



TEXAS TECH UNIVERSITY

Department of Computer Science™

Fall 2014

Texas Tech University - Edward E. Whitacre Jr. College of Engineering

Computer Science Alumni Newsletter

Message from the Chair

It has been a busy and thriving year for the Texas Tech Department of Computer Science (CS). As I am in my third year serving as a department chair, we have made great strides in many important areas. We also have faced and overcome many challenges; some expected, others not. These include the loss of a key staff member and two faculty members to illness, retirement and resignation, as well as having three faculty members who are coping with serious illnesses. In spite of these challenges, we have accomplished a great deal.

Our graduate and undergraduate (CS fundamental) enrollment this fall semester has risen from last fall by 36% and 39%, respectively. Our increase in graduate enrollment accounts for almost a third of overall increased graduate enrollment in the college.

Our research award dollars have increased by 46% from the last academic year. Our department won internal multi-million dollar competitive grants to lead two cluster hire initiatives of President Nellis in Big Data and Cyber Security. This will allow us to hire two new faculty members in these areas.

Our undergraduate program accreditation review by an ABET (Accreditation Board for Engineering and Technology) program evaluator team is scheduled for a site visit in November 2014. We feel strongly that our hard work in this area will pay off.

The college's dean, Al Sacco Jr., has acquired and approved funding to renovate a new state-of-the-art Computer Software and Systems Laboratory and a new collaborative classroom. The demolition and construction of the new laboratory has begun.

Our External Advisory Board inducted 10 more CS Academy members and organized our second fund-raising event that was hosted by our EAB member and alum, Dr. Dennis Carroll, at his home in Austin last May.

We also have a number of significant student and faculty accomplishments. We welcome our new faculty member, Dr. Mahshid R. Naeini and congratulate Dr. Yong Chen on being named a 2014 Young Achiever in Scalable Computing by the IEEE Technical Committee on Scalable Computing. Dr. Richard Watson has been named to the Texas Tech Teaching Academy, and he is the first CS faculty member with that designation. Dr. Gopal Lakhani has donated generous gifts to our students. We recognize these great contributions and accomplishments, but there is a good deal more that needs to be done as we progress towards our goal to become a reputable department within a "Tier 1" university.

All of the successes we have had are not only a credit to the department's individual members, but to all of us. Many thanks to those of you who have put forth a great deal of effort and made a difference. We could not have accomplished so much without your tireless determination and hard work. I would like to end my message by borrowing the famous quote of President Kennedy in his Inaugural Address in 1961 for use in our context. "Ask not what your department can do for you – ask what you can do for your department!"



Hewett



2014 Summer Workshop on Cyber Security Participants

Department Hosts Second Annual Summer Workshop on Cyber Security

The second annual Summer Workshop on Cyber Security was held in July 2014 on the main campus of Texas Tech.

The cyber security workshop series is sponsored by the National Science Foundation (NSF) with the aim of promoting cybersecurity research and education in the United States.

The Center for the Science and Engineering of Cyber Security in the Department of Computer Science at Texas Tech, in partnership with the Center for Security Studies at Angelo State University and The University of California at Riverside, organized this one-week event.

Faculty members and graduate students, as well as experts from industry, presented research and educational topics on cyber security. The workshop program included exciting and interesting sessions including: Cybersecurity Fundamentals, Network Security, Software Security, Data and Information Security, Smart Grid Security, and Forensics.

The sixteen participants were faculty members and educators affiliated with community, private, and minority-serving colleges in Texas.

The workshop was hosted by Drs. Akbar Siami-Namin and Rattikorn Hewett from the Department of Computer Science at Texas Tech. Computer science graduate students presenting research included Alaa Darabseh, Elham Hojati, Sara Sartolli, Xiaozhen Xue, and Jianjun Zheng.

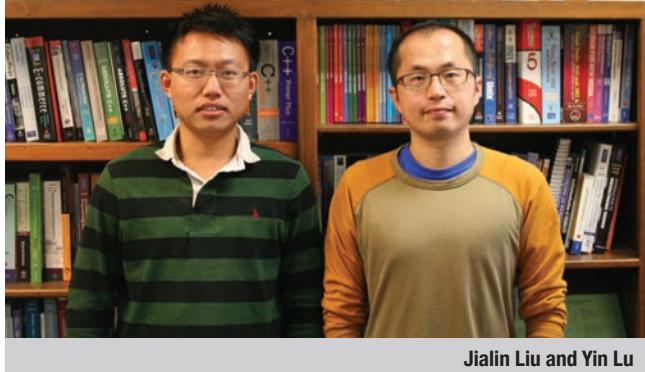
For more information on the 2014 and 2013 workshops, please visit the workshop website at: www.cs.ttu.edu/workshop

Rattikorn Hewett, Ph.D.
Professor and Chair



Student News

Lu, Liu, and Leidel Awarded NSF/IEEE Travel Grants



Jialin Liu and Yin Lu

Computer science doctoral students Yin Lu, Jialin Liu, and John Leidel were awarded travel grants provided by the National Science Foundation and the IEEE Technical Committee on Parallel Processing.

The grants allowed the students to participate in IPDPS 2014, the 28th IEEE International Parallel & Distributed Processing Symposium, which took place in Phoenix, Arizona in May 2014.

Lu, Liu, and Leidel presented the following at IPDPS 2014:

- “Towards Efficient Parallel I/O Middleware at Extreme Scale” presented by Yin Lu at the IPDPS 2014 Symposium Ph.D. Forum.
- “Model-driven Data Layout Selection for Improving Read Performance” presented by Jialin Liu at the International Workshop on High Performance Data Intensive Computing, held in conjunction with IPDPS 2014.
- “HMC-Sim: A Simulation Framework for Hybrid Memory Cube Devices” which was presented by John Leidel at the Large Scale Parallel Processing Workshop, held in conjunction with IPDPS 2014.

Xie Awarded NSF Travel Grant to Attend Cluster, Cloud and Grid Computing Conference

Wei Xie, a computer science doctoral student, was awarded a National Science Foundation travel grant to attend CCGrid2014; the 14th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing; in May 2014.

He presented his research, which was titled “An Adaptive Data Separation Aware FTL for Improving the Garbage Collection Efficiency of Solid State Drives” in Chicago, Illinois in May 2014.



Xie

Colmenares Presents Research at PDPTA'14

Eduardo Colmenares, a computer science doctoral student, presented his research at PDPTA'14, the 2014 International Conference on Parallel and Distributed Processing Techniques and Applications. This conference was held jointly with WORLDCOMP'14; the 2014 World Congress in Computer Science, Computer Engineering, and Applied Computing; in July 2014.



Colmenares

His research was titled “Maximizing Hardware Performance via Non-Blocking Collective Communications for All Pairs Shortest Path Computation in Heterogeneous Multi-core Processors.” He works under the supervision of Dr. Yu Zhuang, an associate professor.

Colmenares also represented the Department of Computer Science in the 2014 Texas Tech Graduate Student Research Poster Competition and was awarded second place in the Engineering II category.

Feroz and Mengel to Present at IEEE Big Data

Mohammed Feroz, a master’s student, and Dr. Susan Mengel, an associate professor, will present their research; “Examination of Data, Rule Generation and Detection of Phishing URLs using Online Logistic Regression;” at IEEE BigData 2014, the IEEE International Conference on Big Data, in October 2014 in Washington, D.C.

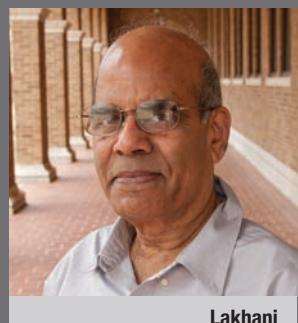


Feroz

IEEE BigData 2014 provides a leading forum for disseminating the latest research in Big Data Research, Development, and Application.

Lakhani Establishes Scholarship

Dr. Gopal Lakhani, an associate professor, established a \$50,000 scholarship endowment this year. The new scholarship, the Gopal and Asha Lakhani Computer Science Scholarship Endowment, will provide two annual \$1,000 scholarships and will be given to computer science undergraduates who participate in undergraduate research at Texas Tech.



Lakhani



Faculty and Departmental News

Chen Named IEEE TCSC Young Achiever in Scalable Computing

Dr. Yong Chen, an assistant professor of computer science, has been named a 2014 Institute of Electrical and Electronics Engineers (IEEE) Technical Committee on Scalable Computing (TCSC) Young Achiever in Scalable Computing.

Five recipients were selected by the IEEE TCSC selection committee and the award will be presented at the 2014 International Conference on High Performance Computing, Networking, Storage and Analysis (SC14) conference in New Orleans, Louisiana in November.

The IEEE TCSC annual Young Achiever in Scalable Computing Award recognizes up to 5 individuals who have made outstanding, influential, and potentially long-lasting contributions in the field of scalable computing within five years of receiving their Ph.D.

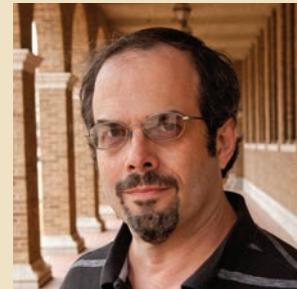


Chen

Watson Inducted into the Texas Tech Teaching Academy

Dr. Richard Watson, associate professor of computer science, has been inducted into the Texas Tech Teaching Academy.

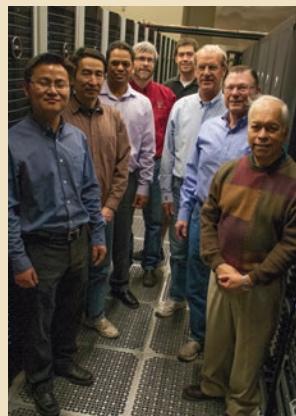
He was selected because he has demonstrated a significant commitment to teaching excellence. The mission of the Teaching Academy is to advocate for teaching excellence, promote service related to the university's teaching mission, advise and mentor colleagues and others, and share knowledge about teaching strategies and their implementation as appropriate.



Watson

Texas Tech to Build Faster, More Efficient Supercomputer Prototype

Dr. Yong Chen, assistant professor and director of the Data-Intensive Scalable Computing Laboratory at Texas Tech University, is leading a team of researchers including Dr. Yu Zhuang, an associate professor of computer science, in a \$500,000 National Science Foundation grant titled, "Development of a Data-Intensive Scalable Computing Instrument (DISCI) for High Performance Computing."



DISCI Team

The team's goal is to create a supercomputer that will enable academic departments, cross-disciplinary units, and collaborators to analyze and utilize their data and put them to use with accuracy, speed, and efficiency.

Chen Receives \$1M National Science Foundation Grant

Dr. Yong Chen, an assistant professor in computer science, received a \$1M grant from the National Science Foundation, award number CCF-1409946, to work on a project titled "Compute on Data Path: Combating Data Movement in High Performance Computing" to tackle critical data movement challenges for scientific big data applications in high performance computing.

Department Hosts NSF REU on Declarative Programming and its Applications

Computer science faculty members Drs. Michael Gelfond, Rattikorn Hewett, Akbar Siami-Namin, and Yuanlin Zhang hosted the first NSF-sponsored Research Experiences for Undergraduates (REU) program on Declarative Programming and its Applications this summer. The program aimed to solve problems in the areas of cybersecurity, energy, healthcare, and space exploration.



REU Poster Presentations

The program attracted a diverse group of talented students from top universities and four year colleges. Participants produced good research results including the work of one team, which has been accepted by the REU symposium organized by the Council on Undergraduate Research.

Department Staff Member Mysti Digby Retires

Mysti Digby, a longtime staff member in the Department of Computer Science, retired in 2014 for medical reasons and a party celebrating her service was held in September.



Digby

She was a part of the department for 24 years and touched the lives of many students. Her retirement closes a chapter in the department's history and the faculty, staff, and students wish her good health and the best in her future activities.



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New Faculty Member

Naeini Named Assistant Professor

Dr. Mahshid R. Naeini has been named an assistant professor in the Department of Computer Science.

She received a Ph.D. in electrical and computer engineering with a specialty in communication systems from the University of New Mexico in 2014.

Naeini's research spans the broad area of distributed systems, including computer networks, distributed computing, complex networks, and cyber-physical systems.

She develops hybrid mathematical frameworks for modeling the dynamic behavior of distributed, interdependent systems and employs such frameworks to characterize the effect of information on the physical world to analyze security, reliability and efficiency of distributed systems and cyber-physical systems. Some key theoretical tools that Naeini uses in her research include network science theory, stochastic processes, game theory and algorithms, and optimization.



Naeini

Keeping in Touch

The Texas Tech Department of Computer Science would like to know what is happening in your professional life. Visit the following website to update your information or let us know about your accomplishments:

www.coe.ttu.edu/info

Alumni News

Department Welcomes New Computer Science Academy Members



2014 Computer Science Academy inductees:
Front: Chad Smith, Matt Barry, and Chris Burchett.
Rear: Darrell Bateman, John Mihm, Simon Cheng, and Todd Knowlton.
Not pictured: Ed Corwin, Rajan Desai, and Toni Logar

The Computer Science Academy was established in April 2012 by The Texas Tech Computer Science External Advisory Board.

The academy was created to be an honor society for Texas Tech computer science alumni and friends of the Department of Computer Science.

Alumni are nominated to recognize career accomplishments, community involvement, contributions to the computer science discipline, and ethics. The 2014 Computer Science Academy inductees included Matt Barry, Darrell Bateman, Chris Burchett, Simon Cheng, Ed Corwin, Rajan Desai, Todd Knowlton, Toni Logar, John Mihm, and Chad Smith.