CSE

LINKS

[FACULTY RESEARCH]

DRIVING OUR FUTURE

CSE-LED TEAM AWARDED $1.2 MILLION FOR DRIVERLESS CAR RESEARCH

Industry is racing to bring self-driving cars to the masses. Despite much progress, questions remain regarding safety, efficiency, environmental impact and other issues.

To study these matters, the National Science Foundation awarded a CSE-led team a $1.2 million grant to create a multifaceted research facility for self-driving and connect-ed cars. UB is contributing $500,000 towards the project.

Led by **Chunming Qiao**, professor and chair of CSE, the effort includes fellow School of Engineering and Applied Sciences (SEAS) researchers, as well as researchers from Carnegie Mellon University, Cisco Systems

[NEWS]

CSE awarded $2.9M to create advanced materials data research lab

There are libraries of data on the properties of metals, polymers and other materials. But they contain a fraction of the information needed to discover or design new materials.

Govindaraju

Setlur

Part of this obstacle is that these databases lack the ability to collect and interpret visual data – such as graphs – from scientific studies and other publications. This slows the materials discovery process and limits our ability to advance technologies that address national security, climate change and other pressing matters.

A multidisciplinary UB team including CSE's **Venu Govindaraju** and **Ranga Setlur** has received a $2.9 million grant from the National Science Foundation's (NSF) Data Infrastructure Building Blocks (DIBBs) program to change that.

[STUDENT RESEARCH]

CSE undergrad developing app for early autism detection

IT WILL HELP PARENTS DETERMINE IF THEIR CHILD NEEDS TO SEE A DOCTOR

An app under development by CSE undergrad **Kun Woo Cho** could help detect autism spectrum disorder (ASD) in children as young as 2 years old.

The app tracks eye movements of a child looking at pictures of social scenes – for example, those with multiple people. The eye movements of

someone with ASD often differ from those of a person without autism.

In a study that Cho presented at the IEEE Wireless Health conference at the National Institutes of Health in October, the app had an accuracy rating of nearly 94 percent.

"Right now it is a prototype. We have to consider if other neurological conditions are included, like ADD, how that will affect the outcome," said Cho,

The purple blotches show where a child looks. The smartphone indicates no autism spectrum disorder. **Kun Woo Cho** (right) and her advisor, **Wenyao Xu**.

A Message from the Department Chair

Dear CSE alumni and friends,

Excitement is building as CSE moves closer to its 50th year anniversary bash, scheduled from Sept. 28 through Oct. 1, 2017.

There was tremendous excitement at Davis Hall on Nov. 4, when CSE hosted back-to-back events. We started with an Industrial Career Day, in which local business leaders provided students insight into what it's like to transition into workforce. We followed that with an alumni event that brought together more students, faculty, staff, alumni and other leaders from the university community and Western New York.

Meanwhile, we continue to hear from old friends, such as Tom Meyers, who graduated from the department in 1979 and continues to work in the field while living in the Dominican Republic.

Thanks to the support of our generous alumni and friends, I am happy to report that CSE is stronger than ever. Student enrollment, faculty numbers and research dollars continue to grow. For example, CSE's Venu Govindaraju and colleagues recently received a $2.9 million NSF grant to build a one-of-a-kind advanced materials data research lab. That's in addition to the $2.7 million grant CSE's Oliver Kennedy and partners recently received from the same NSF program.

Meanwhile, our students continue to further CSE's reputation for excellence at cybersecurity competitions and hackathons, and by promoting STEM to youngsters.
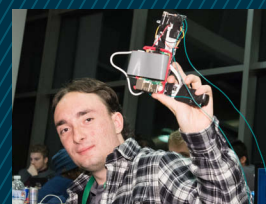
In conclusion, 2016 was a milestone year for CSE. But 2017 is going to be even better! See you soon.

Yours,

Chunming Qiao, PhD, IEEE Fellow
Professor and Chair
You can contact Dr. Qiao at **qiao@buffalo.edu**

THE FUN VERSION OF THE "ALL-NIGHTER"

Pulling an "all-nighter" is seldom a cherished memory of college.

That's starting to change as students from UB and neighboring universities compete in Hackathons, marathon coding sessions typically lasting 24 to 72 hours, in which teams of students collaborate to create software projects.

UB has been hosting an annual Hackathon for a few years. The latest happened Nov. 4-6 in Davis Hall. Here's a look at some of the 360 students who registered for the event.

[FROM **DRIVERLESS** PAGE 1]

and Southwest Research Institute.

"Traditionally, driving simulators and road testing facilities have operated independently of each other" said Qiao. "We are bridging that gap and creating a space where academia, information technology companies, automakers and other industries can evaluate and validate their products."

The heart of the facility will be a research platform dubbed iCAVE2 (short for Instrument for Connected and Autonomous Vehicle Evaluation and Experimentation). The platform will sync UB's existing driving, traffic and wireless networking simulators to a connected vehicle, as well as road sensors, wireless access points and other equipment to be installed along North Campus roads.

"The grant builds upon the University at Buffalo's robust and interdisciplinary research enterprise that works to make traffic systems smarter, safer and more sustainable," said **Liesl Folks**, dean of SEAS.

[FROM **MATERIALS** PAGE 1]

The team is creating the Materials Data Engineering Laboratory at UB (MaDE @UB), which will use artificial intelligence and other tools to transform the role of a database as a repository for information into an automated computer lab that collects, interprets and learns from massive datasets.

"This pioneering approach to advanced materials research will give the scientific community the tools it needs to accelerate the pace of discovery, leading to greater economic security and a wide range of societal benefits," said Govindaraju, the grant's principal investigator and UB's vice president for research and economic development.

It follows a $2.7 million grant – also from NSF's DIBBs program – awarded recently to CSE's **Oliver Kennedy** and researchers at New York University and the Illinois Institute of Technology.

The team is developing software to streamline curation and quality control for data (big and small), and enable users to make sense of this data without computer science expertise.

[FROM **AUTISM** PAGE 1]

who studies under CSE assistant professor **Wenyao Xu**.

Cho will expand the research by testing the app on at least 300 children. If successful, the app could improve early diagnosis of autism by giving parents a quick, inexpensive and reliable way to determine if their child needs to see a doctor for ASD.

Also involved in the work are researchers from UB's Jacobs School of Medicine and Biomedical Sciences, Women & Children's Hospital of Buffalo, and SUNY Buffalo State College.

$12 million

HUMBLE BRAG

For the 2016 calendar year, CSE has received more than $12 million in new funding!

Cybersleuths strut their stuff at RIT

CSE STUDENTS WIN 2ND PLACE AT CYBERSECURITY CONTEST

UB students won second place in the national Collegiate Pentesting Competition, a cybersecurity challenge held Nov. 4-6 at the Rochester Institute of Technology.

The team included CSE students **Tanmay Bhagwat**, **Nick Brase** and **James Droste**, as well as three UB School of Management students.

Each team member received a trophy and $500 prize. The squad was also recognized for the second consecutive year for being the most professional team in the competition, with each team member receiving a Raspberry Pi Zero.

"This competition is experiential learning at its finest," says **David Murray**, clinical associate professor of management science and systems, who served as the team's faculty coach. "The students put their technical, business and communication skills to the test with a realistic scenario, and have the chance to learn from industry experts."

[EVENTS]

CSE hosts Industrial Career Day

For years, the Buffalo Niagara region suffered from "brain-drain" – the loss of well-educated individuals to other cities for better pay or conditions.

Thankfully, that phenomenon is starting to subside – thanks in part to efforts such as CSE Industrial Career Day, an event that introduces hundreds of students to local businesses.

This year's event, held Nov. 4, included presentations from **Dan Magnuszewski**, chief technology officer at ACV Auctions; **Paul Buckley**, CEO and president of Applied Sciences Group; **Bob Scott**, software engineering manager, and **David Hughes**, senior systems engineer, both Northrop Grumman; **Michelle Plesh**, site leader, and **Gary Pochron**, software engineering manager, both Liazon; **Scott Falbo**, manager of web and mobile development, and **Mike Grimaldi**, director of enterprise architecture, both at BlueCross BlueShield of WNY.

Those five companies – as well as Stark & Wayne, STUDIO llc, and Bloomberg – also hosted table exhibits.
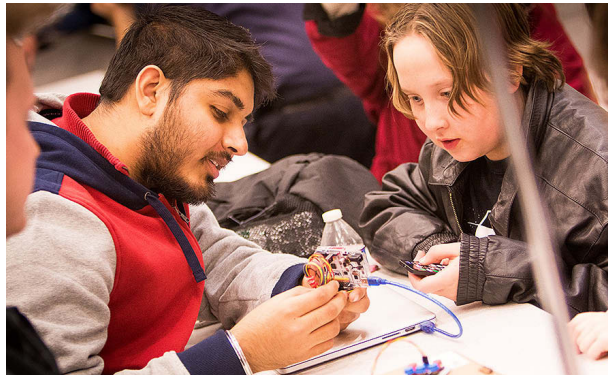
[COMMUNITY]

Budding computer engineers fill Davis Hall

Davis Hall was the place to be Dec. 5, when nearly 600 people gathered for a night of fun and games designed to get K-12 students excited about computer science.

The Second Annual Computer Science Education Week Kid's Day was organized by CSE students.

Popular attractions included a Minecraft-style UB map in which kids could defeat ghosts, and a challenge where children programmed robots by drawing "code" on paper. Other demos included a voice-controlled drone that looked like a parrot, an electronic version of the board game Connect 4, and a 3-D printer demo.

"My main motivation to get involved with CS Ed Week was due to my participation as an onlooker last year. I really enjoyed looking at some of the demos and interacting with kids and parents," said **Devashish Agarwal**, a member of the CSE Student Advisory Board and coordinator of this year's demos.

Other event organizers included students **Adhish Chugh**, **Harshita Girase**, **Heeba Kariapper** and **Wenxuan Shi**, and CSE faculty and co-directors of undergraduate education for the department, **Carl Alphonce** and **Atri Rudra**.

[EVENTS]

CSE DEPARTMENTAL DEMO DAY

More than 200 people, including students, faculty, staff, alumni and partners, came together for CSE's Departmental Demo Day at Davis Hall on Dec. 9.

Student groups from several CSE capstone classes presented the culmination of three months of work.

The winning project was a gesture-based button control that allows Android users to associate gestures with buttons (volume control, power on/off, etc.) on a smartphone. Members of the group are: **Farha Huma**, **Abhinav Sharma**, **Abhinav Chaturvedi**, **Naved Merchant Archana Krishnan**.

[CONNECTIONS]

Alumni meet with soon-to-be graduating students

Ask a graduating student what's on their mind and chances are they'll mention job searching.

This explains why CSE – after its Industrial Career Day on the afternoon of Nov. 4 – hosted an event that night at Davis Hall to bring together alumni with hundreds of students graduating this spring.

The event, which is part of CSE's continued efforts to ensure its students make industry connections before leaving UB, included student demos and posters. The following students received awards for their work.

1st prize – **Matthew C. Stafford**

2nd prize – **Luigi Di Tacchio** and **MD SQ Zulkar Nine**

3rd prize – **Vishrawas Gopalakrishnan** and **Nikhil Londhe**

"On behalf of CSE, I want to thank everyone who came to Davis Hall and made the night so memorable," said **Chunming Qiao**, CSE chair and professor.

[DEPARTMENT NEWS]

A BUSY DAY AT DAVIS HALL

Presentations from local business leaders. Student demos. Alumni gathering.

It all happened Nov. 4 at Davis Hall, when CSE brought together faculty, staff, students, alumni, business leaders and others in a whirlwind of a day. Here's a few snapshots from the day.

CSE IS CELEBRATING ITS 50th ANNIVERSARY!

CSE 50
1967-2017

[**SEPT. 28 – OCT. 1, 2017**]

We are planning events that will highlight
50 years of excellence at CSE, and we want you join us. For more info visit:

cse.buffalo.edu/50

[IN MEMORIAM]

1925 – 2016
Erich Bloch

A UB alumnus (BS '52) who helped launch the era of modern computing during three decades at IBM, and who later served as director of the National Science Foundation in the 1980s, died Nov. 25 in Washington from complications from Alzheimer's disease. He was 91.
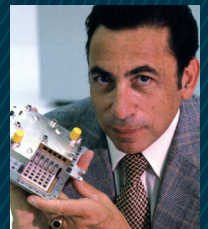
It was often said that IBM in the 1960s "bet the company" on Bloch, his colleagues and the System/360 project, which cost twice the company's annual revenue. It became the "most successful computer system of all time," according to the Computer History Museum.

Greetings from the Caribbean!

Upon receiving CSE's holiday card, **Tom Meyers** ('79), a computer science alumnus living in the Dominican Republic, sent us a note:

"I applied my CS education every day of my working life! I still use it in my retired life as I continue to design and implement systems for myself and others. My thanks to CSE for making my life so good and so interesting. CSE affects the lives of their graduates and the clients they will serve for many years."

Thank you Tom. It's wonderful to hear from you and we sincerely hope to see you this fall for CSE's 50th anniversary celebration!

Feel free to send news, photos, videos, awards, achievements and other related content to:
mks@buffalo.edu