Undergraduates’ iPhone Application Released

If an Ohio State football fan wanted to view real-time, in-depth coverage of home football games on their iPhones and iPod Touches, there’s now an app for that. The application, iShoe, was developed by a team led by junior Christopher Dean under the guidance of Professor Rajiv Ramnath and doctoral student Thomas Lynch, who serves as project engineer. Dean’s fellow students, Alex Stevens, Adam Zink and Michael Rojas helped with the project as well. It provides users with complete play-by-play coverage for every home game, full-color renderings of each drive and an archive of drive renderings from 2009 home games. It also includes exclusive video replays only for users inside the stadium during the game, as well as team rosters, player and coach bios and pictures. The app is updated during the game so users receive real-time statistics for each team and individual players, as well as schedules and final scores for the current season and past. iShoe is the only official Ohio State football application in the Apple App Store.

The application was developed after a corresponding website was established (http://iss.osu.edu/iShoe/). It was completed in summer 2009 by Dean and undergraduate student Peter Dietz. During every home football game last season, Lynch, Dean and undergraduate student Thomas Loh and graduate student Sheetal Ghadse operated the site to provide real-time updated plays, video, and statistics to users. Once they actually began developing the application, it only took about three months to complete. Stevens began leading a project team with Arathi Mani and Jim Power to develop a version of iShoe for Android in fall 2010.

"Leading the iShoe team has been an incredible experience," Dean said. "I have learned about aspects of computer science that couldn’t be taught in the usual curriculum and have gained a perspective that enhances my learning inside the classroom. Working with Dr. Ramnath and having very skilled members working on the project made leading the team to success very easy." The team began learning how to use the programming language, Objective C, last January.

The iShoe team was able to coordinate receiving the same statistics feed and video clipping abilities that news outlets and the scoreboard get during the game through collaboration with the Athletics department. During every home game, members of the iShoe student team sit in the press box and clip videos of each play and associate it with each player. All users of the app sitting in the stadium during game time can watch the video. (Due to licensing agreements with ABC/ESPN and the Big Ten Network, video is not available outside of the stadium or after the game.) Initially, iShoe was a website adapted under license from eStadium, developed at Purdue University, in a capstone course, with lecturer Igor Malkiman.

(Continued on Page 2)
Message from the Department Chair

Dear CSE Alumni, Parents, Friends and Colleagues,

As the country slowly leaves the shadow of the economic recession, the department is working hard to maintain the momentum we have gained during the last five years, in spite of our budget challenges. We have experienced a continual increase in CSE enrollment and increased productivity of the CSE faculty and staff members. I am pleased to tell you that we have just hired four excellent assistant professors in the areas of databases, graphics, machine learning and networking. We will formally introduce them in the next issue of the newsletter.

In addition to our faculty research and accomplishments, we also introduce senior undergraduate projects and related activities. We are pleased to showcase innovative projects of our students, who are delving beyond the classroom to participate in entrepreneurial pursuits and the development of software applications using touch screen technology.

For our alumni feature, we have interviewed two CSE alums who have distinguished themselves in each of their respective fields and are playing strong leadership roles in industry and academia after leaving Ohio State. In this issue, we introduce Steve May, BS ’90, PhD ’98, who is the Chief Technology Officer at Pixar Animation Studios, and Laurie Kirsch, BS ’76, who is the Senior Associate Dean and Professor of Business Administration at the University of Pittsburgh.

Thanks to the generous donations of our alumni, faculty, staff and friends of the department, we were able to formally endow both the B. Chandrasekaran and Sandra Mamrak Graduate Student Scholarship and the Mike Liu Graduate Student Scholarship Fund in Computer Science and Engineering. We continue to appreciate your ongoing support of the department and investment in the future of our students. We certainly depend on your support.

Please keep in touch with the department. We would like to share your stories and accomplishments with the CSE Buckeye community.

Xiaodong Zhang
Chair and Robert M. Critchfield Professor
Computer Science and Engineering

The 15th Annual Awards Banquet

The Annual Awards Banquet will be on May 27th this year, starting at 5:30 pm in the Ohio State Faculty Club. We will be presenting scholarships and the annual awards for Outstanding Research, Service and Teaching.

This year, we will also honor the tenth anniversary of the Eleanor Quinlan Memorial Graduate Teaching Scholarship. Many of you remember Elley as either or both a student and the Academic Program Assistant. When Elley passed away in 2001, a fund was created to honor her and recognize excellence in teaching by a graduate student.

You are invited to join us in this event, meeting the current students, faculty and staff. Registration begins at 5:30 and dinner will be served at 6:00 pm. Please visit the CSE website for registration details.
Behind the Scenes: Maintaining CSE’s Computing Environment

The role of the Computing Services group in the Department of Computer Science and Engineering is providing students, faculty, and staff innovative, instructional and research support. The department supports its own email, Usenet, and web services maintaining our proud tradition of being one of the first departments at Ohio State to have an Internet presence.

Computing Services has a mission to support the innovative research conducted by the department. Systems administration support is provided for multiple research servers and desktops ensuring that researchers can concentrate on the business of research and not on general systems maintenance, including the difficult task of maintaining compliance with university security policies.

Among the many other things Computing Services does, they also maintain a dual Windows and UNIX environment with up to date Windows systems deployed on all desktops. Remote access allows students to work outside of the lab without having to compete for general university lab space.

The group manages computing facilities in four buildings that includes 160 seats for open lab use, a computing lab open for all CSE majors 24 hours a day and two data centers. Remote access allows students to work outside of the lab without having to compete for general university lab space.

CSE provides a unique instructional experience to the future leaders in our field. Modern development tools are available in all operating system environments. A special graphics lab provides high-end equipment for graphics related course work. Virtualization is employed to provide self-contained enterprise-like environments for capstone courses.

CSE core computing facilities reside in two data centers. The main data center houses most of the production and research equipment. All systems are connected through a state of the art high-speed network with Gigabit connections to each desktop. Half of the data center space is dedicated to research systems, which includes multiple Infiniband research clusters and smaller standalone research servers and clients. A smaller computer room is housed in a separate building for disaster recovery and redundant services.

The CSE Computer Committee is responsible for setting computing policy and planning. The IT management team and representatives from the student community sit on the committee with faculty to ensure all perspectives are represented. The close working relationship the group has with faculty and students is the key to its success. Supporting a complex academic environment can be difficult at times, but the reward comes with being able to help our talented faculty, researchers and students succeed.
Steve May
Chief Technology Officer, Pixar
Animation Studios

Steve May began his tenure at Pixar Animation Studios in July 1998 as the shading and modeling technical director on Toy Story 2, working on the characters of Wheezy and Buster. For Pixar’s next film, Monsters, Inc., May worked as the simulation and effects sequence supervisor and helped pioneer the fur technology and overall look for the character Sullivan. May then went on to work on the Academy Award®-winning feature Finding Nemo, as the computer graphics supervisor for the shark characters and Sydney Harbor environment. May served as the effects supervisor on Golden Globe®-winner, Cars, overseeing all of the film’s visual effects. His next role was as the supervising technical director for Disney•Pixar’s Academy Award®-winning feature film Up. In 2010, May was promoted to Chief Technology Officer at Pixar, where he oversees the development of visual effects tools and processes for the entire studio. He received his BS from Ohio State in 1990 and his PhD in 1998.

Please tell us what you have done after you left Ohio State, and what your biggest achievements are in these years?

Well, I’ve only worked one place! After finishing my doctorate, I taught one additional quarter at Ohio State and was lucky enough to immediately get a job as a Technical Director at Pixar. I moved to the San Francisco Bay Area and started at Pixar in July 1998. I am currently VP, Chief Technology Officer (CTO).

My greatest satisfaction has been working on a number of great feature films that I loved making and that my kids love watching too. It’s great to have a job where your work can be shared with your family and friends all over the world. I worked as a technical director or supervising technical director on Toy Story 2, Monsters Inc., Finding Nemo, Cars and, most recently, Up. All of our films have been critical and box office successes. I attended the Academy Awards when both Finding Nemo and Up won the Oscar for Best Animated Feature. That was fun. Just working at Pixar is a great achievement. I feel lucky everyday to come into work here. It’s a wonderful, creative work environment and the people that work here are legends in animation and computer graphics. Occasionally, famous actors or celebrities can be seen at Pixar. But to me, the biggest “stars” are the people that work here because they are famous in computer animation.

One of the first projects that I worked on was developing the fur technology used for Monsters, Inc. We had never animated fur before. Sullivan (the main character) ended up having over 2 million hairs. Animating and rendering those hairs for a feature film was quite a challenge and it took nearly 2 years to develop. The system we developed then has been used for hair, fur, and even vegetation in every film we’ve produced since. One of my favorite memories of this work was developing the animation technique necessary so that Sullivan could have snowflakes in his fur and doing the special effects for the shots with the snow in the film.

What are the biggest changes you have observed in the computer graphics since you left Ohio State?

I would say that one of the biggest changes is the ubiquitousness of real-time rendering on graphics processors. GPUs were exotic and expensive when I was in school and today, more powerful GPUs can be found on your smartphone. In computer animation, the landscape has changed dramatically. When I started at Pixar, we used almost entirely proprietary software for doing animation and many of our animators had to know how to program to use it. Externally available software simply didn’t exist elsewhere because we were inventing the medium. Now there are many commercially available software packages for doing different aspects of animation. They are relatively inexpensive and don’t require programming for most tasks. That said, because the medium is still advancing, there is an ongoing need for research into new techniques.

Can you also tell us challenges you are facing in the field?

The computer animation industry has matured and the competition is stronger than ever. One sign that it has matured is that we don’t even really say “computer animation” that much anymore. It’s just “animation.” As the technology has advanced and become more accessible, more studios are now able to produce high quality animation. And more emphasis can be placed by the studios on filmmaking and story development instead of on the technology. The result is the competition keeps getting tougher and tougher.

We’ve made 11 animated feature films, but they are still difficult and expensive to make. There is a lot of technology underneath those frames of animation. As a studio, our biggest challenge is continuing to advance the state of the art in animation and computer graphics while making the animation process easier for our artists and maintaining our focus on great storytelling.

What advice would you give to a high school student who wants to major in computer science and to a graduate student who is interested in computer graphics and animation?

There are many great reasons to be a computer science major. The most obvious is that technology only continues to become a bigger and bigger part of our everyday world and is doing so at an accelerating pace. The thing I like about computer graphics and animation is that it allows me to combine my loves for art and science. There aren’t that many jobs that mix those disciplines to the level we do. The world often tries to separate art and science. In animation, we definitely like smashing them together. So, for a computer science major interested in animation, I tell them to take more art and for an art student interested in animation, I tell them to take more math and science. In either case, it’s most important to get a solid foundation in the principles and theories of these different disciplines and that is best done at a high quality university (such as Ohio State!).
Laurie Kirsch
Senior Associate Dean & Professor of Business Administration, University of Pittsburgh

Laurie J. Kirsch, Senior Associate Dean and Professor of Business Administration, joined the faculty of the Katz Graduate School of Business at the University of Pittsburgh in 1993 after completing her PhD in business administration at the University of Minnesota. Her research explores the exercise of control and the transfer of knowledge in the IS context, examining how stakeholders can better manage IS initiatives and improve software processes. She received her BS from Ohio State in 1976.

Please tell us what you have done after you left Ohio State, and what your biggest achievements are in these years?

My first job after graduating was with Deere & Company in Illinois, where I was a systems programmer. I was part of a team that supported various operating systems components of IBM mainframes. It was an exciting time because computing in organizations was growing and the technology itself was evolving very quickly. I vividly remember when Deere began its study and eventual use of relational databases and the impact of that change in technology for corporate users.

In that setting, I discovered the importance of understanding business and the language of business and completed an MA in business administration at the University of Iowa. Many of my biggest professional achievements came after joining the faculty of the Katz Graduate School of Business. Seeing my students graduate and become successful professionals and academics is very rewarding. I've been fortunate to have a successful research career, publishing papers in leading academic journals, serving on editorial boards, and assuming various leadership roles in my field. On a personal level, my greatest achievement is my family. My husband and I adopted two children, from El Salvador and Guatemala. My sons are now 21 and 16, and, along with my husband, a constant source of pride and happiness.

What are your research interests?

I have focused my research on identifying both formal and informal ways to align goals of cross-disciplinary project teams whose members have different agendas, priorities, and expertise. My recent research, funded by the National Science Foundation, has focused on the management of cyber-infrastructure (CI) projects, including the Global Environment for Network Innovations (GENI). CI projects are very large, complex, multi-party information systems composed of information and communication technologies. GENI was funded for the development of a virtual laboratory for at-scale networking experimentation. The goal is to create a cyber-infrastructure that will enable practitioners and academics to run experiments and tests to create innovations for the enhancement of the Internet. Since 2007, hundreds of computer scientists, network engineers, industry experts, government agencies, and other academics from around the world have participated, shaping the outcomes and the vision over time.

Can you also tell us challenges you are facing in the field?

It's interesting to me that old problems continue to resurface. For example, successfully implementing technology means that technical experts and non-technical users must learn to communicate effectively, but bridging the gap is very difficult. I started my career in a technical role, and then moved into teaching about technology in business. As Senior Associate Dean, I need data and systems to be an effective manager. There's no silver bullet for bridging the communication gap; it takes a concerted and constant effort.

As an educator, how do you think the computing education should evolve to better meet the needs of its students?

How students learn is changing, and education needs to keep up. Many college students today are accustomed to a fast-paced world with powerful computers, mobile phones packed with apps, Internet at their fingertips, video gaming, and social media. We need to find better ways to use computing to enhance learning, not only for students who have had easy access to computing technologies, but also for those who have not.

As a woman in computing, how do we encourage more diversity in the computing fields?

Diversity is so important for a healthy and advancing field. To help draw more women or underrepresented groups into the field, it is important to identify role models and successful professionals who can demonstrate what is possible. Widespread communication about jobs, careers and opportunities is also helpful for educating both women and men about the field. Having mentors can really be helpful for navigating the challenges and pitfalls that arise. I had many mentors over the years and I owe a huge debt of gratitude to them. It's also critically important to network. Building a network doesn't just happen; it takes time and energy. A good network will prove invaluable over time, in both expected and unanticipated ways.
Cao, Ozsu Named IEEE Fellows

The Institute of Electrical and Electronics Engineers named two CSE alumni the rank of IEEE Fellow. Tamer Ozsu, PhD ’83, and Guohong Cao, PhD ’99, were both named IEEE Fellows for 2011.

The IEEE Fellows program is a distinctive honor awarded to researchers who have “unusual distinction in the profession and shall be conferred by the Board of Directors upon a person with an extraordinary record of accomplishments in any of the IEEE fields of interest.”

Ozsu received the rank of IEEE Fellow for his contributions to distributed data management multimedia database systems. Ozsu is a professor and university research chair at the University of Waterloo in Waterloo, Ontario, Canada. He is a Fellow of the ACM and a current ACM Distinguished Lecturer. Ozsu is the recipient of 2006 ACM SIGMOD Contributions Award and received the 2008 Distinguished Engineering Alumnus Award from OSU. He is a co-author of Principles of Distributed Database Systems, currently in its third edition.

Cao was named an IEEE Fellow for his contributions to algorithm and protocol design for mobile ad hoc and sensor networks. He is a professor of computer science and engineering at Pennsylvania State University and director of the Mobile Computing and Networking Lab. He has published more than 150 papers in the areas of wireless sensor networks, wireless network security, vehicular ad hoc networks, data access and dissemination and distributed fault tolerant computing. He has served on the editorial board of IEEE Transactions on Mobile Computing, Wireless Communications and Vehicular Technology.

Rebecca Fiebrink, BS ’04, accepted a position as assistant professor of computer science and an associated faculty in music at Princeton University beginning July 2011. Rebecca is currently completing her PhD studies at Princeton where she received a National Science Foundation Graduate Research Fellowship and an Upton Fellowship in Engineering.

Jerry Canterbury, BS ’04, was promoted to associate partner within IBM.

Lt. Col. Christopher Bohn, PhD ’04, was appointed as the Chief of the Test and Technology Division at Air Force Special Operations Command. The Test & Technology Division is responsible for providing oversight of all traditional and non-traditional test activities in the command. They are also responsible for identifying technologies that potentially could address the AFSC’s near-, mid- and far-term capability gaps. When relevant technologies are mature enough, they initiate and manage demonstrations and experiments to further refine the technology and to assess its military utility, with an eye toward transitioning the technology into a capability on one of their current weapon systems.

Matt Desch, BS ’80, was featured in the New York Times Job Market section on February 26, 2011 in a piece entitled From Software to Satellites. The story depicts Matt’s journey from CIS graduate to CEO of Iridium Communications.

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Alumni: We Want to Hear From You!

WIN A PAIR OF OSU FOOTBALL TICKETS!

Do you have an update to include in the next alumni newsletter? Do you have any suggestions for topics you would like to see covered? Do you have any photos from your college days or today that we can include? We want to hear from you! Email us your updates, photographs and suggestions to Carrie Stein at alumni@cse.ohio-state.edu or mail them in the attached envelope. We will enter your name in a drawing for a pair of football tickets to a home game for the 2011 season. Winners will be notified this summer and announced in our autumn newsletter.
Alums Receive National Science Foundation Award

The National Science Foundation awarded CSE alums Susan Hohenberger Waters, BS ’00 and Hongwei Zhang, PhD ’06, Faculty Early Career Development Awards. The CAREER program is among the NSF’s most prestigious awards and supports junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education and the integration of education and research within the context of the mission of their organizations.

Waters is an assistant professor of computer science at Johns Hopkins University. Susan’s award, Practical Cryptography for the Cloud, will support the development of cryptographic schemes for the cloud environment, including methods to protect the privacy and integrity of data for the growing number of consumers who utilize cloud services.

After receiving her BS from Ohio State, Susan went on to receive her PhD in Computer Science from MIT. Prior to joining Johns Hopkins, she was a post-doctoral researcher at IBM Research in Zurich, Switzerland. She has also been recognized with a Google Faculty Research Award and a Microsoft Research New Faculty Fellowship.

Hongwei Zhang is an assistant professor of computer science at Wayne State University. His CAREER award, Taming Uncertainties in Reliable, Real-Time Messaging for Wireless Networked Sensing and Control, aims to address the challenges that closed-loop, real-time sensing and control pose to embedded wireless networking.

Besides this CAREER award, the NSF GENI program and Ford Research support Hongwei’s work. His publications have been selected as the Spotlight Paper of the IEEE Transactions on Mobile Computing and the Best Paper Candidate of IEEE ICNP in 2010. His teaching has been recognized by the Excellence in Teaching Award from Wayne State University.

Xiaoning Ding, PhD ’10, has been named as a Computing Innovation Fellow by the Computing Research Association in 2010. A CIFellowship is supported by the National Science Foundation in one or two years. He is currently working in the Intel Lab in Pittsburgh with Phil Gibbons, a principle research scientist on system software research for multicore processors. Xiaoning received his CSE PhD in the summer of 2010 and was advised by Professor Xiaodong Zhang.

Alumni By The Numbers

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Buckeye Blog

Spring 2011
There’s an old saying that goes: “A picture is worth a thousand words.” With new computer technology, “our goal is to make a picture worth a whole lot more, probably several million times more,” Associate Professor Han-Wei Shen said.

Many people wonder what visualization is. We’re more familiar with the application of computer graphics in entertainment because of movies like Toy Story 3 and video games.

“The visualization research that Shen is doing, however, is more closely related to scientific and engineering applications. Visualization is a process of converting numerical data to images using computer graphics techniques, with a focus on data understanding and knowledge discovery,” Shen said.

He started his research in 1990, where he worked on his master’s degree at the State University of New York at Stony Brook with Professor Arie Kaufman. At that time he was trying to visualize 3D MRI data with a computer graphics technique called volume rendering.

“It took me 20 minutes to generate a single image. Now you can generate at least 20 images per second for the same size of data,” Shen said. After getting his master’s degree, he went on to receive his PhD from the Scientific Computing and Imaging (SCI) Institute at the University of Utah, working with Professor Chris Johnson analyzing and visualizing data generated from finite element simulations for defibrillation device design. Upon completing his PhD, he spent three years at NASA Ames Research Center as a research scientist.

Since coming to Ohio State in 1999, Shen has worked with his students to tackle various problems. “Visualization is at an intersection of many computer science and applied mathematics subareas,” he said.

Shen and his students in the Graphics and Visualization Study (GRAVITY) research group are developing effective methods for representing information with pictures and animation. Specifically, his goal is to be able to effectively visualize one exabyte (100,000,000,000,000,000 bytes) in the next 5-10 years. To achieve this, students need to understand algorithms, data compression, geometry, data mining, data management, rendering, statistics and high-performance computing.

To maximize the impact of their research, they have devoted a lot of their effort to create software that can be readily adopted by the community. For example, he and his students contributed to a visualization software package, called VAPOR, made by the National Center for Atmospheric Research (NCAR), for ocean, atmosphere and solar researchers. VAPOR is a desktop level software solution that has advanced interactive 3D visualization and quantitative data analysis capabilities. An important component in VAPOR is its ability to visualize time-varying, three-dimensional, fluid flow data. VAPOR adopted the flow visualization library, called OSUFlow, which was created by Shen and his students. This project was supported in part by a National Science Foundation Information Technology Research award, CAREER award and Early Career Principal Investigator Award from the Department of Energy (DOE).

When Shen was on sabbatical at Argonne National Laboratory, he extended the OSUFlow library to run on an IBM Blue Gene /P supercomputer that has 140 thousand...
processors. Shen said the most challenging issue for his future research is “data. The amount of data will be enormous.” He indicated that the Department of Energy is currently undergoing a project to build exascale computing machines, machines with billion-way concurrency. It is expected that by 2018, the first machine that can deliver 1 exaflop (10^18 floating point operations per second) computation power will be in commission.

With the new capability, it’s possible for scientists to remove the long-term barriers in energy technologies and employ nanotechnology, biotechnology and materials sciences. Simulations that run in these types of machines will generate so much data that it is unimaginable from today’s point of view and it’s likely that the memory and I/O bandwidth won’t be able to keep pace with the machine speed.

Recently, Shen won two very competitive DOE research awards because he tackled some of the exascale data visualization problems. He was investigating effective data reduction and feature extraction schemes using information theory and graph modeling.

Shen is also heavily involved in the DOE’s Scientific Discovery through Advanced Scientific Computing (SciDAC) program. This is a major initiative with a goal to bring together the nation’s top researchers to tackle the most challenging scientific problems, including climate, fusion energy, life sciences, ground water, materials and chemistry. Shen’s research group is part of the DOE SciDAC Institute for Ultra-scale Visualization, where he helps in developing high performance parallel visualization software that can run on machines with hundreds of thousands of processors.

With the emergence of new social media, a large amount of data is being generated every day that has a different nature from what we’ve seen before. For example, the messages posted on Twitter are limited to less than 140 words, and a tremendous number are being generated every minute. To sift through such immense amounts of data and extract useful information, visualization provides a unique ability that can harness a human’s visual and cognitive ability by presenting data in a graphical format. Shen is currently working with AT&T researchers to design better graphical representations that can track dynamic “tweets” more effectively. “Digital information will become much more accessible to the general public with the aid of visualization,” he said.

"During my graduate studies, it took me 20 minutes to generate a single image. Now you can generate at least 20 images per second for the same size of data."

Above: Visualization of the energy field generated from a computational fluid dynamics simulation for the downtown area of New Orleans at 2:30pm, December 14th, 1998. The simulation was to model the wind field when the Bright Field freighter with 56,000 tons of corn crashed into the Riverwalk Mall in New Orleans. The purpose of the simulation was to assess the potential damage to the public safety of New Orleans in case that the freighter carries dangerous airborne substance like chlorine gas. The dataset was generated by Drs. Koomullil and Soni at University of Alabama at Birmingham.
CSE Professor Named Editor-in-Chief of Neural Networks

Professor Leon Wang has been named the Co-Editor-in-Chief of Elsevier’s Neural Networks, an archival journal of three of the world’s oldest neural modeling societies and “is the first scientific journal dedicated to the then-emerging field of neural networks,” according to Wang. He represents the International Neural Network Society.

“My vision is to maintain and enhance Neural Networks as a premier journal of the interdisciplinary field of neural networks. The field is now firmly established, and neural network techniques are widely used in research and practice not only in CSE but also in neuroscience, cognitive science, and engineering,” Wang said.

As a prolific author, he believes that the principles of editing and maintaining a good journal are simple. “All an author wants is quality and prompt review and fair decision-making on the basis of substantial rationale.” He wants to examine the entire review process of a manuscript and identify ways to increase the quality and decrease review delay. He said he intends to reply to every author inquiry promptly. If a journal does these simple things, he thinks it will be a place where people want their articles published.

“Another thing I intend to do is broaden the journal’s scope to include papers on exciting new topics, such as brain-computer interface and deep neural networks, via mechanisms such as special issues and invited topical reviews,” Wang said. Being a computer scientist, he is ready to take advantage of the vast online resources available at Elsevier to assist his editing.

Being the Editor-in-Chief was not always his goal, however. “Although I believe in participation in and service to professional communities, I was already busy with research, teaching, and departmental and professional services. So when I was first nominated for this position, I immediately said no,” Wang said. But as he looked further into the journal and after much “arm-twisting,” he decided that “this role is important to the field and there are improvements to the journal that I would like to oversee.”

Wang received his BS and MS degrees from Peking University in Beijing. He then went on to receive a PhD in computer science from the University of Southern California. His research interests include machine perception and neurodynamics. In 2008, he won the Helmholtz Award from the International Neural Network Society. He is also an IEEE Fellow and an IEEE Distinguished Lecturer (2010-2012).

Best Paper Awards

CSE Students Xin Huo, Vignesh Ravi, Wenjing Ma, and Professor Gagan Agrawal won the Best Paper Award at the 17th International IEEE Conference on High Performance Computing (HiPC) in December 2010 in Goa, India. The paper is entitled “Approaches for Parallelizing Reductions on Modern GPUs.” The project breaks down the systematic mechanisms for porting applications with specific types of communication patterns on modern GPUs. The paper also discusses a hybrid approach, where a group of threads use atomic operations to update one copy of the reduction object. The group has published another research paper, about irregular reductions, that is currently a finalist for the Best Paper Award at the 25th International Conference on Supercomputing in May.

Dr. Jeremy Morris and Associate Professor Eric Fosler-Lussier received a 2010 IEEE Signal Processing Society Best Paper Award for their paper, “Conditional Random Fields for Integrating Local Discriminative Classifiers,” published in the IEEE Transactions on Audio, Speech, and Language Processing. It explores the use of the Conditional Random Field (CRF) paradigm in an Automatic Speech Recognition (ASR) system. CRFs are a statistical framework that allows for combination of correlated sources of evidence in a time sequence; it examines how this framework can be used to incorporate short-term estimates of sounds in determining what was said in a speech utterance. The award will be presented in May 2011 in a ceremony at the International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2011) in Prague, Czech Republic.

Karthik Sankaranarayanan and Professor Jim Davis received a Best Paper Award at the 6th International Symposium on Visual Computing (ISVC) 2010, for their paper, “Attention-based Target Localization using Multiple Instance Learning.” It explores the use of Multiple Instance Learning (MIL) to perform target localization from image sequences. The basis of this approach uses a softmax logistic regression MIL algorithm that automatically learns the model of a target that persists across input frames. This approach can allow commercial grade surveillance cameras to automatically localize targets in various scenes. The award was sponsored by Mitsubishi Electric Research Labs (MERL).
DK Panda was named a top author in Computer Science by Microsoft. In October and December, he gave two keynote talks in China. The first at the HPC Advisory Council entitled Design of Collectives and One-Sided Operations in MPI and Their Impact on Application-level Performance and Scalability and the second at ICPADS 2010 entitled Networking Technologies for Clusters: Where do We Stand and What Lies Ahead? He currently serves as the Vice Chair of HiPC 2011 and CCGrid 2012 conferences. Additionally, he received research funding from both IBM and AVETEC.

Sayantan Sur, along with DK Panda, received a 2011 IBM Open Collaborative Faculty Award. This award is in recognition of their achievement and support for open collaborative research. This is a highly competitive and prestigious award that recognizes the quality of their program and its importance to the industry.

Hakan Ferhatosmanoglu is currently serving on the Editorial Board of the Distributed and Parallel Databases Journal.

Gagan Agrawal gave a keynote presentation at the Parallel Data Mining Workshop in Mesa, Arizona entitled Data Intensive Computing: From Clouds to GPGPUs.

Xiaodong Zhang, Chair and Robert M. Critchfield Professor of CSE received the Overseas Contribution Award from the China Computer Federation in the 2010 China Computer Congress held in October. This annual award is given to a computer scientist outside China, who has made significant impact to the computing field and outstanding contributions to computing research and education in China. Xiaodong Zhang has been a visiting chaired professor in Tsinghua University, and served on the advisory board at the Institute of Computing Technology in the Chinese Academy of Sciences.

Ness Shroff and Dong Xuan received a grant from the National Science Foundation for their networking work entitled Mobile Content Sharing Networks: Theory to Implementation.

Jim Davis received the IEEE Computer Vision and Pattern Recognition Reviewer Award.

The National Science Foundation has awarded Raghu Machiraju and Han-Wei Shen a grant for their work in Large Data Visualization using an Interactive Machine Learning Framework. In addition, Raghu received a National Library of Medicine grant entitled A Comprehensive Workflow for Robust Characterization of Microstructure for Cancer Studies.

Anish Arora received a grant from the Air Force Research Laboratory as part of the Center for Automatic Target Recognition Research.

Prasun Sinha is serving as the program co-chair for the International Workshop on Quality of Service 2011 to be held in San Jose, California.

Eric Fosler-Lussier was re-elected to the Speech and Language Technical Committee of the IEEE Signal Processing Society for 2011-2013. He was also named an Associate Editor of the ACM Transactions on Speech and Language Processing.

Paul Sivilotti was selected to attend the National Academy of Engineering’s Frontiers of Engineering Education symposium. The symposium is designed to provide young educators with opportunities to share ideas, learn from research and best practices in education and leave with a charter to bring about improvements in their home institution. He was selected because of his innovative educational approach to teaching.
Student News

Students Develop “Touch” Tool for Children with Autism

Senior students aimed to create software prototypes utilizing touch screen technology in order to enhance the teaching and learning experiences for children with autism. Adam Nerderman, Steve Nosan, Steven Rudy and Taylor Mackinder, as a part of a comprehensive, collaborative senior capstone project, worked on it. For CSE758, the students, supervised by Tom Bihari, worked with graduate students Aaron Ganci and Bruno Ribeiro in the Department of Interior, Industrial, Product and Visual Communications Design to create an application that would allow autistic children to practice “touch,” as well as social and communication skills.

Autistic children may have difficulty with communication, social interaction, and issues with utilizing basic motor skills to perform repetitive, restrictive movements. The application that’s being developed will allow caregivers to interact with the child, reducing the anxiety resulting from learning these skills. The idea for this project is aimed to integrate “touch,” which provides us with cues from our environment that teach us about our surroundings and ourselves. The use of touch technology will allow this method of cooperative learning for autistic children to create multifaceted, meaningful learning experiences that cannot be facilitated with more traditional technologies.

Nerderman, Nosan, Rudy and Mackinder created the language model for the application, which has a static database of stories in a Microsoft Access database. The stories can then be pulled using Windows Presentation Foundation. The static stories contain questions about a pictorial scene, utilizing animation to teach. The application is still being developed, but initial testing demonstrates its potential to be a new innovative learning tool for the benefit of autistic children.

Poster On Hearing Aid Enhancement Wins At Poster Exhibit

The 5th Annual CSE Graduate Research Poster Exhibition in March 2011 included 36 posters from graduate students across the department. The poster exhibit gives senior level graduate and PhD students a chance to share what they have been working on during their time at Ohio State. John Woodruff was chosen as the winner for his poster presenting the topic of directionality-based speech enhancement for hearing aids. The runners-up included: Zhezhe Chen, who presented FlowChecker: detecting bugs in MPI libraries via message, and Jonathan Eisenmann, who presented the topic of evolving gestural controllers for cartoon animation.

Three judges selected the finalists and winner. Professors Xiaodong Zhang, Department Chair, Gagan Agrawal, Graduate Studies Chair, and Tamal Dey, Graduate Admissions Chair. The three finalists’ posters are on display on the third floor of Dreese Labs.

Department Sponsors 4th Annual Ohio Celebration of Women in Computing

The CSE department was proud to be among the sponsors for the 4th Ohio Celebration of Women in Computing (OCWiC). OSU’s ACM-W chapter even obtained a grant to rent a van so that all 20 women could attend the event at the Mohican Resort and Conference Center near Loudonville, Ohio.

OCWiC is a regional conference modeled after the international Grace Hopper Celebration of Women in Computing. OCWiC provides the opportunity for women to network with other female students and industry leaders within the IT field. Events at the conference included technical and career-oriented talks, faculty and student research presentations, career panels, and Q&A sessions. The goal of the conference was to educate and encourage technical women to complete their studies in computing by exposing them to graduate school, career opportunities and by supporting peer and professional relationships.

CSE students Sheetal Ghadse, Amrita Ghosh, Amanda Kauppila, Jing Li, and Preethi Raghavan displayed posters this year. Raghavan’s poster won first place in the graduate student division, and she won a trip to next year’s Grace Hopper event in Oregon. Senior Lecturer Bettina Bair moderated the student technical presentations. Thanks to the generous sponsorships of universities like Ohio State and major corporations such as Microsoft, General Electric and Eaton, all students could attend the event free of charge.
In July 2010, undergraduate student Ben Gilbert released “SeizeTheDay,” a free, reminder-based task manager for the iPhone, with his partner, Ian Kono. The app was featured as “App of the Week” by Time.com’s “Techland” and was also on the CNET.com homepage. It was featured as “New and Noteworthy” on the front page of Apple’s App Store at launch. They have seen over 150,000 downloads of the app to date. It includes Apple’s iAd network.

Gilbert and Kono met as roommates in the summer of 2009 while interning for Cisco in San Jose, CA. They founded Functional Delights, LLC together about a month before they parted ways, Gilbert back to Ohio State and Kono back to UCLA to finish up their undergraduate degrees. They worked on the app throughout the school year, and released just after Apple launched iOS 4. At the time of launch, Gilbert was interning at ExactTarget, a digital marketing company based out of Indianapolis, London and San Francisco. He currently works part-time from Columbus for CoTweet, ExactTarget’s recently-acquired social media software group. Gilbert will be interning with Microsoft in Redmond, WA this summer, and graduating after autumn quarter 2011.

Gilbert says he and Kono are currently developing version 2.0 of the app. They have brought on a top-notch designer and an innovative set of new features to make SeizeTheDay “the task management app for people who love beautiful things.” The company is shooting for a spring release date, and is extremely excited for things to come. Feel free to check out Gilbert and Kono’s work at http://www.SeizeTheDayApp.com.

Gilbert has become exceptionally active across the university. He served on the Executive Board for Alpha Epsilon Pi for two years, and currently serves as the CIO for Undergraduate Student Government. He is an active member of NEWPATH, a NSF-funded initiative in the CSE department to promote entrepreneurship and is a part of the leadership team for OSU’s Business Builders Club.
Development Matters

Faculty-Named Scholarships Endowed

The CSE department is extremely honored to announce that the B. Chandrasekaran and Sandra Mamrak Graduate Student Scholarship and the Mike Liu Graduate Student Scholarship Fund in Computer Science and Engineering have been officially endowed.

The department sincerely thanks Chandra and Sandy for their generous donation to the scholarship. They have again proven their dedication to the department and to our students with this gift. In addition, we thank our alumni, students, faculty, staff and friends of the department for their contributions to both of these scholarship funds. This has been a wonderful way to celebrate the careers of our colleagues, mentors and friends and to reaffirm our commitment to our students.

Scholarships will be given to outstanding graduate students based on academic merit and research achievement at this year’s banquet in May.

Capstone Design Courses Give Students Real World Experience

Over the past 12 years, the department’s Capstone program has provided real-world experience for more than two thousand undergraduate students in more than five hundred projects and has provided invaluable extension-like services to the community as well.

These projects include a web-based bookmarking service, a video-capture component for a stadium infotainment system, an iPhone application for center-to-center Twitter extractor, an Internet-connected wireless irrigation system, a sonar-based treadmill controller and a process management suite.

Over half of our Capstone projects have been with external sponsors from industry, government, non-profit organizations and individual entrepreneurs, as well as with other departments and research groups within OSU. These projects have provided our students with the invaluable experience of working with real customers in close-to-real settings that have resulted in improved portfolios and better job offers. They also make the quality of our students visible and enhance the quality of our education.

We receive a lot of feedback from former students and project sponsors. Many students rank the Capstone experience as their most valuable undergraduate course and most applicable to success in their current careers. Sponsors continue to be impressed with the quality of work and project outcomes, even going on to hire the students working on their projects.

Capstone projects have directly contributed to commercial successes. For example, JackThreads.com started as a project and was recently acquired by Thrillist.com. Several industry and governmental organizations have gone on from a Capstone project to research and commercialization collaborations with faculty in our department, and through CETI, our NSF Industry-University Collaborative Research Center. Most recently, we have worked with Grange Insurance on early fraud detection in insurance claims and with Astute Technologies on parallelizing intelligence mining from blogs and other social media sites.

The department’s Capstone Design Course Endowment Fund enables us to host a high-quality showcase of projects to industry, alumni and friends of the department and provide prizes and awards to students, and purchase specialized hardware and software for specific projects. The showcase also provides a platform for students to connect with potential employers and alumni.

The Capstone Program is looking for project sponsors and donors for the Capstone Design Course Endowment Fund. Sponsors and donors will be gratefully acknowledged during the showcase, as well as in the CSE newsletter and departmental websites. To contribute to the fund, please contact Carrie Stein at cstein@cse.ohio-state.edu. To sponsor a project, contact Rajiv Ramnath at rarnath@cse.ohio-state.edu.
Many Thanks to Our Alumni and Friends!

We appreciate the following alumni, faculty, staff and friends who directed their Ohio State gifts to the Computer Science and Engineering Department. Listed below are our benefactors over the past 6 months. These donations are making a difference. Private support can help us to attract outstanding students and promising young faculty. We have used gift dollars to improve research and teaching labs, as well.

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You may direct your CSE giving to specific uses or specific research online:  
www.cse.ohio-state.edu/giving

or by mail with the attached envelope:  
OSU Department of Computer Science and Engineering,  
395 Dreese Labs., Columbus OH 43210

For more information about various means of giving, contact: Xiaodong Zhang, Professor and Chair at (614) 292-2770 or zhang@cse.ohio-state.edu.
Congratulations to CSE Autumn and Winter Quarter Graduates!

The Department wishes you the best of luck in your future endeavors.

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<th>Bachelor's CSE</th>
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