



TEXAS TECH UNIVERSITY

Department of Computer Science™

Fall 2012

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

Computer Science Alumni Newsletter

Message from the Chair

It has been a busy year for the Department of Computer Science (CS) with the plans and changes that are needed to strengthen our department and its standing in the university. We have implemented the renewal of our undergraduate program with updated introductory courses and new elective courses that promote research experience for our students. Preparation has begun for the impending accreditation of our undergraduate program. Increased efforts are underway to improve the quality of our program so that we can attract and retain good students. We are fortunate to have strong support from our external advisory board (EAB), which consists of many distinguished CS professionals and alumni. They have also provided great assistance in preparing a fundraising plan for our new laboratory for undergraduate students.



Hewett

Research by our faculty covers many areas from high performance computing to intelligent informatics and software engineering. This year has seen a promising increase in research grants, from DARPA and NSF, and new research initiatives including a center for cyber security and collaboration with Intel Corporation, and we should continue to build upon this success. The department must carry on its efforts to make connections with other fields in order to promote multidisciplinary research. The department has lost five faculty members in the past two years, and it is our hope that we will be able to add faculty positions in both core and multidisciplinary areas. Although we have made a good start, more is needed to make CS a vital and productive department. We need to cultivate a responsible community dedicated to (1) the advancement of the science and technology of computing, (2) the preparation of our students for productive and rewarding careers, and (3) service to the department, the university, and the community.

Our newsletter highlights exciting news about the accomplishments of our students, faculty, and alumni. Our undergraduate student team, guided by Dr. Chen, has advanced to become a finalist of the 2012 ACM/IEEE Supercomputing Conference Student Cluster Competition. The final competition with other teams from around the world will be held in November. Patrick Kahl, one of our Ph.D. students, received a SMART scholarship sponsored by DARPA. Dr. Chen has also received the Ralph E. Powe Junior Faculty Enhancement Award from Oak Ridge Associated Universities 2012. He is the only recipient of this award in mathematics and computer science. The department's national and international reputation has been enhanced by Dr. Gelfond's paper, "The Stable Model Semantics for Logic Programs," which was co-authored with Vladimir Lifschitz. This paper has received the Most Influential Paper in 20 Years Award from the Association for Logic Programming 2004. As this message is being written, the paper has 3076 citations. You will find more accomplishments of our faculty and students in the newsletter.

Change is difficult, especially revolutionary change that reinvigorates initiatives, transforms cultures and transcends the spirit. The Department of Computer Science still faces formidable challenges, but we are making much needed changes. Much credit is owed to the efforts of faculty, staff, and the EAB. I want to express our gratitude to Dr. Bill Marcy for serving as interim department chair at a critical time. His support has eased my transition to department chair in January 2012. Finally, we want to thank Dean Sacco for his support and his belief that the CS department still has a significant role in the university. The department has become more accessible, transparent, collegial, and accountable, although much remains to be done. I can guarantee that the coming year will be an adventurous one. Please stay in touch. We would like to hear from you.

Dr. Rattikorn Hewett, Chair



A NASBI participant attempts to operate PeopleBot in Dr. Sridharan's Robotics Lab.

Native American High School Students, Area High School Students Learn about CS from Robots

As part of the Native America Summer Bridge Institute (NASBI) organized by the Cross Cultural Academic Advancement center (CCAAC) of the Division of Institutional Diversity, Equity and Community Engagement at Texas Tech, Dr. Mohan Sridharan, an assistant professor of computer science, conducted a workshop session for 43 Native American prospective high school students from across the nation.

The workshop included videos of robots in action that showed practical applications of computer science and highlighted key computing skills a student is likely to learn.

The students also had the opportunity to watch demos and interact with the robots through an interface.

Texas Tech students Kimia Salman, Sarah Rainge, Stephanie Graham, and Shiloh Huff assisted the high school students as they worked with an educational tool known as the "Dorothy" project.

The Dorothy project integrates 3D programming and robotics to teach core computing concepts. Students are able to see how they could write "programs" to solve problems without any programming knowledge, and then see the programs execute automatically on robots.

Sridharan also used the tool to conduct outreach sessions for students from Hutchinson Middle School in Lubbock and New Deal High School in the spring of 2012.

Computer science undergraduates David South, a Texas Tech student, and Mary Shuman, an UNC-Charlotte student, helped develop the tool as part of the NSF-funded REU site project co-hosted by the Departments of Industrial Engineering and Computer Science in the summer of 2011.

The REU program is hosting ten undergraduate students in at Texas Tech this summer.

Student News

Texas Tech Team Named Finalist at Student Cluster Competition



DISCL Group (L-R) Chao Chen, Dr. Yong Chen, Brad Crysler, Yin Lu, Shane Tarleton, Becky Scheers, Teo Hall, Morgan Cook, Ryan J. Merritt, Taylor Denison, Dr. James Abbott

Texas Tech undergraduate students, under the supervision of Yong Chen, an assistant professor of computer science and director of the Data-Intensive Scalable Computing Laboratory (DISCL) at Texas Tech, have been selected as one of the finalist teams to compete in the Student Cluster Competition (SCC) at the 2012 ACM/IEEE International High Performance Computing, Networking, Storage, and Analysis Conference. The conference, also known as the Supercomputing Conference, will be held in November.

Team members from the Department of Computer Science include Bradly Crysler, Taylor Denison, Shane Tarleton, and Nick Zaragoza. Teo Hall, a computer engineering major, and Ryan Merritt, a chemistry major, are also on the team.

Through a sponsorship from Dell Inc., the team received 24 cluster nodes with the latest processors, high-speed InfiniBand network cards, switches, and storage devices.

Support is also being provided by Dr. James Abbott from the Texas Tech High Performance Computing Center (HPCC).

South Selected to Present at National Conference on Undergraduate Research

David South, an undergraduate computer science major, was selected to present "Integration of a 3-D Programming Environment with Robotics to Stimulate Interest in Computing" at the National Conference on Undergraduate Research in March 2012.



South

David is an Association for Computing Machinery (ACM) officer and was one of three students selected from the college to present at the conference. More than 3500 abstracts from across the U.S. were selected.

Lu Wins Best Paper at FutureTech Conference

Yin Lu, a Doctor of Philosophy in computer science candidate, won the Best Paper Award for his paper titled "A New Data Sieving Approach for High Performance I/O" at the 7th International Conference on Future Information Technology (FutureTech'12) in Vancouver, Canada in June 2012.



Lu

His paper was co-authored by Texas Tech graduate student Prathamesh Amritkar; Dr. Yong Chen, an assistant professor of computer science; Dr. Rajeev Thakur, of Argonne National Laboratory; and Dr. Yu Zhuang, an associate professor of computer science.

Lu is jointly advised by Chen and Zhuang, who are members of the Data-Intensive Scalable Computing Laboratory (DISCL).

Guvvala and Tambi Win Student Travel Grants to Attend IEEE Cluster Computing Conference

Doctor of Philosophy candidate Yugendra Guvvala, and Master of Science student Anupam Tambi, were awarded student travel grants and attended the Institute of Electrical and Electronics Engineers (IEEE) Cluster Computing Conference in Austin in September 2011.



Guvvala

Both students also attended SC, the International Conference for High Performance Computing, Networking, Storage and Analysis in November 2011 and presented two poster studies.

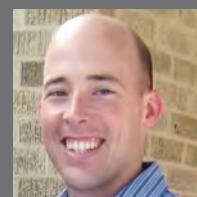


Tambi

Dr. Yu Zhuang, associate professor of computer science, advises Guvvala and Tambi is advised by Dr. Yong Chen, assistant professor of computer science.

Blount and Inclezan Receive Travel Grants and Present at Doctoral Consortium

Justin Blount and Daniela Inclezan, Doctor of Philosophy in computer science candidates, were selected to present their research at the Doctoral Consortium of 13th International Conference on Knowledge Representation and Reasoning in Rome in June 2012.



Blount

The selection was competitive and both received grants that facilitated their attendance. Blount and Inclezan presented their dissertations and discussed their work with internationally known researchers who were appointed as mentors.



Inclezan

Blount's dissertation is titled "Reasoning About Intentions" and Inclezan's dissertation is titled "Modular Action Language ALM."



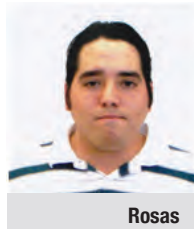
CS Graduate Students Take Second in Program Comprehension Competition

A team of graduate students, under the supervision of Dr. Akbar Siami Namin, won second place and was awarded a certification at the International Conference in Program Comprehension (ICPC) in Kingston, Ontario in June 2011.

The conference provides an opportunity for researchers and industry practitioners to present and discuss both the state of the art and the state of the practice in the general area of program comprehension.

Team members Omar Rosas, Pankaj Sharma, and Vinitha Subburaj worked to fix a high-priority bug in a piece of code that was used to control a robot. In the scenario, a robot sold by a fictional company receives generates complaints. According to the complaints, the robot malfunctions and self-destructs. The team's challenge was to find the bugs, fix the problems, explain the fix to all stakeholders, and convince them it will never happen again.

The teams were required to show the tools and techniques (e.g., software visualization or testing tools) that helped them understand the code and fix the bugs more easily.



Rosas



Sharma



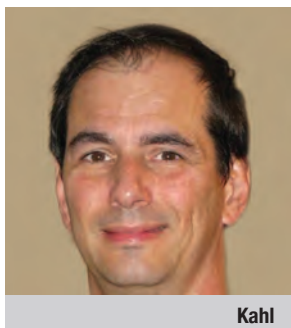
Subburaj

Kahl Recieves SMART Scholarship from the Department of Defense

Patrick Kahl, a Doctor of Philosophy in computer science candidate, received a SMART scholarship from the Department of Defense (DOD).

The Science, Mathematics And Research for Transformation (SMART) Scholarship for Service Program, established by the DOD, is an opportunity for students pursuing an undergraduate or graduate degree in science, technology, engineering, and mathematics disciplines to receive a full scholarship and be employed upon degree completion.

Participants in the SMART Scholarship for Service Program receive a scholarship that pays for full tuition and education related fees, a cash award paid at a rate of \$25,000 - \$41,000, paid summer internships, health insurance reimbursement, book allowance, mentoring, and employment placement after graduation.



Kahl

Faculty News

Gelfond's Paper Named "Most Influential Paper"

Dr. Michael Gelfond, a professor of computer science, was recognized at the International Conference on Logic Programming held in Budapest in September 2012.

His paper, "Representing Actions in Extended Logic Programming" with Vladimir Lifschitz, was chosen as the most influential 1992 logic programming paper, 20 years onwards. Their paper was chosen by the Association of Logic Programmers Executive Committee using biblio-metric information in a first stage and personal criteria in a second stage.

Drs. Gelfond and Lifschitz' paper has been cited 600 times since 1992.



Gelfond

Chen Receives Powe Junior Faculty Enhancement Award

Dr. Yong Chen, an assistant professor of computer science was recently selected to receive a Ralph E. Powe Junior Faculty Enhancement Award from the Oak Ridge Associated Universities.

These awards provide seed money for research by junior faculty at Oak Ridge Associated Universities member institutions and are intended to enrich the research and professional growth of young faculty and result in new funding opportunities.



Chen

Lim Receives Best Paper Award

Dr. Sunho Lim, an assistant professor of computer science, in collaboration with Drs. Jongpil Cheon, Sangno Lee, and Steven M. Crooks, received a best paper award.

The paper, "An Investigation of Mobile Learning Readiness in Higher Education based on the Theory of Planned Behavior," was named the best paper for SIG-IT at the 2012 Annual Meeting of the American Educational Research Association (AERA) in Vancouver, British Columbia in April 2012.



Lim



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STEM Outreach



Drs. Lim and Cheon with Parkway Elementary students at Scratch Summer Camp 2012.

Scratch Summer Camp Introduces Elementary Students to CS

The department recently hosted Scratch Summer Camp 2012, a camp for 3rd – 5th elementary students at Parkway Elementary School in Lubbock. The purpose of this camp was to increase children's computational thinking skills, systematic reasoning skills, and creativity through computer programming.

Dr. Sunho Lim, assistant professor of computer science, Dr. Jongpil Cheon, from the Department of Psychology and Leadership, and graduate student Sungwon Chung led the camp. The Scratch Summer Camp 2012 was supported by the College of Education.

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

Nick Gianoutsos

Nick Gianoutsos, a 2005 Master of Science in computer science graduate, recently received an award from the Secretary of the Interior for his work aboard the NOAA research vessel M/V International Peace collecting samples in response to the Deepwater Horizon oil spill. Read about his work on a NOAA blog at: noaaspillscienceblog.wordpress.com/2010/10/03



Gianoutsos

Dr. Dennis J. Carroll

Dr. Dennis J. Carroll received a Doctor of Philosophy from Texas Tech in 1991, becoming the first person to enter as a freshman and exit with a Ph.D. in computer science. He is the second computer science graduate to be named a Distinguished Engineer. Carroll is the director of innovation for the Government Solutions Group of Affiliated Computer Services (ACS), a Xerox Company. GSG provides software solutions for federal, state, and local government services.



Carroll

Dr. Ben Calloni

Dr. Ben Calloni, a 1997 Doctor of Philosophy in computer science graduate, has been selected as an associate fellow of the American Institute of Aeronautics and Astronautics for 2012. To be selected for the grade of associate fellow, an individual must be an AIAA senior member with at least 12 years professional experience and be recommended by a minimum of three current associate fellows. Calloni works for Lockheed Martin Aeronautics Company in Fort Worth.



Calloni