Department of Computer Science & Engineering
Open House Presentations

FRIDAY, APRIL 22nd

Continuously Running – All exhibits are located in the Paul G. Allen Center (CSE) unless noted otherwise.

BEYOND POINT & CLICK: Making Computing & Graphical Images Accessible to the Blind – CSE 303
See the voice synthesis software, Braille notetaking devices, and Braille displays (“electronic Braille paper”) that help blind people utilize computers. This demo will include a glimpse of the latest UW research on Braille publication of textbook diagrams and graphs.

STUDENT PROJECT SHOWCASE – Gates Commons Conference Room, 6th floor
You could be working on exciting capstone design projects like these in four years. These videos feature our undergraduate majors showcasing their team projects in areas such as animation, robotics, and embedded systems.

ADA BYRON LOVELACE: TO DREAM TOMORROW – CSE 674 (Irish Room)
Lovelace lived in the 1800s, but she was some hundred years ahead of her time in recognizing the vast potential of computing. Through diaries and letters, this movie reveals her visionary collaboration with leading scientists and mathematicians of her day.

COMPUTER SCIENCE IN THE REAL WORLD – Poster Presentations outside Gates Commons, 6th floor
Think computer science is just about programming? Think again. These posters feature recent graduates from our program who are out in the real world applying their computer science expertise in a wide variety of careers, everything from computational biology to law.

HEROINES OF COMPUTING: Women in Computing from the 1800’s to the Present Day – Poster Presentation
What do the first computer programmer (born in 1815), the author of the first computer science textbook, the inventor of the compiler, and the inventor of computerized phone switching have in common? They were all women. Will you—or someone you know—be the next heroine of computing?

Scheduled Events

9:00-1:00 HOW IT ALL WORKS: Puzzles and Games – 2nd-4th Floor Breakout Areas, near stairwell
How do computers store numbers and text? How do computers and fax machines transmit images? What are all the parts inside a computer, and what do they do? The answers are surprisingly simple, and even fun, with these puzzles, activities, and demonstrations. This activity is appropriate for early elementary students and above.

10:00-2:00 MAKE IT GLOW! – 5th Floor Breakout Area, near stairwell
Ever wonder how electrical circuits work? Learn about the principles of electrical circuits by building one yourself. You’ll hook up a battery, a resistor, and an LED to make the LED glow. The organizers will explain what “LED” stands for, what a resistor does, and what voltage is.

10:00-1:00 LEGO MINSTORM ROBOTS – CSE 203
Have you ever seen a robot built out of Legos? Come visit ours to see how a little creativity combined with basic programming concepts can create a robot that moves and reacts to its environment.

10:00-2:00 TABLETS IN THE CLASSROOM: Teaching and Learning with Pen-Based Computers and Wireless Networking – CSE 305
In the classroom of the future, we will all have clipboard-sized computers that we can write on with electronic pens, and computers will help teachers recognize when their students are confused or falling behind in class.

10:00-2:00 CAN A ROBOTIC ARM READ MINDS? – CSE 206
See a robotic, prosthetic arm that learns how to respond to muscle signals in the forearm. This technology could enable people with disabilities to control assistive devices more naturally and directly. Undergraduate student Beau Crawford will demonstrate his exciting research.
11:00-12:00  **MODELING HUMAN FACIAL EXPRESSIONS IN 3-D – CSE 503**  
UW’s cutting-edge computer animation software starts with a short video clip of a person making faces and produces a realistic 3-D model that you can manipulate to show a wide range of emotions, even with new facial expressions that weren't made in the original video clip! See video samples of the results and meet CSE graduate student Noah Snavely who is working on this project.

11:00-12:00  **ONLINE LEARNING ENVIRONMENTS LAB – Sieg Hall, ROOM 322**  
The OLE lab supports research in the design and testing of web-based educational software systems. Demonstrations will be given of visual programming with the Data Factory and image processing with PixelMath.

11:00-2:00  **COMPUTING IN DEVELOPING COMMUNITIES– CSE 403**  
See how research with mobile telephones (CAM) is helping cooperative financial groups in rural India manage their money and connect with additional sources of funding (formal banks) in urban areas. These women lead co-ops provide funds for new community projects such as starting a small business, purchasing livestock, or expanding educational opportunities for kids. Undergraduate Paul Javid and graduate Tapan Parikh will demonstrate and let you try CAM.

12:00-2:30  **KNOWITALL – CSE 002 (basement)**  
Sure, Google is cool if you're looking for a web page, but it can't *read* the pages it finds for you. What if you want *information* from the entire world wide web about a particular topic? KnowItAll will try to *understand* the many web pages it finds about your topic of choice and give you the information it finds in one place. CSE undergrad Michael Lindmark will show you the first step towards a computer system that uses the web to automatically discover and learn that Shrek is a movie, Warsaw is the capitol of Poland and Steve Ballmer is the CEO of Microsoft.

12:00-2:00  **COULD YOU TEACH A COMPUTER HOW TO PAINT? – CSE 006 (basement)**  
CSE undergraduates Cy Khormae and David Jones demonstrate a course project (CSE 457) that can take a photo and transform it to look like a painting by Monet—and a lot more.

12:00-3:00  **COMPUTERIZED MICROBIOLOGY LAB ASSISTANT – CSE 405**  
UW computer scientists have teamed up with microbiologists to develop the lab bench of the future. CSE graduate student, Jiwon Kim, will demonstrate a computer system that assists microbiologists with experiment procedure and automatically records the experiment steps by watching the lab scientist at work.

12:00-3:00  **STUDENT CIRCUITS: Digital Systems Design Projects Showcase – CSE 003 (basement)**  
Computer science isn’t just about programming, it’s about creating new computing devices, too! Stop by to see a sampling of digital devices our students have produced in recent project courses.

- **The Tilt-o-meter** – a stepper motor project from Bruce Hemingway’s CSE 466 class. As you tilt the motor, the control software attempts to keep the sensor level.

- **Video Drawing** - Carl Ebeling’s 567 students built video effects devices to run in real time. One student produced a charcoal-renderer which operates in real time to convert video to a picture with drawing characteristics.

- **Physical Modeling Synthesis** - Bruce Hemingway's 467 class implemented a digital audio synthesis technique which calculates a physical model of a guitar string. You can trigger sounds in real time.

12:00-2:00  **CENTIBOTS – CSE 491**  
See the Centibot mapping robots in action! Within a building, these robots can efficiently determine their location, navigate, and create maps – all without human assistance! Professor Dieter Fox and his students will describe the technology and software behind the intelligence of these robots.

1:00-2:00  **RECORDING BODY MOVEMENT: 3-D Motion Capture – CSE 014 (basement)**  
See how computers can precisely track and record how humans and animals move using multiple cameras and special software. “Mo-cap” is the secret behind realistic movements by computer-generated characters in your favorite movies: Titanic, Star Wars, Shrek, and The Lord of the Rings (Gollum). Try having your movements recorded in this interactive demo with graduate students Mira Dontcheva and Keith Grochow!

1:30-2:30  **ANIMATION LAB TOURS – Sieg Hall, rooms 329 & 332**  
Instructor Barbara Mones and undergraduates in the year-long animation course sequence will open up their lab to visitors. See the work in progress on this year’s animation short.