose goal is to create a complete freely-distributable UNIX-style operating system. The GNU-Project has achieved tremendous success creating state-of-the-art software applications and utilities which are used by cutting-edge software professionals, including the GNU C compiler, the GNU Emacs editor, and the GNU symbolic debugger. The software developed by the GNU Project provides the foundation for the core utilities upon which a Linux system is packaged and provides the tools used in creating the Linux software itself. The philosophy, community and success of the Free Software Foundation and the GNU Project led to the formation of many successful open-source efforts including the Apache Software Foundation, Openoffice.org and Linux.

Linux in the Computer Projects laboratory expands the ability of CCSU's Computer Science department to offer a strong, attractive and relevant computer science program.

Linux is an open source project, based upon the UNIX operating system, started by Linus Torvalds in 1991. Torvalds, as a student at the University of Helsinki, wanted to run a UNIX-style operating system on his personal computer at home. As commercial versions of UNIX were too expensive, Torvalds set out to build an operating system on his own. A small group of developers joined Torvalds's effort; a community of UNIX enthusiasts formed around Torvalds's effort; and version 1.0 of Linux was released in March 1994. During the past
decade, Linux has grown significantly in popularity and use due to the power of UNIX; its open source development philosophy allowing a community of developers to contribute towards creating a powerful, flexible, reliable and quality operating system; its price; and the enthusiam of a community which welcomes an alternative to traditional closed, proprietary operating systems. A Linux system consists of more than the core Linux software or Linux kernel developed by
Torvalds. Linux systems are packaged by individuals and organizations as Linux distributions which must add operating system utilities and user applications to the core kernel. Though Linux distributions are named after the kernel which forms the core of their systems, a
typical Linux distribution consists of hundreds of thousands of programs contributed by hundreds or thousands of individuals and organizations around the world.

The Computer Projects Laboratory in Maria Sanford 314 includes a network of computers which can boot up to the Windows operating system or can boot up to the Linux operating system. The computers in the laboratory contain the SuSE Professional distribution of Linux. Included with SuSE is the Linux kernel; many Unix GNU utilities; KDE and GNOME, the two leading graphical desktop environments; Internet, email, imaging, graphics, audio and video software; text processing, spreadsheet and drawing applications through OpenOffice.org; traditional and integrated development environments for Java, C, C++, perl, python, javascript, LISP, Prolog and other programming languages; and SAMBA, a software package that provides seamless file and print services to SMB/CIFS clients such as machines running the Windows operating system.

Linux in the Computer Projects Laboratory expands the ability of CCSU's Computer Science department to offer a strong, attractive and relevant computer science program. Linux is used in the systems programming course, in the networks and distributed processing course,
in student projects involving Internet applications and technologies, in software engineering, and in computer game technology courses.

Stop by the Computer Projects Laboratory to learn what Linux can do for you.

FACULTY UPDATE

Dr. Mark Friedman

Dr. Friedman, assistant professor of Computer Science, has considerable experience both in industry and in academia. Prior to arriving at CCSU, he founded The Richard Roman Institute, a computing technology consultancy, where he consulted with and instructed computer scientists and engineers at companies such as the Hewlett-Packard Corporation, the General Electric Corporation, and the Digital Electronics Corporation. Dr. Friedman also served as the Chief Technology Officer at Mokonet, Inc. a software development company working with financial institutions in New York City, and advanced the use of computer graphics in the design of computer hardware working as an engineer at IBM. Previously in an academic setting, Dr. Friedman spent six years as an Assistant Professor at Trinity College in Hartford, Connecticut, and taught a variety of college courses at schools such as Rensselaer at Hartford and Adelphi University. Recently, Dr. Friedman has been active in promoting science, technology, engineering and mathematics to underrepresented groups through the New England Board of Higher Education's Science Network, and the Richard Tapia Celebration of Diversity in Computing.

Dr. Brian O'Connell

Brian M. O'Connell, associate professor in the Department of Computer Science has been elected to the IEEE Computer Society Board of Governors. The Computer Society, comprised of 100,000 members, is the oldest and largest professional organization in computing. It conducts a comprehensive program of publications, meetings, and technical and educational activities. Professor O'Connell was also recently elected to a second term as president of the IEEE Society on Social Implications of Technology. The IEEE has over 370,000 members in 150 countries, and publishes 30% of the world's technical literature in electrical engineering, computers and control technology.

His most recent article, "Electronic Monitoring in the American Academy" will be published later this year in "Electronic Monitoring in the Workplace", edited by John Weckert and published by Idea Group Press.

Dr. Zdravko Markov

Dr. Zdravko Markov, associate professor of Computer Science is a PI in a project, which received a $99,469 grant from the National Science Foundation to develop ways to teach college students about Artificial Intelligence. The project title is "Machine Learning Laboratory Experiences for Introducing Undergraduates to AI" (NSF CCLI-A&I Award Number 0409497) and more information about it is available at the project web page at http://uhaweb.hartford.edu/compsci/ccli/. Dr. Markov is also co-chairing (with Ingrid Russell from University of Hartford) the FLAIRS-2005 conference to be help on May 16-18, 2005 in Clearwater Beach, Florida (http://ranger.uta.edu/flairs05/). The FLAIRS international conferences are organized by the Florida Artificial Intelligence Research Society in cooperation with The American Association for Artificial Intelligence (AAAI). It is an annual event (first time held in 1988) that brings together researchers and practitioners from a wide range of AI related areas from all over the world. Dr. Markov co-chaired the FLAIRS-2004 conference, which attracted a record number of submissions - 286 papers submitted for reviewing from which 158 were accepted with an acceptance rate of 55%.

Dr. Rathika Rajaravivarma

Rathika Rajaravivarma, assistant Professor of computer science, has been recently invited to attend the Annual CNSS Conference – Sharing information in a Secure environment in Norfolk, VA. This is one of the National INFOSEC Education and Training Program (NIETP) to ensure quality information assurance training and education. Rajaravivarma also served as a member of the technical program committee in the 36th IEEE-SSST04 conference held at Georgia Institute of Technology, March, 2004.

ADVISORY BOARD

The Computer Science Advisory Board's Fall 2004 meeting is scheduled for Friday Nov. 19th.

Mike Signor who served in Department advisory committee has changed positions and has moved to Arizona. The department thanks Mike for being a valuable member of the committee and wishes him well.

Advisory Board Members include:

Linda Hirning, Travelers Insurance

Pat Sanders, Coastal Oceanographics,

Earl DuBack, State of CT Insurance Department

Steven Demurjian, University of Connecticut

Art Adolfson, Tunxis Community College

Tim Davoll, Pratt & Whitney

Earlier, the Spring 2004 meeting took place on Friday, April 23rd.

FACULTY UPDATE (Contd.)

(Continued from page 1)

Gettysburg College. In addition, we are looking forward to our semiannual Advisory Board luncheon meeting scheduled for November of this year, to which ***Professor Emeritus Clifford Pelletier*** has most recently been appointed and which ***Dr. Irena Pevac*** has been diligently planning. She has also been busy publishing her paper, *Visualizing the Time Complexity of Recursive Graphical Algorithms,* in the Proceedings of the 2nd International Conference on Computer Science and its Applications, and is currently organizing an invited session for the 9thWorld Multi-Conference on Systems, Cybernetics, and Informatics that will be held in July of 2005.

Finally, our recent Faculty-Student pizza gathering was a wonderful success and plans are in the "hopper" for another such get-together at the beginning of next semester. Be sure to get your requests for pizza toppings in to our one and only ***Jeanne Phillips***, the wonderful person who may greet you upon arrival in MS 206 without whom, well, I just don't know what we would do without her!

COMPUTER CLUB
www.cs.ccsu.edu/~compclub

Congratulations are due to Will Klein, Gabriel Gajecki and Pawel Micun for their participation and success in this years' ACM International Collegiate Programming Contest. ***CCSU Blue*** got off to a quick start in the Eastern Preliminary for the Northeast North America Regionals at Western New England College. Ninety minutes into the contest, when the first two reports of results were presented to faculty of the seventeen teams that came to compete, CCSU was placed behind only MIT, Harvard and Williams and in front of all other Connecticut teams including UConn, Trinity, SCSU and UBridgeport. With only three weeks of preparation, CCSU Blue finished in the middle of the pack of all schools (8th of 14), and only behind one of two Trinity teams in Connecticut (2nd of 6). The enthusiasm is full of zip that the Computer club is already getting ready for the next years contest!

Among the many projects undertaken, the computer club sent 5 of its members to Apple Computers in Cupertino, CA, and the Digibarn, also in California. The trip was a tremendous success, as every person they met offered invaluable insight into prospective careers, projects, and passions. The next trip is planned for summer 2005 to participate in the Annual conference in Los Angeles for computer graphics and interactive techniques.

Check us out on the web
www.cs.ccsu.edu

Upsilon Pi Epsilon
www.cs.ccsu.edu/~upe

The Gamma Chapter of Upsilon Pi Epsilon held its second induction ceremony on Oct 19th 2004, since its reactivation last Fall. Ten new members — Steven Bazinet, Michael Kusek, Donald Morrone, Julie Miceli, Stephen O'Brien, Melissa Parmlee,Ross Pitman, Daniel Reis, Adam P Sharp, and Mihai Smuliac — joined the chapter on this day. They will be bringing more vitality along with the 8 students inducted in Fall 2003. These 8 students reenergized the chapter on December 9, 2003. They are Paul Borysewicz, Denise Cordner, Michael Everett, Alan Fafard, Raul Filigrana, Greg Pawelczyk, Viral Shah, and Todd Steinackle. The new office bearers for the upcoming year are

Steven Bazinet	President
Julie Miceli	Vice President
Donald Morrone	Treasurer and
Melissa Parmlee	Secretary

They will be replacing the current office bearers—Paul Borysewicz, Todd Steinackle, Denise Cordner, and Michael Everett respectively. Dr. Rathika Rajaravivarma is serving as the UPE Chapter Advisor at CCSU.

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Presentations at CCSU

The first presentation of the IEEE-CT Robotics & Automation Joint Chapter was held on Wednesday, March 31at 7:00pm at Central Connecticut State University. Igor Cherepinsky, Flight Controls Engineer of Sikorsky Aircraft Corporation captured the audience with the presentation and discussion on Autopilot Development and Flight Test Issues on a UH-60M Helicopter.

The success of this presentation attracted the attention of the CT IEEE Computer Society. Following this, a stimulated presentation of the Computer Society titled "Control Systems - Relating Theory to Practice, a Tutorial" was presented by Greg Boria on Tuesday, June 8 at CCSU.