From the Chairman

We have had two good problems this semester: we’ve been kept busy by growth in enrollment in computer science classes, as well as funded research grants!

Over the 2011-2012 academic year, our undergraduate classes enjoyed a total enrollment of 390 students, the highest level since we became an independent Department in 2006. This caps a six-year trend of increasing B.S. enrollment. Our Ph.D. enrollment is also on the rise, while M.S. enrollment has remained steady.

Our faculty have obtained a total of just under $3M in new research funding in 2012, the highest annual level since 2007. The newly funded grants cover diverse topics, including sensors, pervasive computing, and cyber security.

Meanwhile, I am happy to announce that we have a successful ABET accreditation visit for our undergraduate program this fall, with no deficiencies noted in the preliminary report. We are looking forward to receiving ABET’s full report in the near future.

Happy holidays to all!

Dr. Sajjan Shiva

Department News

Successful Collaboration with Smith & Nephew

The Computer Science Department had a very successful collaboration with Smith & Nephew. Led by Ph.D. student Serge Saleh and Dr. David Lin, our research group worked on a project to apply clustering techniques to help the company design and develop knee implants that better satisfy patient needs. The Smith & Nephew team, led by Jim Wiebe, Ryan Landon, and Brian McKinnon, are very appreciative of the collaboration and are grateful to have developed this relationship and look forward to more in the future.

Cyber Security Expo

The University of Memphis Center for Information Assurance hosted the 5th Annual Cyber Security Expo at the FedEx Institute of Technology on October 19. This year’s theme was Providing Business Security: New Issues. Over 120 people from different organizations attended the event. The speakers included Ron Ross from NIST, Avel Sanchez from MIT, Nik Puri from FedEx Services, Gary Osland from Cisco, and Robert Averchombe from ORNL. There was also a workshop on SCADA security, and a panel focusing specifically on recruiting women in cyber security careers. Details on this event and lecture notes are available at cyberexpo.memphis.edu

CS Department Moves!

Over the summer, the Computer Science Department moved its main office to the third floor of Dunn Hall, in room 375. All faculty offices are now on the third floor, with the second floor reserved for labs. The Department held an Open House on August 24 to celebrate the new facilities, with then-Provost Ralph Faulkner and College of Arts and Sciences dean Henry Kutz joining department chair Sajjan Shiva for a ribbon cutting.

Open House for High School Students

The Department joined the celebration of Computer Science Education Week across the country with a series of interactive demonstrations to showcase computing. About 100 students from four area high schools were present. This year’s demos covered topics ranging from artificial intelligence to molecular computing. Dr. Qishi Wu also showed the use of the university’s visualization cluster to render 3D scenes for video games.

Faculty Achievements

Dr. Dipankar Dasgupta was the commencement speaker at the U of M’s Summer 2012 ceremony. A renowned cyber security expert and the recipient of the 2012 Willard R. Sparks Eminent Faculty Award, Dr. Dasgupta spoke to the graduates about the role of technology in shaping our future. His speech can be viewed on YouTube at http://www.youtube.com/watch?v=cRwOl0QHIIYo

In August, Dr. Dasgupta was awarded a one-year grant for $853,289 (with John R. Williams at MIT) to develop a biologically inspired way to secure computer information and networking systems. The funding from the Intelligence Advanced Research Projects Activity (IARPA) will support development of a novel “Negative Authentication System,” which is expected to immunize password-protected information systems from cyber-attacks.

Dr. Santosh Kumar is a PI on a co-PI on three multi-university research grants from national funding organizations. “Predicting Smoking Abstinence via Mobile Monitoring of Stress and Social Context” is a three-year, $1.3M grant from the National Institute on Drug Abuse (NIDA) and NIH. This grant will study the prediction of abstinence in newly abstinent smokers from the Auto-Sense project. “EasySense: Contact-less Physiological Sensing in the Mobile Environment Using Compressive Radio Frequency Probes” is a three-year, $600,000 grant from NSF that aims to develop a contactless physiological sensor. “Enabling Privacy-Utility Trade-offs in Pervasive Computing Systems” is a two-year grant from NSF that will study privacy in mobile health. The U of M share of this grant is $95,800.

Over the semester Dr. Kumar was invited to give several presentations, including a keynote speech at the 10th IEEE/IFIP International Conference on the Theory and Practice of Natural Computing held in Tarragona, Spain in October. He also delivered an invited talk at DNA18, the International Conference on DNA Computing and Molecular Programming, at Aarhus University in Denmark in August.

Dr. Max Il Gordon delivered an invited talk on “Theory and Applications of DNA Codeword Design” at the first International Conference on the Theory and Practice of Natural Computing held in Tarragona, Spain in October. He also delivered an invited talk at DNA18, the International Conference on DNA Computing and Molecular Programming, at Aarhus University in Denmark in August.
Featured Alumnus: Dr. Javier Snaider

Dr. Javier Snaider (Ph.D. 2012) is working at Google, Inc. in Mountain View, CA. He is developing new API services for several platforms, including the Web and Android mobile operating system. He also continues to do research with Dr. Stan Franklin's Cognitive Computing Research Group.

Javier's primary research interests are cognitive architectures, their internal representations, memory and learning algorithms, and their cognitive processes. He developed a new Integer Sparse Distributed Memory, which replaces the original binary vectors of SDiM with modular integer vectors. He also created the Modular Composite Representation, a high-dimensional vector representation that is able to represent complex structures using single vectors. Javier has worked with several members of the LIDA cognitive architecture, including time perception and production, its memory system, its main representation model, and the LIDA computational framework, a highly customizable Java implementation of the LIDA architecture.

Javier has also worked as a computer software consultant, particularly for Java projects. He is a certified Java instructor and has taught advanced Java courses for enterprises such as Sun and Oracle.

Dr. Karen Hovsepian, a postdoctoral fellow with Dr. Santosh Kumar's WiSe MANet Lab, has joined Troy University as a tenure-track assistant professor.

Adam Gemin (B.S. 2012) and Forrest Williams (B.S. 2011) are now employed as software engineers at FedEx's World Technology Center in Collierville.

CS Social 2012

The traditional CS Social was held on November 9. Students, faculty, and alumni gathered at the University Center for an evening of food, fun, and games.

CS Colloquium

This semester's CS Colloquium series included talks from distinguished visiting researchers and industry professionals as well as University of Memphis faculty and students. For abstracts and speaker bios, see www.cs.memphis.edu/colloquium

"Information Visualization: A Security Storm Map"
Dr. Denise Ferebee, FedEx Services

"FIFA: Fast Incremental FIB Aggregation"
Yaoting Liu, Ph.D. Candidate, Department of Computer Science, University of Memphis

"Capturing Disease-Symptom Relations using Higher-Order Co-Occurrence Algorithms"
Vivek Datta, Ph.D. Candidate, Department of Computer Science, University of Memphis

"Reliable and Energy-Efficient Data Collection in Wireless Sensor Networks"
Dr. Feng Wang, Department of Computer Science and Information Science, University of Mississippi

"Computer Aided Engineering - Knee Technology Launches Forward"
Ryan Landon, Smith & Nephew

"Semantic Similarity via Quadratic Assignment"
Dr. Vasile Rus, Department of Computer Science, University of Memphis

"Adaptive Forwarding in Named Data Networking"
Dr. Lan Wang, Department of Computer Science, University of Memphis

Student Achievements

Ph.D. students Syed Monowar Hossain and Amin Ahsan Ali were awarded NSF student travel grants to attend the prestigious ACM SetSys 2012 conference and its accompanying middleware workshop. The conference was held November 6-9 in Toronto, Canada. Both Syed and Amin are research assistants in Dr. Santosh Kumar's Wireless Sensors and Mobile Ad Hoc Networks (WiSe MANet) Lab.

Fall 2012 Graduates

Ph.D.
Sujay Ray
M.S.
Harish Kumar Chaziyoti
Sri Harsha Madamanchi
Snehaa Mitra
Siddhartha Potreddy
Kaldeep Sharma
Abhijit H. Thakor

M.S. Applied Computer Science
John "Bert" Godwin

B.S.
Kameshka N. Bigham
Jason C. Bock
Justin B. Center
Adam S. Malik
Shawn E. Mercado
Gui Sandrs
Hart M. Simha

Department of Computer Science
University of Memphis
375 Dunn Hall
Memphis, TN 38152-3240
Phone 901.678.5465
Fax 901.678.1506
Email info@cs.memphis.edu
Web www.cs.memphis.edu

ACM Student Chapter News

The ACM student chapter has hosted several events this semester, including a game night, Linux Q&A, and two guest lectures (by U of M alumnus Jim Greer of FedEx, and Midmouth Makers).

Dr. Karen Hovsepian, a postdoctoral fellow with Dr. Santosh Kumar's WiSe MANet Lab, has joined Troy University as a tenure-track assistant professor.

Adam Gemin (B.S. 2012) and Forrest Williams (B.S. 2011) are now employed as software engineers at FedEx's World Technology Center in Collierville.

The traditional CS Social was held on November 9. Students, faculty, and alumni gathered at the University Center for an evening of food, fun, and games.

CS Colloquium

This semester's CS Colloquium series included talks from distinguished visiting researchers and industry professionals as well as University of Memphis faculty and students. For abstracts and speaker bios, see www.cs.memphis.edu/colloquium

"Information Visualization: A Security Storm Map"
Dr. Denise Ferebee, FedEx Services

"FIFA: Fast Incremental FIB Aggregation"
Yaoting Liu, Ph.D. Candidate, Department of Computer Science, University of Memphis

"Capturing Disease-Symptom Relations using Higher-Order Co-Occurrence Algorithms"
Vivek Datta, Ph.D. Candidate, Department of Computer Science, University of Memphis

"Reliable and Energy-Efficient Data Collection in Wireless Sensor Networks"
Dr. Feng Wang, Department of Computer Science and Information Science, University of Mississippi

"Computer Aided Engineering - Knee Technology Launches Forward"
Ryan Landon, Smith & Nephew

"Semantic Similarity via Quadratic Assignment"
Dr. Vasile Rus, Department of Computer Science, University of Memphis

"Adaptive Forwarding in Named Data Networking"
Dr. Lan Wang, Department of Computer Science, University of Memphis

Department of Computer Science
University of Memphis
375 Dunn Hall
Memphis, TN 38152-3240
Phone 901.678.5465
Fax 901.678.1506
Email info@cs.memphis.edu
Web www.cs.memphis.edu

Featured Alumnus: Dr. Javier Snaider

Dr. Javier Snaider (Ph.D. 2012) is working at Google, Inc. in Mountain View, CA. He is developing new API services for several platforms, including the Web and Android mobile operating system. He also continues to do research with Dr. Stan Franklin's Cognitive Computing Research Group.

Javier's primary research interests are cognitive architectures, their internal representations, memory and learning algorithms, and their cognitive processes. He developed a new Integer Sparse Distributed Memory, which replaces the original binary vectors of SDiM with modular integer vectors. He also created the Modular Composite Representation, a high-dimensional vector representation that is able to represent complex structures using single vectors. Javier has worked with several members of the LIDA cognitive architecture, including time perception and production, its memory system, its main representation model, and the LIDA computational framework, a highly customizable Java implementation of the LIDA architecture.

Javier has also worked as a computer software consultant, particularly for Java projects. He is a certified Java instructor and has taught advanced Java courses for enterprises such as Sun and Oracle.

Dr. Karen Hovsepian, a postdoctoral fellow with Dr. Santosh Kumar's WiSe MANet Lab, has joined Troy University as a tenure-track assistant professor.

Adam Gemin (B.S. 2012) and Forrest Williams (B.S. 2011) are now employed as software engineers at FedEx’s World Technology Center in Collierville.

The traditional CS Social was held on November 9. Students, faculty, and alumni gathered at the University Center for an evening of food, fun, and games.

CS Colloquium

This semester's CS Colloquium series included talks from distinguished visiting researchers and industry professionals as well as University of Memphis faculty and students. For abstracts and speaker bios, see www.cs.memphis.edu/colloquium

"Information Visualization: A Security Storm Map"
Dr. Denise Ferebee, FedEx Services

"FIFA: Fast Incremental FIB Aggregation"
Yaoting Liu, Ph.D. Candidate, Department of Computer Science, University of Memphis

"Capturing Disease-Symptom Relations using Higher-Order Co-Occurrence Algorithms"
Vivek Datta, Ph.D. Candidate, Department of Computer Science, University of Memphis

"Reliable and Energy-Efficient Data Collection in Wireless Sensor Networks"
Dr. Feng Wang, Department of Computer Science and Information Science, University of Mississippi

"Computer Aided Engineering - Knee Technology Launches Forward"
Ryan Landon, Smith & Nephew

"Semantic Similarity via Quadratic Assignment"
Dr. Vasile Rus, Department of Computer Science, University of Memphis

"Adaptive Forwarding in Named Data Networking"
Dr. Lan Wang, Department of Computer Science, University of Memphis

Department of Computer Science
University of Memphis
375 Dunn Hall
Memphis, TN 38152-3240
Phone 901.678.5465
Fax 901.678.1506
Email info@cs.memphis.edu
Web www.cs.memphis.edu