In spite of the current economic climate, a report released by Yahoo! earlier this spring lists software engineering as one of the fastest growing fields in the coming years, due to the critical role that software plays in our daily lives. Software engineers also enjoy one of the highest median salaries on the list, with a reported annual wage of over $58,000.

Our Department has maintained its tradition of excellence this semester, hosting a major systems testing workshop that aims to improve the quality of software everywhere. Our reputation as a leader in cybersecurity education has been cemented with a re-designation from the NSA and DIFS as a National Center of Academic Excellence in Information Assurance Education. Meanwhile, our research funding has continued to grow with the NSF, NIH, DHS, and ONR as major sponsors; and our faculty and students have continued to receive accolades for their work.

Looking to the future, we are facilitating further growth by stepping up our outreach activities. These efforts have included events such as the annual Programming Challenge for high-school students and a workshop on CS opportunities for high-school counselors, as well as having two faculty members serve on the Outreach subcommittee of the University Committee to Increase STEM (Science, Technology, Engineering, and Mathematics) Enrollments.

I always welcome input from our alumni and industry/research collaborators. Contact us anytime!

Dr. Sajjan Shiva

Dr. Dipankar Dasgupta organized a Symposium on Computational Intelligence in Cyber Security (CICS) at the IEEE Symposium Series on Computational Intelligence (SSCI), held in Nashville, TN, from March 30-April 2. Dr. Dasgupta also gave a tutorial on the topic at the event.

Dr. Stan Franklin has joined the editorial board of the International Journal of Machine Consciousness. He is also a new member of the NSF's "Cognition in Computational: The LIDA Model of Global Workspace Theory" and "Pressures for Perceptual Stability and Self as Guides to Machine Consciousness." The latter article was co-authored with one of our graduate students, Sidney D'Mello.

Dr. Max H. Garzon has become computer science editor for Springer's Encyclopedia of Sciences and Religions, scheduled to be published towards the end of the year. The work aims to present side-by-side discourse in sciences and religions to foster scholarly comparison and interaction. More details can be found at refworks.springer.com/mrw/index.php?id=1325

Dr. Santosh Kumar gave an invited talk on his AutoSense project at the National Institute on Alcohol Abuse and Alcoholism (NIAAA) at the National Institutes of Health on January 12. The AutoSense project aims to develop a body area wireless sensor network that enables continuous collection of real-time data on personal exposures to addiction and psychosocial stress.

Three papers from Dr. Kumar's WiSeMANet Lab also appeared in the prestigious IEEE INFOCOM conference, held in Rio de Janeiro, Brazil, from April 20-25.

Mr. Kriangsiri Molsari was awarded a U of M Summer Redesign Fellowship to improve COMP 1900, our introductory computer science course. The proposal was submitted jointly with Dr. Linda Sherrill.

In April, Dr. Vinithay Phan participated in an NSF panel to review proposals in the areas of computational biology, bioinformatics, and bio-computing.

Dr. Linda Sherrill was awarded a U of M Summer Redesign Fellowship to improve COMP 2150, the second course in our introductory computer science sequence. Dr. Sherrill also gave a talk entitled "Experiences with the NSF GK-12 Teaching Fellowship Program" at the STEM Colloquium on March 20. The STEM Colloquium is funded by the NSF grant MemphisStep: A STEM Talent Expansion Program. In addition, Dr. Sherrill and Dr. Santosh Kumar are members of the University Committee to Increase STEM Enrollments. Both professors serve on the Outreach subcommittee.

Dr. Sajjan Shiva received a grant from the Office of Naval Research entitled "Game Theoretic Approaches to Protect Cybersecurity." Dr. Dipankar Dasgupta and Dr. QiShi Wu are co-authors on the project.

Dr. QiShi Wu has been selected as a recipient of the 2009 U of M College of Arts and Sciences Early Career Research Award.

A full list of recent publications & professional activities can be found at

www.cs.memphis.edu/spring09/

CIA Ears Re-Designation

The National Security Agency and Department of Homeland Security have re-designated the Center for Information Assurance (CIA) as a National Center of Academic Excellence in Information Assurance Education for the next 5 years. Under the direction of Dr. Dipankar Dasgupta, the CIA has become known to 42 states and several universities though the Adaptive Cyber-security Online Training program. For more information about the CIA and the ACT Online program, see cfaa.memphis.edu and www.acet-online.net.

Online Elections and Online Courses

The Computer Science Department and the CIA sponsored two online student elections on behalf of the Student Government Association (SGA) for Basketball Homecoming King/Queen and new student government positions for 2009-2010. These elections were coordinated by Dr. Max Garzon and attracted over 500 more voters, a 300% increase over last year's election.

A new pilot program to expand the Department's classrooms online was successfully run in Dr. Max Garzon's Human-Computer Interaction graduate class. Four students from the National University of Colombia joined the class of 14 U of M students online, with two of them earning full credit at their institution for their work.

AutoWitness Featured on U of M Video

Dr. Santosh Kumar's AutoWitness system was recently featured on a video produced by the University of Memphis Marketing Department. AutoWitness uses wireless sensor technology to automatically alert law enforcement of stolen items. AutoWitness also provides the ability to track these items, making them easier to recover. A YouTube version of the video can be viewed at www.youtube.com/watch?v=ov5Y9C9E4yk

2009 Programming Challenge

The Computer Science Department hosted the 2009 Programming Challenge on March 28. High-school students from throughout the Mid-South were invited to participate. Dr. Evan Drumwright and Dr. Vinithay Phan organized the event.

The theme of the challenge was to make a "rhythm game," which tests the player's ability to follow a music beat and coordinate with a rhythm. Students were given six weeks to create the game and then met at the FedEx Institute of Technology on the U of M campus to present their projects to judges.

This year's overall winner was the Sharpics from Clarkeville Academy, defending their win from last year's Challenge. There were also strong showings from Lusanna School, Central High School (in Little Rock), and Alpena High School (in Alpena, AR).

Postdocs and Visiting Researchers

The Department is excited for the opportunity to work with postdocs and visiting researchers from around the globe. Some of our current and upcoming collaborators include the following:

Dr. Fernando Nino is a visiting researcher working with Dr. Dipankar Dasgupta on a NIPST project of developing multiprojective evolutionary solutions to the task-based solver assignment problem. Dr. Nino is an Associate Professor at the National University of Colombia and recently co-authored a book with Dr. Dasgupta on Immunological Computation.

Dr. Santosh Kumar's WiSeMANet Lab welcomed Dr. Kurt Parlee in 2008. Dr. Parlee received his Ph.D. from the Univ. of Illinois at Urbana-Champaign, and he is working on detection and inferenceing aspects of the AutoSense and AutoWitness systems. A second postdoctoral fellow, Dr. Andrew Raj, will join the group in July 2009. He received his Ph.D. from the Univ. of Florida, Gainesville, and he will work on a new human-computer interface for AutoSense.

Dr. Kihyeon Kwon, from Kangwon National University in South Korea, will join Dr. QiShi Wu's team this fall. His work will involve optimizing network performance of distributed applications.
Graduate student Archana Bhattacharai (pictured below) received one of the Best Student Paper awards at the IEEE Symposium Series on Computational Intelligence (SSCI) held in Nashville, TN, from March 30-April 2. Archana's research was conducted under Dr. Vassile Ras and Dr. Dipankar Dasgupta; her paper is entitled "Characterizing Comment Spam in the Blogosphere through Content Analysis."

Graduate student Pavan Vejaandla presented the paper "Why an AI Research Team Adopted XP Practices" (co-authored with Dr. Linda Sherrill) at the 47th ACM Southeast Conference in Clemson, SC, March 19-21. ACM Southeast is the oldest continually running conference of the ACM.

First place went to Yi Gu, for her work under Dr. Qishi Wu entitled "Simulation-based Analysis of Performance Dynamics of Distributed Applications in Heterogeneous Network Environments." Second place went to Archana Bhattacharai, for her work under Dr. Dipankar Dasgupta on "Characterizing Comment Spam in the Blogosphere through Content Analysis." Third place went to Mihai Linzean, for his work under Dr. Vassile Ras entitled "Paraphrase Identification using Weighted Dependencies and Word Semantics."

special thanks to our panel of faculty judges: Dr. Max Garzon, Dr. Linda Sherrill, and Dr. Lan Wang.

Applied CS Student Achievements

For their capstone projects, Applied CS students Ning Liu and Ranjeet Thakur developed and put into production systems for a large local company's marketing department and nonprofit organizations. Ranjeet's system will provide social network support in an effort to curb the high incidence of early sexual activity and STIs in Memphis-area middle and high schools. Meanwhile, Ryan J. McCall's capstone deliverable is being submitted for journal publication as "Grounded and Modal Representations for Objects and Spatial Relations in Autonomous Agents."

NetLab Activities

Kajal Imon from the Bangladesh University of Engineering and Technology will join the group in Fall 2009.

Kritangiri Malasri and Dr. Lan Wang's paper "Securing Wireless Implanted Devices for Healthcare: Ideas and Challenges" is scheduled to appear in the IEEE Communications magazine later this year.

Research Day 2009

The 7th Annual Computer Science Research Day was held on March 20. A total of 12 students gave oral presentations throughout the day.

Academics

Recent and former alumni are invited to join the alumni club at www.cs.memphis.edu/alumni, if they have not already done so. Join a network of hundreds of other alumni located around the U.S. and many other countries, and share your and their news and opportunities for professional development and employment.

Spring 2009 Graduates

Ph.D.

Derrel R. Blain
Dissertation: "QUANTI: a Framework for Simulations" Major Advisor: Dr. Max H. Garzon

M.S.

Daniel George Kay
Bhagavathy Krishna
Min Meng
Ahmed I. Oweis
Mahnir Bahi Satharla
Shokhrum Verma

M.S. Applied Computer Science

Ning Liu
Ryan James McCall (Cognitive Science concentration) Ranjeet Thakur

B.S.

James Brewer Garrett
Jason Haywood Hills
Thomas Graves Hilton
Jonathan Ryan Less
Andrew R. Vawter

Student Highlights

Student Spotlight: Ernest McCracken

Undergraduate student Ernest McCracken, a research assistant in the Networking Research Lab under Dr. Lan Wang, has recently received a number of accolades. He won the first prize in the undergraduate Math/Computer Science category in the 2009 University Research Forum. His topic was "Autonomous Border Patrol using Wireless Sensor Networks." Ernest also won the same prize last year.

Ernest also presented his Internet routing visualization work at NCUFR (National Conferences on Undergraduate Research) in April, and his NetViews Internet visualization software (developed under Dr. Wang's guidance) was demonstrated at IEEE INFOCOM 2009 in Brazil. The software has received good feedback. For details about NetViews, visit netlab.cs.memphis.edu/projects_crl.html and see the YouTube video at www.youtube.com/watch?v=pULHdkPsNE.

Ernest also served as a judge at this year's Programming Challenge. He will be graduating with his B.S. degree this summer and will start his Ph.D. studies at the U of M under Dr. Wang.

CS Colloquium

The CS Colloquium this semester included talks from distinguished visiting researchers as well as members of industry and University of Memphis faculty.

Natalja Jonoska, University of South Florida
"Programmable Transducer Implemented by DNA Self-Assembly"

Alberto Delgado, National University of Colombia
"Electronic Genes for Mobile Robotics"

Jim Davis, CEO, Verified Person
"From Grep to Google: Career Advice for the Extrovert Nerd"

King-Ip Lin, University of Memphis
"Applying Data Mining for Approximate Search in High Dimensions"

Joe Tisen, Medical College of Georgia
"Organizing Principles of Real-Time Memory Encoding"

Fernando Nino, National University of Colombia
"Immunologically Inspired Multiagent Systems"

Xiaohui Cui, Oak Ridge National Lab
"Swarm Intelligence and GPU Enhanced High Performance Computing"

Rick Dale, University of Memphis
"Cognitive Dynamics in Action Dynamics"

Raymond Mooney, University of Texas, Austin
"Learning Language from Its Perceptual Context"

Sidney D'Mello, University of Memphis
"Automatic Detection of Complex Mental States by Monitoring Fluctuations in Gross Body Language"