

Spring 2012

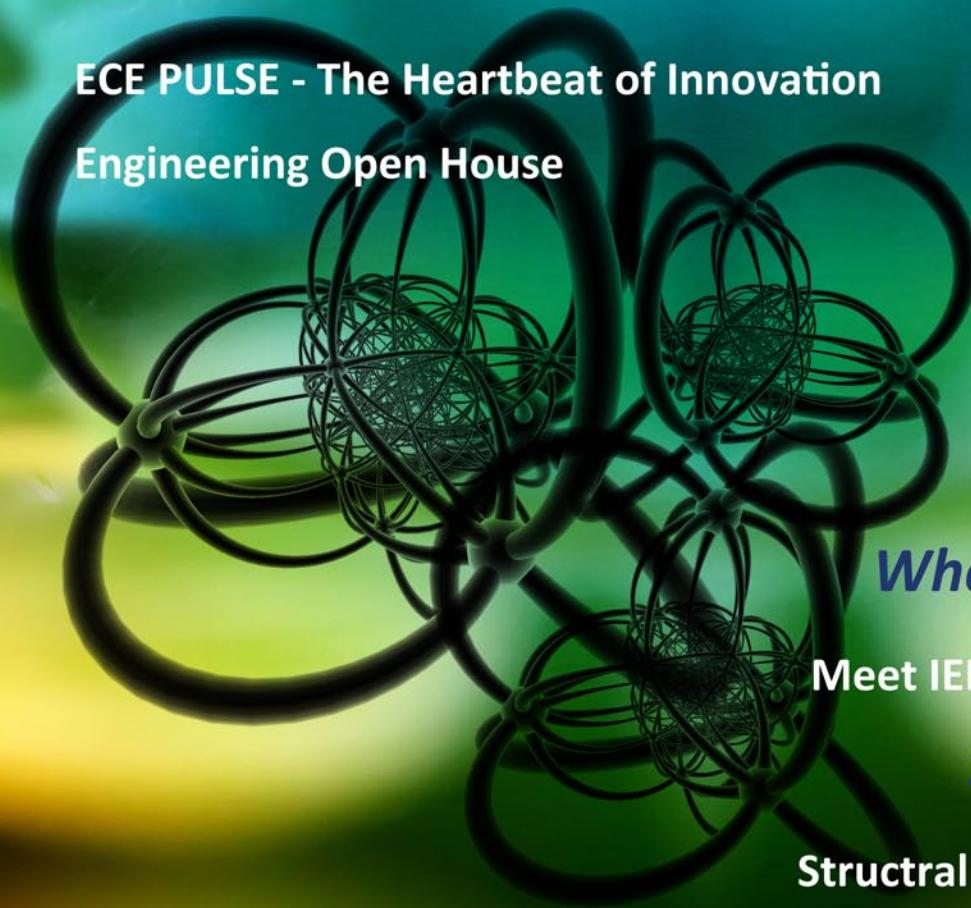
SPARK

UIUC IEEE Magazine

What's New!

ECE PULSE - The Heartbeat of Innovation

Engineering Open House



What's In This Issue:

Meet IEEE President and Dean

Society Spotlight

Structural Engineers Association



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Spring 2012



2 Interview with President and CEO of IEEE:

Dr. Gordon Day

6 Society Spotlight SEA

9 Interview with PURE mentees

JunYoung Gawk, Zhongnan Du

13 ECE PULSE

The Heartbeat of Innovation

20 EOH - Engineering Open House!

WEable Wireless Vibrating Bracelet - WECE

Whack a mole - Yangyang Yu

Audio Engineering Society

26 Interview with a Dean

Ivan Favila

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Interview with President and CEO of IEEE - Dr. Gordon Day



Dr. Gordon Day was invited to give a speech at the Fourth Annual S-PAC (Student Professional Awareness Conference) on October 22nd, titled, "Creating a World That Never Before Existed." After the speech, Dr. Day kindly agreed to have an interview with SPARK.

Professional Biography

Dr. Gordon Day received his B.S., M.S., and Ph.D. degrees in Electrical Engineering from the University of Illinois. For 33 years he conducted and managed research at the National Institute of Standards and Technology, participating in some of the Institute's best known programs in optoelectronics: optical fiber communications, optical fiber sensors, laser radiometry, and a determination of the speed of light that led eventually to a redefinition of the meter.

(Source: <http://www.gwday.net/biography>)

More recently, he has served as science adviser to Sen. Jay Rockefeller and Director of Government Relations for the Optoelectronics Industry Development Association. He has been a Professor Adjoint at the University of Colorado, a Professor Adjunct at the Colorado School of Mines, a Visiting Fellow at the University of Southampton (UK), and a Visiting Scholar at the University of Sydney (Australia), and has served on many industry, government, and academic advisory groups.

In 2012, Gordon Day will serve as the 50th President of the IEEE.

What advice would you give for those who are still in the university pursuing an Engineering degree?

Make yourself indispensable. The fact is that no one is really unique, indispensable or irreplaceable but you should try to make yourself important.



From your past experience of working with engineers, what has been the biggest weakness in engineers now? What would you hope we future engineers try to avoid or improve?

Most students from prestigious universities like the University of Illinois at Urbana-Champaign are invariably technically well-prepared and qualified engineers-to-be when they enter the professional world. Despite that, they really need to focus on acquiring or improving social and leadership skills. Be sure to remain assertive and confident, and remain broad-minded on our profession.

What advice would you give to women engineers?

When I was pursuing degrees at UIUC, I had women classmates in mathematics, in science, but none in my engineering class. Certainly things have changed a lot since I studied there. What I want to say is that our future depends upon the innovations. Countries do not innovate, companies do not innovate, universities do not innovate; people innovate. So ignoring a significant portion of our community fails to utilize all the resources.





How do you perceive Engineering in general?

I'd like to quote the words by Theodore von Kármán, who has made exceptional contributions to science and engineering from the first half of the 20th century. He claimed that "Scientists study the world as it is; engineers create the world that has never been".

What is your hope for future engineers?

The 21st century is your responsibility. What you should always bear in mind is that our world is not "flat," as Thomas Friedman suggests in his book *The World is Flat*. The world is spiky, says Sociologist Richard Florida. He took pictures of our globe from space, noting the intensity of spots of light and plotted them all on one map. What he showed us is a spiky graph and what he found out is that the more economically and technologically advanced a region is, the more intense the light turns out to be. But there are still many places where electricity is not accessible to people. I remember in Africa, people can even make profit by selling electricity to their neighbors. There are still a lot of undeveloped regions that have not been benefited by advanced technology. Engineers should strive to make the world flatter; bring light to the dark spots.

When talking about scientists, we instantly think about a lot of famous people, Newton, Einstein, Bardeen. etc. But when thinking about the latter half of the sentence, we see the big companies, Bell, Edison, GE, Intel. etc. We notice that engineering has improved our quality of life greatly. Henry Petroski, a professor at Duke University, stated that most quality-of-life improvements are actually accomplished without the advance in science fields. Engineering is the key to create a better and new world that never before existed. The importance of engineers should always be valued.



Spring 2012



You emphasized the importance of opportunity in your speech. What are some ways to put oneself in the way of great opportunities?

See every challenge as a hidden opportunity. The best opportunities come to you. What you need to do is to keep studying, keep asking, and stay patient. As I just said, as engineers in the 21st century, one of the largest opportunities we have is to make the world flatter, to bring medical services, clean water and electricity to the "dark" region in our world.

What is the importance of international experience in engineering?

A noticeable fact is that in IEEE, the world's largest professional organization dedicated to the advancement of technology, 50% of our members are from outside of the U.S. We also see that international collaborations have increased throughout the past few decades. Technologies are innovated globally and communicated globally. We must embrace diversity and strengthen our relationships worldwide.

In addition, international experience increases values for the job candidates, as well as for the corporations themselves.

How do you hope to leave marks on future engineers?

The three things I would like to see in my time as president is for the organization to grow stronger, more global, and more assertive.

For more information, visit Gordan Day's website, <http://www.gwday.net>.



Society Spotlight

SEA - Structural Engineers Association

The Structural Engineers Association (SEA) is an international organization dedicated to “advancing and advocating excellence in structural engineering.” The SEA provides opportunities professionally and socially for students in not only structural engineering, but department-wide as well. The University of Illinois’ chapter devotes itself to promoting a healthy interaction between peers, their professors, and their department to facilitate a stronger learning experience. Their primary goals for this year are to increase freshmen and sophomore professional awareness through membership, as well as creating outreach and graduate branches to expand awareness and connect better with all students on campus.



SEA officers



SEA on Quad Day

The Structural Engineers Association provides professional resources for students through interactive events set up by their Professional Events Committee. These events are designed to give students not only an opportunity to listen to advice and success stories from professionals, but to engage in conversations with them afterwards in a more personal one on one experience. Luncheons with professors are specifically kept small to give each attendant more time to meet and share stories in a relaxed, pressure-free environment while still gaining valuable insight into their future careers.



Fall Barcrawl

to measure and compare their deflections so as to demonstrate how stresses and tensions react to placement of the load. In addition to this display, the SEA is also collaborating with Engineering Council to feature smaller projects at Engineering Open House as well, with ideas like interactive Lego displays for children to work with.

The SEA also helps plan and host the Civil Engineering Career Fair, holds a number of resume critiquing workshops and mock interviews, and puts together job tours and job shadows. This year, they featured a tour with Clayco, the construction firm in charge of building the new residence hall in the Ikenberry Commons. Fourteen students were invited to the site where they were equipped with hardhats and brought through the buildings-to-be to get first-hand experience with structural engineering.

The SEA involves itself in a number of technical projects, the most popular of which is their bridge deflection model, “Lively Loads,” which will be featured again at Engineering Open House. The model consists of three boards with two junctions: an unmoving hinge at one and a roller at the other. Participants are asked to stand on parts of the board

The SEA provides countless opportunities for its members and interested affiliates to socialize and have fun. They start and end every year with a big event, and between then they provide paintballing, barcrawls, a bridge-building contest,



Despite the large advancements the SEA has made, the UIUC chapter was only established six years ago and every year its members try harder to push their influence further. Maria Warnock, Treasurer of the SEA, has high expectations for the potential of the organization. "We hope that in the future we'll be one of the predominant civil engineering student organizations and we hope to play a larger role in the success of our department."

sporting events, and soon a "Crane Bay Cinema" where movies will be played on a large projection screen in the middle of Newmark Laboratory's three-story, open area, research and testing floor.



Promoting Undergraduate Research in Engineering (PURE) has seen tremendous success since the program's inception in Spring 2008. The goal of PURE is to introduce research to underclassmen by pairing them with graduate students in ECE. This mentee/mentor relationship helps establish a solid foundation in which undergraduate students can explore their interests at an early stage in their academic careers.



PURE symposium

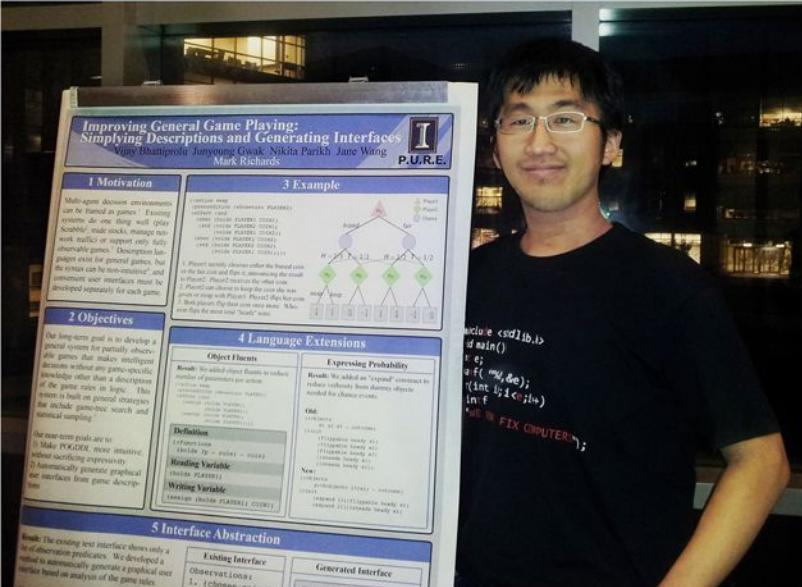
[Next >>](#)

[Interview with JunYoung Gwak and Zhongnan Du](#)

The program itself has grown rapidly in the past few semesters. Last year, PURE successfully expanded to the Computer Science department, in which many CS graduate students were willing to participate. During the past summer, PURE received \$10,000 in funding from Rockwell Collins in sponsorship of the many research projects.

Interview with pure Mentees

Now, let's meet two current PURE mentees: Zhongnan Du and JunYoung Gwak. They will tell you a little bit about their experience so far in the program and hopefully can inspire you to pursue a research project in a related field as theirs.



Through the P.U.R.E. program freshman CS student JunYoung Gawk was able to use his coding skills to develop and refine an AI generation system which he then applied to one of his own former projects.

When I decided to study computer science, I felt like I made a decision for all the future choices in my life. However, as I started studying further, I found that there are more important choices right in front of me. The field of computer science is so vast and all I have is some programming skills. I didn't even know if I wanted to have a job or study further in this field. Among all of my unease towards this unknown world, I wanted to explore my options and hopefully find that this is the world I could devote my life to.

Then, I found the PURE. While I was in the information session I was full of expectations that I, as only a freshman, might be able to participate in the research. Many graduate students came in to explain their projects and they were all new and interesting to me.

JunYoung Gawk

Here, I found a project that I truly found fascinating—a system that automatically generates AI when the rule of a game is given. I suddenly thought of an Othello AI I made a year ago and made up my mind to apply for this project. Luckily, out of hard competition, I was given this great chance.

There are a few objectives in this project. The first is to implement GUI in order to display how this system works.

We talked a lot about various protocols and wrote sample codes in various languages to compare the efficiency. I set up my server to collaborate our works on git and wrote a sample code using AJAX. It was the first time in my life that I had long discussions and worked to determine a platform to provide one service. Everyone was passionate and I came to understand what being involved in a team project meant.

The second objective is to gain a basic understanding of AI and understand how this system works. Not only did we work on writing programs, but we also learned about the theoretical part of this project. As I kept learning various theories about AI, I restarted my old Othello AI project and improved it, giving me a better understanding of what I was learning. With the knowledge I gained during this process, I learned more about his project, making me better able to contribute.

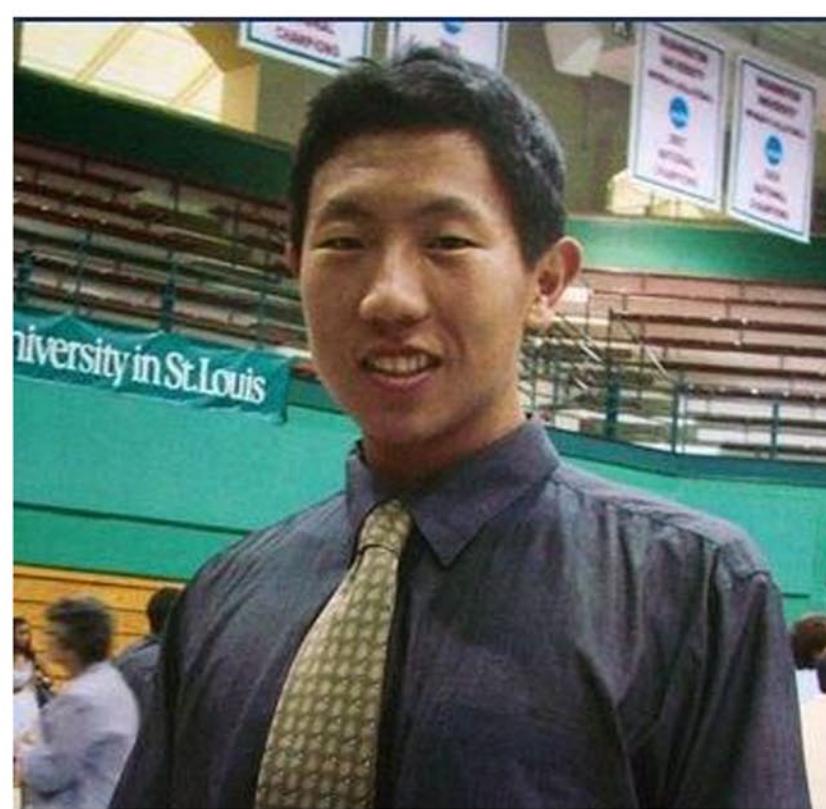
The third objective is to design and execute experiments to test the effectiveness of the system against a human player and two different versions of the system. With the GUI we implemented and the knowledge we gained, we will test the system in various ways. Last time when I wrote about the efficiency of merging two algorithms in object tracking, I was told that the test cases are not good enough to prove its efficiency. I am looking forward to learn how to design test cases to be accepted as reliable.

Zhongnan Du

Zhongnan Du recently had the opportunity to work with PhD student Joshua Hailpern on his suite of video annotation applications, VCode & VData. VCode & VData aim to provide a new, efficient and, easy-to-use set of tools that will be utilized by researchers in many disciplines.

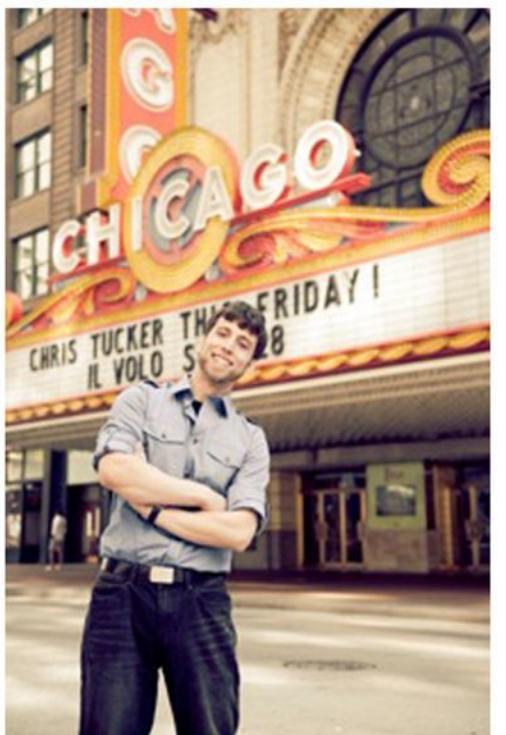
I started developing for Apple's mobile operating system this last summer, so that by the time I returned to campus I already knew my way around Objective-C and Xcode. I was searching for a project to get my hands on during the school year and wanted something that was both interesting and had immediate, real-world applications. P.U.R.E. helped me find what I was looking for by connecting me with my now mentor, Joshua Hailpern.

As a freshman, I had an invaluable experience of working in a team to achieve a goal and better understanding of AI and the research procedure. This experience gave me a better image of my potential future and a great motivation to continue studying computer science. I hope more students will apply for PURE to learn these great values as well. Also, I wish someday I can be a person who gives great experiences like the ones I have learned through this program to other people too.



Joshua has been involved in the project for some time and has been a very helpful and energetic source of guidance to me.

VCode and VData are a suite of open-source applications which create a set of effective interfaces supporting the video annotation workflow. Our system has three main components: VCode (annotation), VCode Admin Window (configuration) and VData (examination of data, coder agreement and training). The Design of VCode and VData was grounded in existing literature, interviews with experienced coders, and ongoing discussions with researchers in multiple disciplines. Our project largely solves the problems presented by frustrating traditional methods for annotations, of which three main limitations exist: “lack of support for the annotation workflow, poor representation of data on a timeline, and poor interaction techniques with video, data and annotations.”



Zhongnan Du's mentor

Features of our applications include Multi-Video Stream Support, Multi-Event Type, Code Agreement Support, Multiple Playback Modes, Timeline+ Secondary Data, Separate Admin Window+Templates, Coder Conflict Resolution Support.

I usually spend about 6 to 7 hours per week working on the project, although sometimes more if necessary. Initially I had some trouble finding my whereabouts in the code base, so I had to spend some time digging in and getting comfortable. Right now we are adding new features and trying to update the client to the Mac OS App Store. I hope there will be more downloads when it is released!

Naturally I have learned a lot since the start of the semester. I appreciate the opportunity that P.U.R.E has given me and really admire the program. The fact that UIUC undergraduate students are able to get hands-on experience with some fantastic mentors, even in their freshman or sophomore years, is simply awesome. At the same time, many mentees are getting their first real glimpses into their future fields of study.

PURE will hold another symposium at the end of the semester.

PURE Wiki Page:

wiki.engr.illinois.edu/display/PURE

Pulse: The Heartbeat of Innovation

IEEE, WECE, ECESAC and HKN, the student organizations of the ECE department, hosted their first annual technical conference this spring and it was a hit. Ten speakers and more than 200 students attended the conference, which consisted of several events over three days.



Pulse team



Black box contest award ceremony

The conference started with a preliminary technical “Blackbox” competition the week before the main events. The competition was divided into three separate competitions: analog, digital, and software. The winners of these competitions were announced at the networking dinner the following week. The dinner also featured a keynote speaker as well as the head of the ECE department’s inauguration speech. The following day featured a series of Tech Talks from eight big name companies and a social mixer to conclude the event.

[NEXT>>](#)

day I

opening speech networking dinner

The first night of the conference featured a guest speaker followed by a networking dinner. The guest speaker was Michael Callahan who attended the University of Illinois for both his undergraduate and graduate degrees. He invented a system known as “Audeo”, which converts neurological signals into speech or commands, and he is a winner of the first-ever Lemelson-Illinois Student Prize.

After the Director of ECE Pulse 2012, Ekta Shah, kick started the conference, Professor Andreas Cangellaris, the Department Head of ECE, gave an inauguration speech, followed by Callahan’s speech.



As both speakers pointed out, communication is the essential key to promote technological revolution, which will better the society we live in. During the casual networking dinner following the speech, students and campus recruiters were able to engage in very lively and beneficial discussions with the speakers and each other.





tech talks

Representatives of several firms attended ECE PULSE this year and presented various technical subjects relevant to their fields.

Infinera - Jon Rossi

Topic: Infinera Photonic Integration and Networking System



Infinera was originally founded in 2001 and has since been an innovator in optical networks through the design and manufacturing of photonic integrated circuits (PIC). Traditionally optical networks consist of a laser and modulator transmitting a signal that passes through numerous repeaters en route to its destination. This setup required an enormous amount of optical components in addition to significant overhead costs for electricity and maintenance.

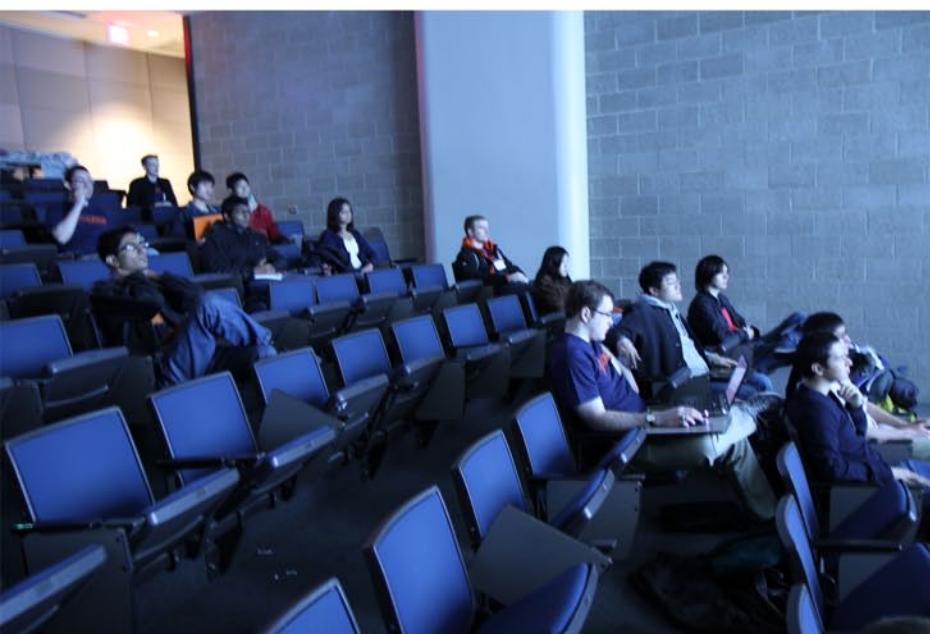


Through the development of the PIC, Infinera was able to combine over 60 of these optical components onto one chip, greatly improving efficiency. Each chipset is capable of providing 10 separate channels at 10 gbps. With 8 chipsets being installed in each module, Infinera is capable of providing its customers with 800 gbps of bandwidth with just one rack. Sr. Principal Hardware Engineer Jon Rossi predicts that “meeting bandwidth demand will not scale without disruptive technology, like photonic integration” and Infinera has certainly positioned itself to provide this technology.

Schlumberger - Jason Gardner

Topic: Electrical Engineering in Oilfield Technology

Schlumberger provides upstream engineering products that assist in the detection and drilling of oil and natural gas. The firm helps its clients find and characterize oil reservoirs, determining whether there is enough oil and whether it will flow economically enough to justify drilling. To accomplish this task Schlumberger uses some incredibly advanced technology. First, sound vibrations produced by trucks on the surface are used to locate potential wells.



A drill probe is then sent down to further analyze the well. The electronics needed to control the drill must be very durable and able to cope with high temperatures and vibrations. Schlumberger designs multichip modules consisting of silicon chips with gold etching that are able to withstand these conditions. Communication with the drill tip is also a challenge, as the torsion of the drill is too great to run any wire along its length. Instead, mud pulse telemetry is used. Vibrations are actually sent through the mud down the shaft to control the drill, achieving speeds of about 24 bits per second. The drill tip must also contain various other sensors, such as a gamma ray detector to distinguish between oil and clay (clay contains potassium ions which emit radiation detectable by the sensor). These and many others are some of the incredible technologies that Schlumberger designs.

tech talks

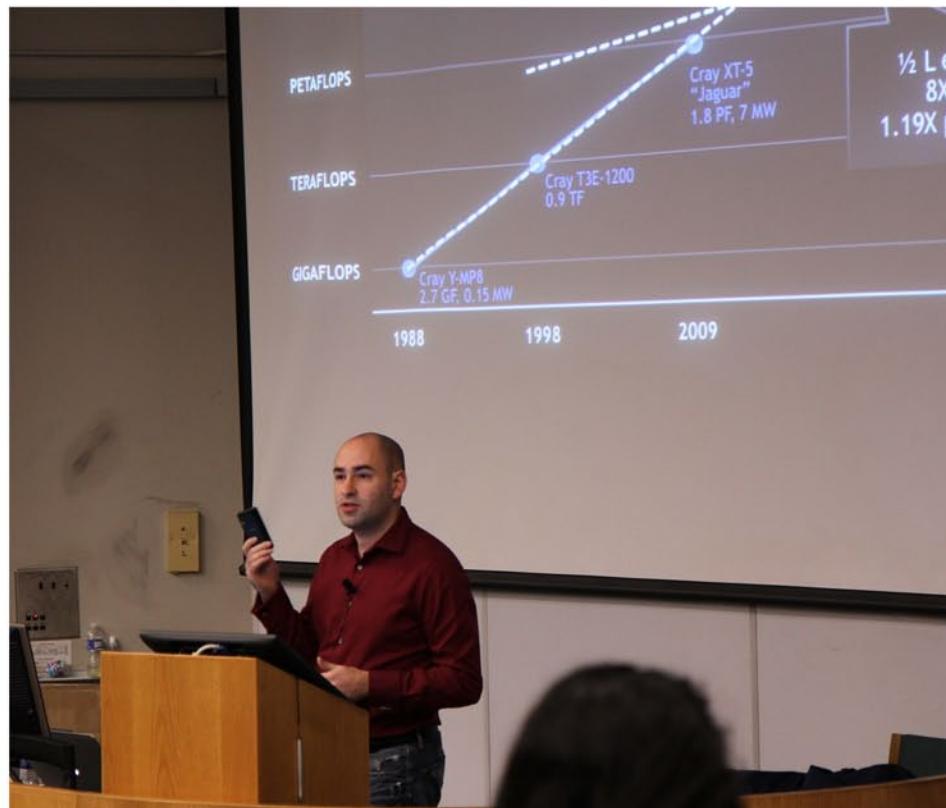
NVIDIA's GPU software director Chris Lamb spoke about the potential benefits and difficulties of integrating GPUs and CPUs. Traditionally, the integration of several hardware components occurs when one component has become "good enough" to continue to meet foreseeable demands that will be placed

NVIDIA - Chris Lamb

Topic: GPU Revolution

Simplifying the Future of Heterogeneous Computing

However, both CPUs and GPUs continue to grow in power and capability rapidly and thus neither has reached the leveling-off point where one could be integrated with the other. Demand for a multi-threaded, very parallel GPU continues to increase, but at the same time so does demand for a powerful, single-threaded CPU. An additional challenge to integration exists in the distribution of memory: CPUs require large, low-bandwidth memory,



while GPUs require small, high-bandwidth memory. Ultimately, integration would benefit software if designed in such a way that the program is homogeneous while its execution is heterogeneous. Scalable program models will need to be designed for parallelism, and NVIDIA hopes to achieve these ends with the release of new platforms such as the CARMA (CUDA on ARM) Development Kit.



Rich Salz outlined a variety of interesting projects that IBM is currently working on, including the SmarterPlanet initiative, the infamous computer Watson, capable of holding its own on Jeopardy!, and also his own continuing work on XML and SOAP.



IBM hopes to provide the technology and to be a vocal advocate for the implementation of such a network. IBM is also continuing to work on Watson. Watson is capable of answering queries posed in human language by accessing an open source knowledge database. A hypothesis is first generated which is further refined after filtering possible variations and finally applying a scoring algorithm to determine the best answer. IBM believes that Watson could possibly be modified to act as a medical diagnosis aide in the future.

IBM - Rich Salz

Topic: Watson, SmarterPlanet, workload optimized systems

The SmarterPlanet initiative aims to achieve economic growth, sustainable development, and overall societal progress through the integration and cooperation of all manner of electronic products and systems. An example of one such system would be the linking together of power grids, water plants, and traffic lights.

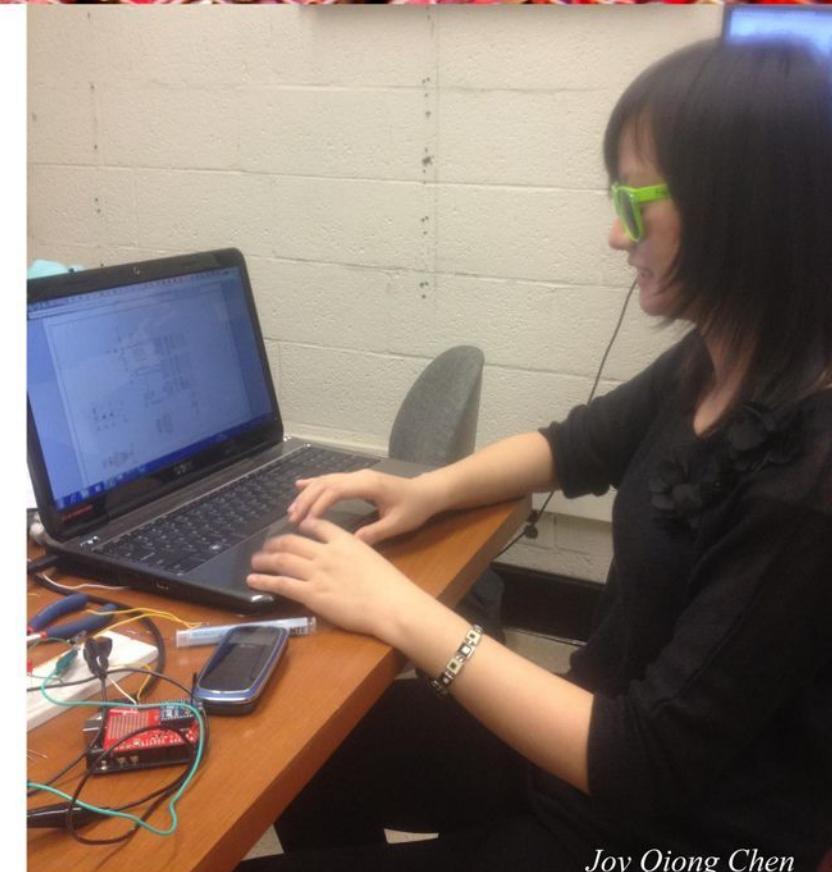


Also present at the conference were: **ARM, Caterpillar, Qualcomm, and NCSA.** Companies interested in participating in next year's ECE Pulse should contact corporate@pulse.ece.illinois.edu.

Joy Qiong Chen, a sophomore in ECE, is the academic director of the Women in Electrical and Computer Engineering, also known as WECE. Each year, WECE comes up with a new project to present at the Engineering Open House and this year they decided to seek out a design that would provide aid to the community.

Professor Brunet and a team of students went to local agencies and institutions to find a project that could serve the community. It was during this process that WECE came up with the idea for its EOH project: a WEable Wireless Vibrating Bracelet. This bracelet is designed for helping deaf people notice a doorbell or telephone ring. By wearing the bracelet, people are able to feel vibrations and see bright lights when the doorbell or telephone rings. The bracelet is able to wirelessly receive signals from the button of a doorbell and produce vibration from there. It consists of a vibrating motor and a wireless communication module.

After we came up with the idea, we sent out an email to people on the WECE mailing list to help, and around twelve students decided to work on this project with us.



Joy Qiong Chen

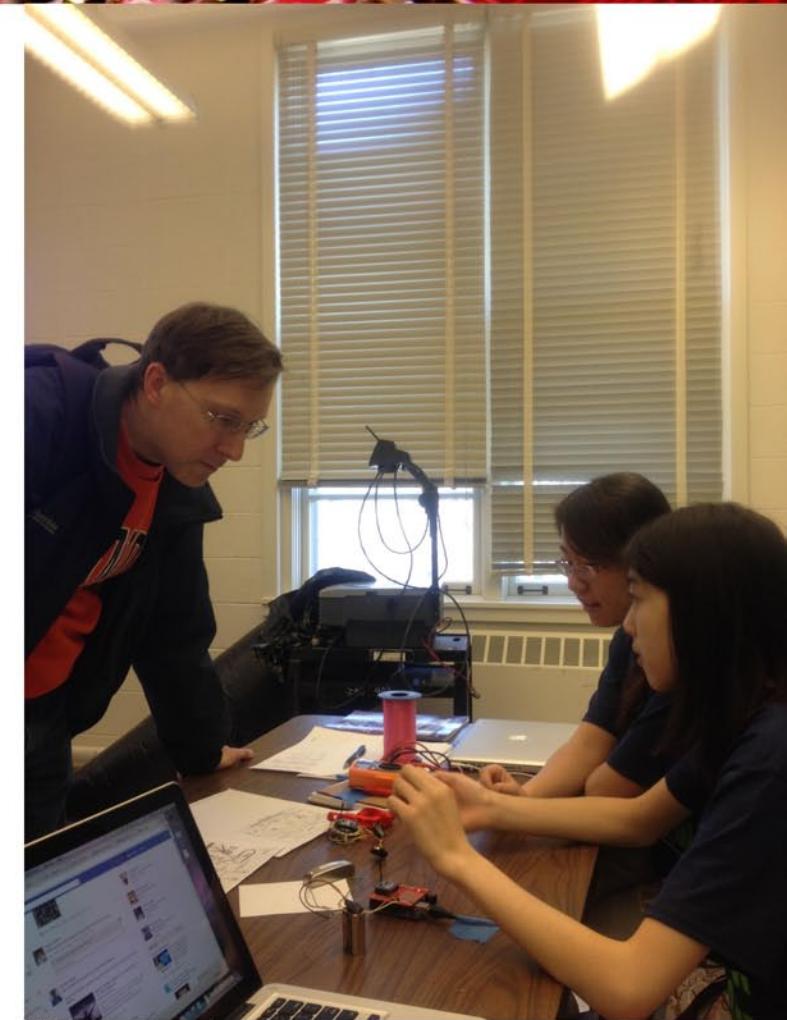
We came up with two different plans for the bracelet. The first plan was the digital model. For the microcontroller, we used an arduino board, the exact ones that the students in ECE 110 would be familiar with. We programmed the two arduinos to communicate via XBee radio modules. The wireless information is transferred by antenna so it was able to receive signals from the senders on the doorbells. After receiving these signals, the bracelet would vibrate. This is the design that we decided to use for our EOH display. The second plan was the analog model that was based on previous experience.

For this, we actually had to design the circuit, buy the parts, and solder them on. It used multiple simulation softwares, such as Mentor Graphics, to simulate our circuits on the computer and also used vibration as the output-motor. Of course, the analog bracelet was larger than the digital and the difficulty with this plan was that there were many small parts that we could not buy so if we continue with this design in the future, we will have to modify the circuits.



WECE members: Alysia Dong(L) & Le Wang(R)

In one month, the core team was able to design these circuits, make the plans, and train the newcomers. We all worked in a very friendly atmosphere, helping each other and making progress as a team.



EOH project show

Overall, EOH was a very good opportunity. It was exciting to interact with all sorts of people, especially prospective female students coming into ECE. In the future, we hope to be able to mass produce this bracelet, but right now we have to do improvements before that will be able to be possible.

*WECE's website:
wece.ec.uiuc.edu*



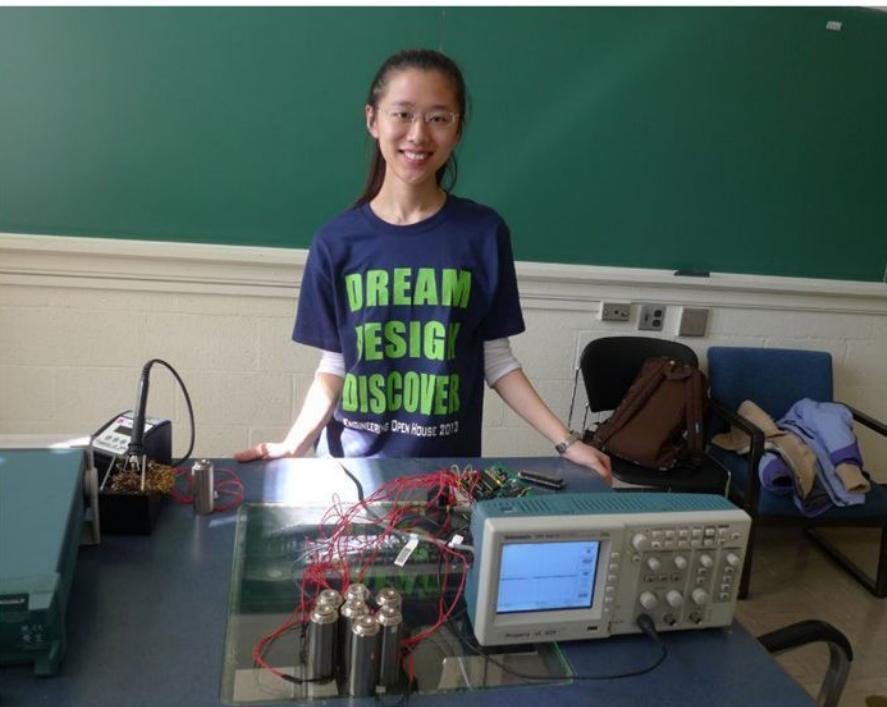
Whack-a-mole!

EOH Project
Yangyang Yu

Yangyang Yu, a freshman in ECE at the University of Illinois, designed and built a "Whack-a-mole" exhibit for this year's Engineering Open House. The exhibit features an interactive display of mole holes as well as a feedback scoring system through an oscilloscope.

I first started the project after hearing about the Seed projects at one of the IEEE's general meetings. I had enjoyed my technical experiences in high school and I thought it would be a great opportunity to carry it over to college. Being my first project at the university, it was a great way to get started and familiar with everything, so I chose something that I thought would be a lot of fun. I decided to stick with a microcontroller-based design, because I had worked with them before. After some brainstorming, I came to the whack-a-mole machine idea: a mixture of something interesting and manageable.

As a general overview, the project is a whack-a-mole machine that uses a microcontroller as the control unit and several electromagnets as the popping mechanism. The back EMF created by hitting the magnets is used as the feedback signal. It basically works just like regular whack-a-mole machines in that the



electromagnet pops up and the game counts scores when the player hits it. In addition, the machine keeps track of how hard the player hits the "mole" and rewards harder hits. The mini desktop prototype has been completed, but in the future I'd like to make it bigger.

As simple as it might seem, there were a lot of obstacles I found myself faced with. Because it was impossible to know and plan everything ahead of time, I had to build things up and then try them out. Naturally, unexpected problems would come up all the time. Anything from painful debugging of the hardware, especially when I was running out of time before EOH to dealing with tricky and relatively large currents.

The noise from the large currents through the electromagnets kept interfering with my simulator (the equivalent of a microcontroller when debugging). Also the instant power dissipation of the electromagnets is very large, which caused problems with maintaining stable power for the microcontroller. Two days before EOH, when I was just about to start on the software part, my simulator broke and it became much harder to program and debug than expected. I actually started a little bit late on the first day of EOH, just because my project wasn't working that morning.

An unpredictable number of problems would sprout up at the worst times, but I just had to be patient and examine the system with the oscilloscope to try to find then solve the problems. After accepting the things that had happened I utilized the time I had to get things done. Adding capacitors solved the first two problems I mentioned. I also ended up writing a simpler program that still demonstrated the basic functions of the machine. By the afternoon, everything was working perfectly.

Overall, I learned a lot of technical knowledge about everything from circuit and program design to debugging skills. I guess something to take away from this would be to start early the next time so I won't have to pull an all-nighter and be pressured to work until literally the last minute. Of course, I'm sure we've all said that to ourselves at some point; we all know how hard that can be. In total, I spent at least eight hours per day the week before EOH,



and the whole night just before EOH. Other than that, approximately twenty hours on the circuit design, a whole weekend plus Monday on the PCB, and a weekend on ordering parts.

I loved EOH. I was so excited that I didn't feel tired at all even though I didn't sleep the night before. The feedback from the visitors was valuable. They gave me many constructive suggestions, pointed out the parts that need improvements, and carried out some tests that I hadn't thought of before. It was rewarding to see that people actually had fun playing with it. Many kids enjoyed the whack-a-mole and a baby even cried when leaving. Many people wanted to learn more about how it works. I enjoyed demoing and explaining the whole thing. It was great to share my knowledge, ideas and passion with people.

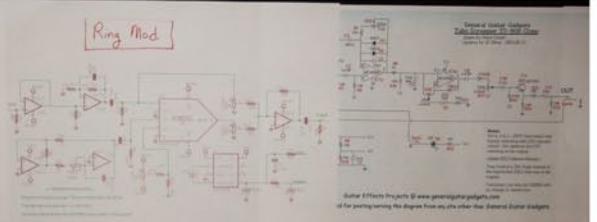
🎵 Audio Engineering Society

Daniel Klingler is a first year graduate student at the University of Illinois. He is currently the president of the newly revived Audio Engineering Society, that featured a number of projects at the Engineering Open House this year.

About the Audio Engineering Society

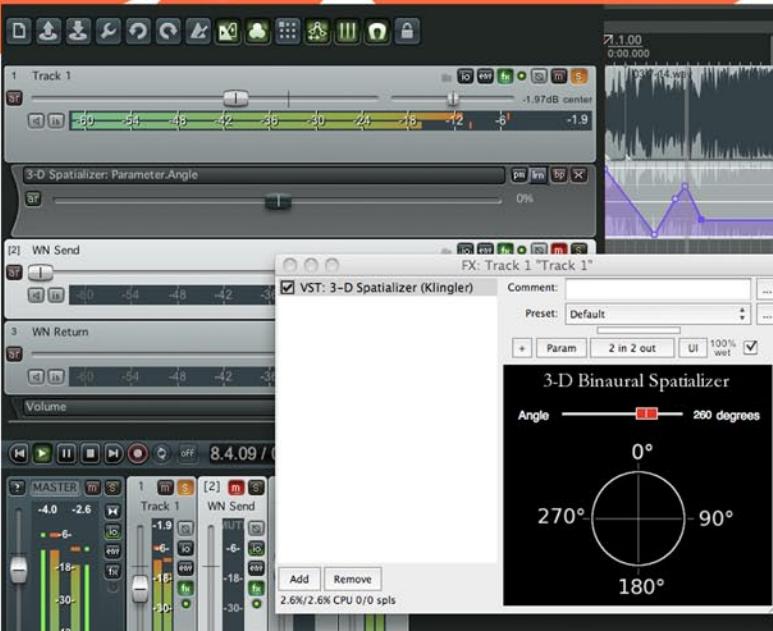
Engineering Open House Exhibit:

We thought it would be fun to present an exhibit at EOH, but we didn't have a lot of time to put together a large project. We decided to present four smaller projects that our members had made themselves.



Pedal board

The first part of our exhibit was a demonstration of a few guitar effects pedals that I had designed over the last few years. Our second demo was a 3-D sound plugin for headphones that I made as part of my senior thesis. Essentially, the plugin creates the illusion



3D plugin screenshot

that there are sounds coming from all directions around your head, instead of just left and right. The biggest hit (especially with the kids!) was Kyle's Theremin, an electronic instrument that makes wild sounds when you bring your hands close to the two antennae.

Our last demo was our Whack-za-phones, which are homemade wind instruments (conceived by Kurt Werner) made from PVC pipe and plastic bags. A couple weeks before EOH, we took a field trip to Home Depot to buy PVC pipe, and then turned 170 Everitt into a workshop for an evening. We ended up making five Whack-za-phones of various shapes and sizes. If you were taking a Monday evening exam in February and heard loud foghorn sounds coming from down the hall, it was probably us!



Kyle G Whackzaphone

A lot of people really liked our exhibit, ranging from college professors to grade school kids. Some people talked to me for half an hour about the engineering side of the demos, while others just wanted to play the Theremin. That's the awesome thing about audio. It's accessible to everyone, no matter your age, background, or education.

How the Audio Engineering Society at the University of Illinois came to be:

For most of my life I've been really interested in audio and music. When I came to UIUC in 2007, I checked to see if there was a UIUC section of the Audio Engineering Society. I found their website, but it hadn't been updated in years, and a few professors said the group had dissolved. This year, we finally got a group of students together to start AES up again. One of the coolest parts about AES is that in addition to engineering, we have students from many other majors as well, like music composition and informatics.

We don't have a website up and going yet, but if you want to get on the email list, just send an email to uiucaudio@gmail.com!

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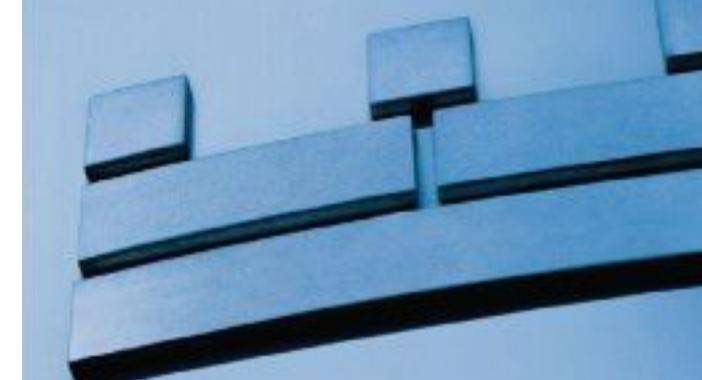
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Interview with a Dean:

Ivan Favila

Let's first get to know a little about you. Where are you from? Where did you school?

I grew up in Chicago in an area known as Little Village and I attended Whitney Young High School. After high school I came here to the University of Illinois where I obtained my Bachelor's degree in General Engineering.

What did you do after graduating?

For a year I worked in consulting, where I taught enrichment for middle and high schools, nerdy little things. Following that, I moved to Washington D.C. where I was a part of CAHSEE, the Center for the Advancement of Hispanics in Science and Engineering Education. Our aim was to increase the number of Hispanics in engineering to a quantifiable degree. It was here that I also learned of the under representation of African Americans and women in engineering. I later met some people from the University of Illinois at Chicago and I decided to work there. I spent nine years there and obtained my Masters in Mechanical Engineering.



So when did you come to work at the University of Illinois?

I've been here for three and a half years and I love this job. I get to meet with many students on a personal level and listen to their stories. There are some students in really complicated situations here and it's great to be able to help them figure out all of their options.

After working in many positions in several states, what do you like best about the U of I?

Accessibility. I like to advise students the way I wish I were advised. Engineering is pretty tough, but doable. It's about prioritizing appropriately.



Tell us about the Morrill Engineering Program.

The Morrill Engineering Program reaches out to high schools and middle schools to help and encourage minorities to become interested in engineering. Once they're here, we make sure that our students are keeping up and having a good experience. We aim to help increase the retention rate of minorities in engineering. The nationwide average is about 60% and for public schools it's a little less than that. At the U of I, we're at about 70, and our goal is to increase that by another 10.

Are there any recent projects the MEP has been working on?

Recently, we added the CARE center to the fourth floor of Grainger. This section now includes new monitors and furniture and tutors are available from 10 to 9.



What is the best piece of advice you would impart on an engineering student in general?

A lot of students think about dropping engineering because of things like early morning classes or the numerous labs and heavy course load. A fine-tuning of expectations might be needed, but this is what they asked for. I encourage students to remember why they chose engineering in the first place. I ask them to think back to high school or before that and remember what truly excited them. If you're genuine and passionate about your interests then don't forget.

Dean Favila can be found in 206 Engineering Hall by appointment or walk-in request.



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