Chair’s Message

AS WE CELEBRATE THE 50TH ANNIVERSARY OF THE FOUNDING OF THE DEPARTMENT OF COMPUTER AND INFORMATION SCIENCES (CIS)—one of the nation’s oldest—our initiatives to expand research and education are bearing fruit as we push toward the next level of excellence.

We are excited about our new faculty members, including Anduo Wang and Qian Zhen (profiled on page 2), and our growing number of students. This year’s 817 undergraduate majors represent a 16 percent increase over last year, and we have nearly 100 graduate students. Meanwhile, both faculty and students continue to enjoy our beautiful, spacious facilities in the Science Education and Research Center (SERC), which opened in September 2014.

This also has been a robust year for research grants (see page 3). New grants have already exceeded $4 million and our grant applications have increased 35 percent.

Please browse the entire CIS website, cis.temple.edu. You will find many exciting CIS events, including the Future of Computing competition, our distinguished lecture series and department colloquia. You will also see how committed we are to making CIS the new center of excellence in computer and information sciences in the Greater Philadelphia area.

Please visit us.

Sincerely,

Jie Wu
Laura H. Carnell Professor and Chair, Department of Computer & Information Sciences
cis.temple.edu

CIS celebrates 50th anniversary

The Computer & Information Sciences Department at Temple University, one of the nation’s oldest computer science departments, is celebrating its 50th anniversary this year. On November 19, CIS hosted an open house in its new home in the Science Education and Research Center (SERC), which included student poster presentations and discussions on the department’s early years and impact in the field.

CIS is currently ranked among the top 150 programs, according to the 2015 Academic Ranking of World Universities, with NSF grants totally $8 million this year.

Also on November 19, more than 110 faculty, alumni and friends celebrated the anniversary at a dinner in SERC’s soaring two-story lobby. Speaker’s included Michael L. Klein, FRS, dean of the College of Science and Technology and Laura H. Carnell Professor of Science, Jie Wu, Laura H. Carnell Professor and CIS chairman, and Temple University alumnus Steven Petchon, FOX ’80, a strong supporter of the department.

Former CIS department chairs Frank Friedman and Leonard Garrett and CIS alumnus Joseph Tait, FOX ’82 also spoke.
NSF grant fosters undergraduate research in mobile and cloud computing

The CIS Department earlier this year received a three-year, $350,000 National Science Foundation Research Experiences for Undergraduates (REU) grant to catalyze research and infrastructure capabilities in order to enrich undergraduate students’ research experiences. Jie Wu, department chair, is the principal investigator; Associate Professor Avinash Srinivasan is the co-PI. The grant will enable students majoring in computer science and related disciplines to investigate state-of-the-art research topics in mobile and cloud computing.

CIS welcomes 2 distinguished professors

Anduo Wang, Assistant Professor

Anduo Wang’s research is in the area of formal verification with applications in a wide range of computer systems, especially in the sub-area of software-defined networking. Wang received her PhD degree from University of Pennsylvania in 2013 and has since worked as a postdoctoral fellow in the Department of Computer Science, University of Illinois Urbana-Champaign.

Wang has more than a dozen publications in respected journals.

Qiang Zeng, Assistant Professor

Qiang Zeng’s main research interest is software security, with a focus on intrusion detection, diagnosis and automated response. During a research internship at NEC Labs in fall 2012 and spring 2013, Qiang worked on a software engineering project called DeltaPath. DeltaPath was accepted by the 2014 International Symposium on Code Generation and Optimization, which is a premier conference in code generation and optimization.

Zeng received his PhD in 2014 from Pennsylvania State University.

New non-tenure-track faculty join CIS

CIS is welcoming six new non-tenure-track faculty members: Edward Crotty (University of Pennsylvania), Joseph Jupin (Temple University), Xiuqi Li (Florida Atlantic University), Shahram Mohrehkesh (Old Dominion University), Athanasia Polychronopoulou (Temple University) and Charles Wang (Wayne State University).

In addition, Md Zakirul Alam Bhuiyan—who recently completed a postdoctoral fellowship at Central South University in Changsha, China—has joined CIS as a research assistant professor. His research focuses on cyber physical systems, wireless sensor network applications, fault-tolerance and reliability, and sensor-cloud computing. With these new additions to the department, we hope to enrich the already vibrant learning community established here by bringing students and scholars together.

IST master's degree student Rebecca Fernandez

Rebecca Fernandez is a newly admitted master’s degree student in information science & technology for the upcoming spring semester. Fernandez, a Miami native who two years ago earned a BS in psychology from Florida International University, originally planned to pursue a PhD in clinical psychology with an interest in psychometrics.

However, her experiences in her psychology lab and her enjoyment of statistical psychology stoked an interest in creating systems, coding and programming. “Coding is like writing an essay or a research paper,” she says. “It’s a creative process that comes naturally to me.

After graduation she moved to Philadelphia for the chance to be in an area with larger businesses that have greater needs for programmers. She immediately began taking information science pre-requisite courses at Temple in data structures and discrete math.

With the help of Rose McGinnis, the College of Science and Technology’s director of career services, during the summer of 2014 Fernandez also obtained a paid internship at Tokio Marine North America Services in Bala Cynwyd, Pennsylvania—where she continues to work as a middleware and application support intern.

“They’ve been very supportive, answering questions about what I’ve learned in school to their enterprise and encouraging me to return to them after I complete my degree,” she says.

That kind of practical opportunity is one of the reasons she is so pleased with CST and the CIS Department. “The thing I appreciate most about Temple is how invested the CIS Department is in helping its students,” she says.

She also appreciates the professors and administrators she has encountered: “They are eager to instruct as well as get involved with, engage and challenge each student, both in and out of the classroom. That includes making sure we understand instructional material or helping us with our research.

“I like the fact that we aren’t just presented with textbook scenarios,” she adds. “Instead, we are challenged with problems that we can’t prepare for ahead of time—which mimics real-world scenarios.”

Fernandez is also the community service officer for Temple’s ACM chapter. “I like being able to use my skills to assist the CIS community,” she says.
Using 3-D cameras and high-speed broadband to enhance public safety

Most camera-based surveillance systems are static, providing law enforcement with limited flexibility. They also do not operate effectively when visibility is poor, such as at night or in inclement weather. But now, thanks to a National Science Foundation-funded grant, CIS researchers are developing a mobile surveillance camera system that will provide police officers with enhanced viewing capabilities.

Led by Jie Wu, Laura H. Carnell Professor and chair of CIS, the researchers are developing algorithms that allow for the integration of mobile 3-D cameras with cloud-based computing via wireless, high-speed broadband networks. Law enforcement will have more flexibility in deploying the cameras, as well as access to enhanced video and vital information such as facial recognition.

During the two-year pilot program, the researchers will field-test their new system on Temple Police vehicles. The system allows officers to take the cameras where they are most needed, said Wu. In addition to Wu, the team includes Professor Eugene Kwatny and Assistant Professors Chiu Tan and Haibin Ling.

“Temple Campus Safety Services operates 500 cameras across its Main Campus, but those cameras are mounted on buildings and poles and at other stationary positions,” said Wu. “We want to make the 3-D cameras more mobile.”

The video from the police cameras streams back to the police dispatch using a combination of WiMAX, a next-generation wireless network, and WiFi. Wu is currently developing an experimental WiMAX wireless network in downtown Philadelphia, in collaboration with Drexel University, through another NSF grant.

Temple’s high-performance computing cluster known as Owl’s Nest uses the researchers’ algorithms to immediately analyze the enhanced video from the 3-D cameras to provide the police with information. Wu said the researchers also hope to provide officers with some computational abilities in the police car via laptop computers that will allow for quick analysis of a potential emergency situation.
9 CIS students attend Grace Hopper Women in Computing Celebration

Scholarship recipients (and their sponsors) who attended the 2015 Grace Hopper Women in Computing Celebration in Houston, Texas, in mid-October included:

- CIS Grace Hopper Scholars: Elizabeth Weissman, Chelsea Simek and Swati Shrivastava
- Grace Hopper Faculty Scholarship: Instructor Claudia Pine-Simon
- Vanguard: Pallavi Koturu and Melissa Martin
- OwlCrowd funding: Robyn McCue, Tracey Harrison, Mckenzie Xian Orion and Rachel Tritsch.

Distinguished Lecture Series

To celebrate the 50th anniversary of the founding of the Computer & Information Sciences Department, CIS is staging a Distinguished Lecture Series.

Speakers so far have included Jim Kurose, National Science Foundation, on “An Expanding and Expansive View of Computing,” Mark Snir, University of Illinois at Urbana-Champaign, on “Supercomputing—the Next Ten Years” and Jose Joaquin Garcia-Luna-Aceves, “New Directions in Content Centric Networking.”

Upcoming lectures include Barbara Liskov, MIT, in March 2016.

For more information, please go to cis.temple.edu.

Supporting the next generation

Steven Petchon, FOX ’80, has endowed two major gifts to the CIS Department. The Petchon Family Computer and Information Sciences Endowed Scholarship Fund provides a $6,000 scholarship each year to a deserving undergraduate CIS major. The Steven B. Petchon Endowment Supporting Student ACM Involvement supports students’ attendance at Association for Computing Machinery events.

In addition, endowed professorships bring top researchers to the College of Science and Technology. To support outstanding faculty, CST has launched a $1 million campaign to fund two endowed term professorships. Learn how you can support CST faculty at http://cst.temple.edu/giving/professorship-challenge.

For more information, contact John Walker, CST Associate Vice Dean, at 215-204-8176.

CIS offers two new certificate programs in programming and digital forensics security

The CIS Department is pleased to announce the availability of two new certificate programs. Both consist of only three courses and will provide additional job-market opportunities for students majoring in CIS and other related majors as well as working professionals.

The Certificate in Programming provides an opportunity for non-CIS students to gain skills and experience in programming and databases, making them more adaptable for opportunities in our technologically-driven world. The Certificate in Computer Security in Digital Forensics enables CIS students to supplement their coursework with additional focus in the security arena.