THE UNIVERSITY OF MEMPHIS®

Computer Science

Spring 2015 Newsletter

Chair's Message

This is my final Chair's Message after a very exciting 12 years as the Chairman of the Department. We went from being a division in the Department of Mathematical Sciences to an independent Department with over 300 undergraduate and graduate students. All our degree and certificate programs are flourishing. Our graduates have spread their wings from Memphis to Boston to Silicon Valley. The Department has the highest per-capita research funding of any department on campus! Of course, all this has been a team effort, and I am honored to have worked alongside so many bright colleagues over the years.

I am pleased to welcome a number of new faces to the department this spring and fall: assistant professor Deepak Venugopal, adjunct instructor David Hirschfeld, and office staff Lyndsey Rush and Joyce Stevenson.

At the same time, with heavy heart we will be bidding farewell to several people: Drs. Rick Sheldon, Chase Wu and Elena Strange, and administrative associate Cheryl Hayes. You will all be greatly missed by the department, and I wish you the best in your future endeavors.

Despite these personnel changes, I firmly believe that the Department is on a solid foundation for continued future success. I look forward to seeing what the next few years will bring!

Sajjan G. Shiva
Professor and Chair

New Department Hires

Dr. Deepak Venugopal (right) will be joining us as a tenure-track Assistant Professor in Fall 2015. Dr. Venugopal is completing his Ph.D. at the University of Texas at Dallas, where his research focuses on machine learning and artificial intelligence. He also brings industry experience as an R&D engineer on smartphone devices.

Mr. David Hirschfeld will join us in the fall as an adjunct instructor teaching a new elective course on video game programming. The course aims to introduce non-majors to programming concepts via the GameMaker engine. Students will be able to design and develop their own games during the course.

Ms. Lyndsey Rush is the department's new Administrative Secretary.

Ms. Joyce Stevenson has joined us as a Financial Services Associate.

Farewell to Faculty and Staff

Prof. Rick Sheldon will be leaving this fall to become the Chair of the Computer Science Department at the University of Idaho, main campus. Congratulations, Rick!

Prof. Chase Wu will be leaving this fall to take a faculty position at the New Jersey Institute of Technology.

Dr. Elena Strange will be leaving this fall for a faculty position at Rhodes College.

Ms. Cheryl Hayes, our longtime Administrative Associate, has taken a Business Officer position with the MD2K Center of Excellence.

Prof. Sheldon

Prof. Wu

Ms. Hayes

CS Research Day

The Department held its annual Research Day on April 3, giving both graduate and undergraduate students the chance to share their work with faculty and fellow students. **Prof. Santosh Kumar** and **Prof. Rick Sheldon** organized this year's event. The winners in each category were:

Oral Presentations

1. **Hillol Sarker** (Advisor: Prof. Santosh Kumar), Predict & Prevent: Mining Mobile Sensor Time Series for Just-in-Time Stress Interventions
2. **Austin Henley** (Advisor: Prof. Scott Fleming), Patchworks for LabVIEW: An Industrial Application and Evaluation of the Patchworks Interface
3. (Tie) **Nam Vo** (Advisor: Prof. Vinhthuy Phan), Improving Variant Calling by Incorporating Known Genetic Variants into Read Alignment
3. (Tie) **Nobal Niraula** (Advisor: Prof. Vasile Rus), Rapidly Scaling Dialog Systems with Interactive Learning

Posters

1. **Abhijit Nag** (Advisor: Prof. Dipankar Dasgupta), An Adaptive Approach towards the Selection of Multi-factor Authentication (also received 1st place in the graduate Math/CS category at the University Student Research Forum on Mar. 30)
2. **Nazir Saleheen** (Advisor: Prof. Santosh Kumar), puffMarker: A Multi-Sensor Approach for Pinpointing the Timing of First Lapse in Smoking Cessation
3. **Nobal Niraula** (Advisor: Prof. Vasile Rus), Judging the Quality of Automatically Generated Gap-fill Questions using Active Learning

Undergraduate Research

1. **Ashlesh Gawande** (Advisor: Prof. Lan Wang), Mini-NDN: A Lightweight Emulation Tool for Named Data Networking (also received 1st place in the undergraduate Math/CS category at the University Student Research Forum on Mar. 30)

Networking Research Lab News

We have a new undergraduate research assistant, **Benjamin Murphy**, joining us in May.

We released Version 0.2.0 of Named-data Link State Routing Protocol (NLSR) on May 1, 2015. NLSR is a secure routing protocol for Named Data Networking (NDN), which is currently deployed on the NDN testbed. The documentation and code is available at **http://named-data.net/doc/NLSR/current/**. We have also developed a light-weight emulation-based tool called Mini-NDN (**https://github.com/named-data/mini-ndn**) to perform large-scale experiments as well as to support automatic testing of our code.

Moreover, **Vince Lehman**, **Yaoqing Liu** (former NetLab member, currently an assistant professor at Clarkson University), and **Prof. Lan Wang** are co-authors of a journal paper "Efficient FIB caching using minimal non-overlapping prefixes" published in *Computer Networks*. Dr. Wang is also a co-author of a paper published in the Proceedings of the 18th IEEE Global Internet Symposium in April 2015.

Faculty Accolades

Prof. Dipankar Dasgupta gave invited talks at the New Jersey Institute of Technology, the University of Missouri - St. Louis, and the 2015 EDUCAUSE Security Professionals Conference in Minneapolis. He also gave the keynote address at the Queen's Graduating Computing Society Conference in Canada, as part of the ACM's Distinguished Speakers Program.

Prof. Scott Fleming received a 2015-16 Early Career Research Award from the U of M College of Arts and Sciences. He joins several other faculty from the department who have received this award in recent years.

Prof. Santosh Kumar is playing a key role in President Obama's recently announced Precision Medicine Initiative. Announced on Jan. 30, the initiative aims to improve patient care by individualizing treatment and prevention regimes. Making sense of patient data is a crucial requirement of this paradigm. Due to Prof. Kumar's expertise in the area, he is part of a small invited team tasked with making recommendations to move the initiative forward. Kumar is leading the NIH Center of Excellence for Mobile Data Sensor-to-Knowledge (**md2k.org**), a $10.8M, 11-university project that is working to develop innovative mobile health tools. He has given several talks at universities and conferences this spring, including two keynote speeches.

U of M Earns Cyber Defense Re-Designation

The National Security Agency and the Department of Homeland Security have designated the University of Memphis as a National Center of Academic Excellence in Cyber Defense Research (CAE-R) through academic year 2021. The designation will be formally recognized with a certificate presentation in June 2015.

Dr. Linda Sherrell retired from the Department in May 2013 after 12 years of service. During her time at the University, she served as the Undergraduate Curriculum Coordinator, the Chair of the Computer Science Curriculum Committee, and the Computer Science representative to the College of Arts and Sciences Curriculum Committee.

She has remained busy during her retirement, being elected to the Unit 144 Tennessee Bridge Association Board in November 2014. This body is responsible for hosting ACBL bridge tournaments in both Memphis and Tunica. Linda has also been assigned the task of introducing bridge to area youth. This summer, she will be teaching two bridge camps in Collierville at the Halle Plantation Clubhouse. Each camp will be open to 6th-12th graders and will run from 9:30 am-1:00 pm. The first camp will be held July 13-17 and the second from July 20-24. Although the second camp is primarily for the Girl Scouts – Heart of the South, other girls may attend if space permits.

Linda has been playing duplicate bridge since January 2008. She is an accredited Easybridge! presenter, and received her Life Master ranking in January 2015. For more information about the bridge camps or bridge in Memphis, contact her at 901.237.1840 or **linda.sherrell@gmail.com**.

Undergraduates Participate in Regional Programming Contest

The U of M sent two teams of undergraduate students to the CCSC Mid-South (**ccsc-ms.org**) programming contest held at Hendrix College on April 10. Team 1 consisted of **Shawn Hickman** and **Cameron Roe**, while Team 2 consisted of **Keenan Diggs** and **Ismael Husein Alonso**. **Mr. Kriangsiri Malasri** was the faculty sponsor and contest co-chair.

There were 19 teams from 9 schools participating in this year's contest. Both U of M teams finished in the top half of the final standings. Team 2 solved 3 of the 7 problems, earning them a 5th place finish. Team 1 solved 2 problems for a 9th place finish.

U of M Partners with 100 Girls of Code

The U of M has become an official chapter of 100 Girls of Code (**100girlsofcode.com**), a national organization started by the Tennessee Code Academy that aims to introduce more young women to computer science and engineering from an early age.

As part of this partnership, the Department will be holding a free workshop for girls ages 10-18 on May 28 to introduce them to the basics of writing code. Participants will get to create projects using the Scratch drag-and-drop programming tool, as well as create their own websites with HTML/CSS. Instructors **Dr. Elena Strange** and **Mr. Kriangsiri Malasri**, along with graduate student **Alka Singh**, will be leading the workshop. Additional workshops are planned for later in the summer.

Creative Game Design Camp

The Department will hold its inaugural Creative Game Design Camp from June 1-5. The camp will give high-school students a taste of game design and programming using the RenPy framework. Participants will also be treated to a number of guest lectures from local professionals. The camp is being organized and taught by departmental faculty **Dr. Elena Strange**, **Dr. Bill Baggett**, **Mr. Kriangsiri Malasri**, and **Prof. Vinhthuy Phan**.

Alumni News

- **Vince Lehman** (B.S. 2014) has joined the Department's Networking Research Lab as a full-time software developer. He is leading development of the Named-data Link State Routing Protocol (NLSR), among other projects. Vince had previously worked as an undergraduate research assistant in the lab.

- After two years in the Networking Research Lab as a postdoctoral fellow, **Syed Obaid Amin** has joined Futurewei Technologies, Huawei's research lab in the U.S.
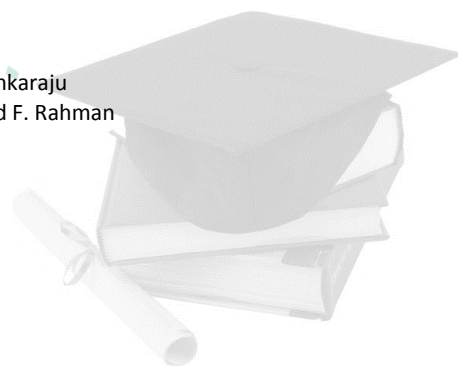
Spring 2015 Graduates

B.S.

Mark L. Berry	Bogdan Kasich	Tanner H. Smalley
Qi Fen Chen	Y. Quinn Lin	Sean Snell
Fletcher Cleaves	Kyle C. Mallard	Marcus D. Tipton
Richard T. Graham	Matthew S. Monteleone	David A. Vanelli
Kayla M. Grieme	Steven A. Morrison	David F. White
Nathan L. Haney	Lan Ngo	
Michael Hernandez	J. Adam Patrick	
Sean P. Higgins	Sarah M. Patrick	
Ismael Husein Alonso	Jorge D. Rivera	
Josh Jenkins	Matthew H. Sherman	

M.S.

Murali K. Ankaraju
Mohammad F. Rahman
Yang Zhou

Spring 2015 CS Colloquium

Held most Friday afternoons during the Fall and Spring semesters, the Computer Science Colloquium allows local and guest speakers to share their work. This semester's Colloquium organizers were **Prof. Dipankar Dasgupta** and **Prof. Rick Sheldon**.

Feb. 13 **Technology Innovation in the Mortgage Industry**
Dan Nemesek and **Jin Wang**
Software Developers, FNC, Inc.

Feb. 20 **Lifelong Learning from Videos and Wearable Sensors**
Byoung-Tak Zhang
Professor, School of Computer Science and Engineering, Seoul National University

Mar. 20 **Security of Machine Learning Systems**
Vir Phoha (ACM Distinguished Speaker)
Professor, Department of Electrical Engineering and Computer Science, Syracuse University

Mar. 27 **Narrative-Centered Learning Environments**
James Lester
Distinguished Professor of Computer Science, North Carolina State University

Apr. 10 **Quantum Computing**
Scott Tilley (ACM Distinguished Speaker)
Professor and Director of Computing Education, Department of Education and Interdiscplinary Studies, Florida Institute of Technology

Apr. 17 **Data Centers and Intel: An Overview**
Naga Gurumoorthy
Senior Principal Engineer & Senior Director, Data Center Engineering Group, Intel Corp.

Apr. 24 **Successful Visual Programming Languages - LabVIEW**
Andrew Dove
Chief Software Architect, National Instruments

In addition to the traditional colloquium, the Department started an Undergraduate Colloquium this semester under the leadership of **Dr. Bill Baggett**. Talks covered a variety of specific technical skills as well as career advice such as interviewing skills and seeking internships.

Where Are They Going?

Fletcher Cleaves is taking a position at AutoZone, where he interned.

Kayla Grieme is pursuing graduate studies in bioinformatics at the New Jersey Institute of Technology.

Sean Higgins is planning to attend graduate school for game design.

Bogdan Kasich will be working at International Paper, where he interned.

Steven Morrison is working at Medtronic.

Marcus Tipton has accepted a position at MLGW, where he interned.

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