IEEE

The SpartIEEE

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Upcoming Events

- November 2 – IEEE Fall 2006 Southeastern Michigan Section Conference. See SEM Website link below for more details.
- November 30 – Mondialogo sign-up deadline. For more information visit www.mondialogo.org or speak with Dr. Goodman about possible ECE 480 credit.

IBM- Innovation that Matters

By Shannon Nicley

IEEE was proud to host MSU Alumnus Bill Hall and former MSU IEEE President Gie Lee from IBM, who spoke on October 3rd as a part of the College of Engineering's Pre-Career Gallery event. Bill Hall is the Operations Manager for IBM's Semiconductor Product Group and Gie Lee works in IBM's Systems & Technology Group in Design Automation Enablement. The theme of the presentation was "Innovation that Matters," a theme that highlighted IBM's many technological contributions across a wide spectrum of products and services worldwide. They also gave an exciting preview of technologies that IBM is currently working on, that consumers can look forward to seeing in the near future.

Among IBM's many innovations are their contributions to technologies for the digital home, including their involvement in the development of multifunctional media systems such as the XBOX 360. In fact, IBM is involved in all three of the big names in gaming platforms, and are currently working on the Playstation 3, which will feature IBM's cell-processor technology, the Nintendo Wii and the yet-unnamed next generation of the XBOX 360.

IBM is also a huge contributor in a number of other technological areas, such as consumer electronics, RF ID, "On-Demand Business" solutions, and their popular blade server system. IBM also develops and markets a number of Point-of-Sale business solutions that make it easy for start-up businesses to get off the ground and medium-sized businesses to stay competitive.

IBM is also a leading innovator in integrated circuit (IC) fabrication technology, and they are working on a number of revolutionary improvements to lithographic processes that will shrink the minimum feature size of ICs based on silicon wafers to well under 0.1 microns. IBM has long been a leader in IC fabrication, and their proven technology and high yield processes are well respected in the field, and trusted by the U.S. government for a number of highly sensitive applications.

After finishing the presentation, Bill Hall and Gie Lee

took questions from audience members, who asked about everything from silicon wafers to internship opportunities. The audience was fairly large, and nearly filled the second floor classroom, which was hand-picked by advisor Garth Motschenbacher to be in "the heart of ECE country," where IBM could best target Electrical and Computer Engineering students.

The IBM event was a part of the larger Engineering College-wide Pre-Gallery event, which took place October 3rd, the night before MSU's Career Gallery career fair at the Breslin Center. The Pre-Gallery event was a chance for students to meet representatives of companies they planned to visit at the Career Gallery, since 20 companies seeking engineering students took part in the evening's activities. Most companies gave an hour or hour-and-a-half recruitment speech, and then met with students in the Engineering lobby outside of the Sparty's Coffeehouse on the first floor of the Engineering Building. However, due to popular demand, IBM gave two presentations during the two sessions to two different groups of students, and spoke to large crowds both times.

IEEE members were very satisfied with the presentation, and everyone who attended learned something new about IBM and their continuing commitment to innovation. After the successful event, many IEEE members spoke with Bill Hall and Gie Lee, continuing the long standing relationship between IEEE and IBM. For more information on IBM and their commitment to innovation that matters, please visit their website at http://www.ibm.com/.

IEEE Resume CD

By Tania Yusaf

IEEE is known for its desire to continually try to help its students in new and innovative ways. As a part of this, IEEE compiled a CD of ECE majors' resumes to be distributed to recruiters visiting MSU. At the Career Gallery held October 2, 2006, CDs with over 80 EE and CpE majors' resumes were distributed to 50 different companies attending the career gallery. Resumes were arranged in folders by graduation date with subfolders created by major. The CDs provided students another outlet to make their resumes readily available to employers as well as introduce employers to the MSU chapter of IEEE. Recruiters at the fair were greatly appreciative and impressed by the CD, making remarks like "This is such a great idea!"

If you receive a call from an employer as a result of submitting your resume for the IEEE Resume CD, please let IEEE know by emailing ieeemsu@gmail.com.

IEEE Links

MSU Student Chapter

SEM Website

Region 4 Website

IEEE National Website

Further Information

Wavelengths
A newsletter published eight times per year by the Southeastern Michigan Section of IEEE.

The Institute
A report on news around the IEEE.

IEEE Spectrum Online
The member publication of the IEEE.

What's New @ IEEE For Students
Check out this publication that is written monthly for students.

Contact Us

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Did You Know...

Two US presidents had engineering backgrounds.

Herbert Hoover, the 31st US President, studied mining engineering at Stanford University, graduating in 1895. Jimmy Carter, the 39th US President, attended Georgia Tech and the United States Naval Academy, from which he graduated in 1946. Carter served in the Navy for 10 years as an engineer working with nuclear-powered submarines.
-National Academy of Engineering
http://www.nae.edu/nae/cwe/egmain.nsf/webviews/FunFacts?OpenDocument&COUNT=5000

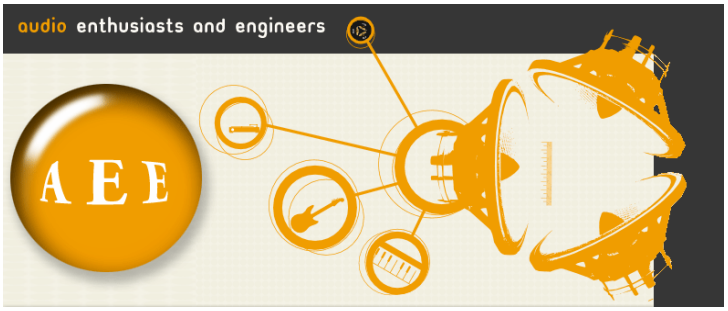
How I Obtained My Internship

To help students with their ongoing quest for an out of classroom experience, each SpartIEEE will highlight the process of an ECE student in obtaining their internship.

Name: Muhammad Junaid Zaheer
Graduation Date: May 2007
Major: Electrical Engineering
Company: Johnson Controls Inc.
Location: Holland, MI
Dates of Internship: May 2006 - Aug 2006
Job Title: Hardware Design Engineering Intern
How did you find your internship? Diversity Career Fair
Did you have a technical portion to your interview?
A bit of technical interview related to the projects I have worked on during my school and how I approached my design problems.
What sorts of questions did they ask?
Most of the questions asked during technical interview are related to BJTs and simple electronic circuits (mostly 302)
Length of interview: 2 hours
Type of interview: Phone Interview, Second Round(On-Site Interview)
Time it took to hear decision after interview: 2 days
What did you do at your internship?
Most of my job was related to hardware design, analysis and then testing of the analog/digital circuits. I had an opportunity to fix a couple of their design circuits and enhance their performance/efficiency.
How much technical knowledge were you expected to have?
ECE 302/366/320
Types of training you received: None
What MSU courses helped you with your internship?
ECE 302/366/320/484
Any advice to students looking for their first internship?
In order to be successful and get a good internship, you need to be really active in extracurricular activities. You should join various organizations in the engineering college and attain a position in E-Board which would give you enough leadership skills. Also when you go for a technical interview, make sure you understand your 302 course pretty well as most of the questions asked during the interview are related to this course.

When Innovation Meets Demand, Through the Gates of Music

By: David Lenz

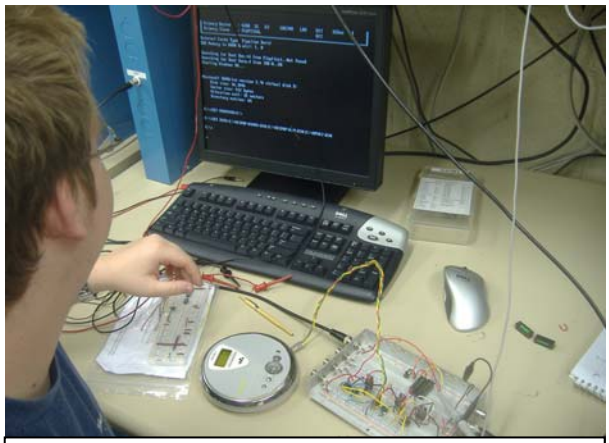


Audiophiles around the campus are all gathering in the Engineering Building this semester because of the brand new student organization, Audio Enthusiasts and

Engineers. AEE is a group of passionate and innovative students looking to expand their curricular education with an opportunity to design, prototype, test and build audio equipment. From speakers to amplifiers, all components are designed from the ground-up by members and implemented into higher-level designs. The group, which is made up of 30+ students from around the university, is split up in to six teams. Each team is responsible for the development of their project, and to communicate with other teams to ensure compatibility of all components. This is not only a test of engineering skill, but also in professionalism and teamwork.

Stas Todromovich and David R. Lenz at the 121st Audio Engineering Society Convention in San Francisco, California

Founded this semester by Electrical Engineering majors, Stas Todromovich and David R. Lenz, AEE is looking to expand in the coming semesters to move away from just the engineering aspect of the audio world. The industry looks also to students with skills in live sound reproduction, studio recording, multimedia production and many other skills. Students looking to find a career in the audio field will find all the help they need to guide their education. Relationships are currently being set up with the Communication Arts and Sciences department, the Music department, and Physics department. On the non-technical side, AEE is also looking to incorporate the business side of the industry by involving business, advertising and law students to help with corporate networking, promotional events, and patent/copyright acquisition.


AEE Member Mike Varney Prototyping a pre-amplifier design

Members spend many hours in and out of the lab each week working to complete their project. The skills they learn with the group not only make their resume look better, but give them hands-on work, with real-world problems, in a professional atmosphere. Come check them out at the Design Day, December 8th, 2006 at the MSU Union, where we will unveil this semester's project. For more information on Audio Enthusiasts and Engineers, please check out their website at www.egr.msu.edu/aee. Hardworking and innovative students need only apply.

Engineering Homecoming Tailgate

By: Emily Baker

Saturday, September 30, the College of Engineering held their annual Engineering Homecoming Tailgate in the lobby of the Engineering Building. Inside, the lobby was packed with student groups from all fields of engineering showcasing their organization with display boards and fliers. Alumnus, past and present professors, and students were all in attendance at this years tailgate providing students a chance to talk to alumni about their experiences as engineering students as well as their future plans.

Attending the event on behalf of IEEE were members Emily Baker, Shannon Nicley, Andrew Baczewski, and Ali Aqel, who distributed free cookies from Panera Bread and "Let's Get Nerdy" Microsoft t-shirts at the IEEE table. While organizations were showcased inside, outside past senior design projects could be seen on display.

DamilerChrysler – Kicking-Off a Great Year!

By Shannon Nicley

IEEE was pleased to have DaimlerChrysler (DCX) on campus on September 14th to kick-off the semester by meeting with students and giving a technical presentation on some of the exciting new technology in the automotive industry. The event was organized through IEEE in conjunction with ASME by former MSU IEEE President and current DCX MSU liaison Robert (Bobby) Flotkoetter. He was involved with IEEE during his last three years at MSU, and graduated in December of 2005. He started with DCX in February, and is working as a CIE (Chrysler Institute of Engineering).

The Kick-Off event began with a chance for students to meet with DCX recruiters in the Engineering Lobby, where they had set up an impressive display, including a number of DCX vehicles students could see up close. Since DCX's recruiting strategy this year has changed from years past, and no longer includes attending the Sci-Tech Exchange career fair, this was a rare and valuable chance for students to meet with DCX recruiters face-to-face. Students who were unable to attend can still get in touch with DCX however, as their recruitment is now done online, at http://www.careers.chrysler-group.com/.

A technical presentation in the Engineering Auditorium put on by a panel of current and past CIEs at DCX followed the meet-and-greet. The CIE program is a training program for recent graduates with Bachelor's Degrees in engineering disciplines who want to gain experience quickly through a series of short-term work assignments. These rotations give CIEs a chance to get a perspective on DCX as a whole, and get a good feel for where their career goals and qualifications best fit with DCX's needs and opportunities. Participants in the program also pursue a Master's Degree in either Electrical or Mechanical Engineering at one of several universities in the area, and are given up to one day a week off to accommodate the extra time required for their coursework. Participants usually finish their Master's

Degree in about two years, typically at the same time they complete the CIE program. In addition to full pay and benefits as a CIE, DCX also pays for all tuition and fees for the CIE's Master's Degree, making the CIE program a very attractive option for students who are interested in either going straight to work and staying on in college to complete a Master's Degree, or both.

The technical presentation covered a variety of exciting innovations in automotive technology. The Multi-Displacement System (MDS) for example, is a new feature in Chrysler HEMI engines. The MDS system allows eight-cylinder engines to run on only four-cylinders when the full eight-cylinder capacity is not needed, increasing fuel economy dramatically. The MDS system deactivates the lifters in four of the cylinders, keeping their valves closed. In four-cylinder mode, no air is pumped and no fuel injected, decreasing power and fuel losses. Advanced control algorithms and state-of-the-art hydraulic lifters make the process run seamlessly, requiring only 40 ms (0.04 seconds) to switch between the eight- and four-cylinder modes. An estimated ten to twenty percent increase in fuel economy can be achieved with the MDS system, which is an impressive improvement for a system without a tradeoff in performance.

Another innovation DCX representatives spoke about was the PRE-SAFE collision mitigation system, a comprehensive safety package that combines a number of revolutionary features. If the PRE-SAFE system predicts an impending collision, it rolls up windows and closes the moon roof to improve the structural stability of the car and prevent passenger ejection in case of a rollover. The PRE-SAFE system also pretensions the front seat belts, and can even move the front passenger seat to the best possible protection by the seatbelts.

Mercedes-Benz has also developed an adaptive cruise control system called the Distronic system. This intelligent radar-based system is able to follow a car a preset distance behind it, even in heavy traffic. The system even has access to 20% of the vehicle's total braking power, so when necessary, it can prevent collisions. The Distronic system is especially well suited to stop-and-go rush hour driving, where following a car a set distance can become a tiresome and frustrating task. With technological advances like these, it is clear to see why DCX is one of the industry's leaders in innovation. For more information on DaimlerChrysler, please visit http://www.daimlerchrysler.com/.