March 2025 Monthly Newsletter

iEEE FOOTHiLL SECTiON

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iEEE FOOTHiLL SECTiON MARCH EXCOM/OPCOM MEETiNG

The IEEE Foothill Section held its March ExCom/OpCom monthly hybrid meeting at DeVry University in Ontario last March 11, 2025.

DeVry University – Ontario
March 11, 2025

NANOTECH: SINGLE MODE MULTIMODE FiBER OPTiCS SENSOR WORKSHOP

UPCOMiNG EVENT

Autonomous Car Race and IoT Arcade
APRIL 13, 2025

Autonomous Racecar Workshop
APRIL 28, 2025

STUDENT CHAPTERS REPORT:

1 - Danny Topete from UCR

2. Lusine Hayrapetyan from CSUSB

3. Viridiana Delgado from CSUSB – WiE

4. Michael Nelson from CPP-Pomona

Viridiana Delgado during Raspberry PI Workshop

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IEEE Foothill Section March ExCom/OpCom Meeting

The IEEE Foothill Section held its March ExCom/OpCom monthly hybrid meeting at DeVry University in Ontario last March 11, 2025. All were welcomed by the chairman remarks and few changes on the previous meeting minutes need to be changed. The vTools officer term needs to be updated for officers to update or post events in vTools. The section finally has a Blockchain Local Group headed by Sean Hamilton, and the section is still looking for a volunteer for the YP chair position.

Membership Development

Kim Mosley was not able to report, so the chair did the reporting. The section currently has 747 members, which is a drop of some 200 members due to the yearly non-renewing members being removed from the active status.

Social Media and Website

Osman Ceylan reported. Unfortunately, we had no new members on LinkedIn in January, and only one member was added to our Facebook page. Osman reminded the section again to always update their activities on our social media accounts for more engagement and for our section to be advertised. In May aspart of MTT he will try a VNA antenna matching exercise using Nano/VNA before the regular meeting.

Technical Committees and Website Media and Website

MTT. Scott Wedge reported that he received an email from MTT inviting them to a Chapter Meeting for IMS 2025, which will be held June 15 to 20 in Moscone Center, San Francisco, CA. Then, after IMS, is the Design Automation Conference.

Ed/CASS/Photonics. Bo Chen reported. They will have this initiative on outreach, which Richard Fung will lead. They will have an upcoming event related to Photonics. Date and time are still tentative, but the initial plan will be in May, and it will be hybrid. Bo received an email from ICB to support the student chapter. However, the section has no active Ed/CASS student branch. This year, they will focus on three entities: government, academia, and industry. They also have this CA Dream, which will be discussed with Dr. S. Cargo on the potential collaboration of MOSIS 2.0.

ComSoc. Prof. Tamer Omar reported. Sustech 2025 will be in Santa Ana, CA., from April 20 to 23. Prof. Omar submitted a paper about a smart home monitoring system, which was accepted. The other event is the RC and Autonomous Car Race with other section student branches, and it will be on April 13. The CPP-ComSOc has two new officers, Daniela Rodriguez and Adam Tam. They had two events. One is about Energy and Spectrum Efficient Resource Allocation Algorithm for Heterogenous Networks, and next month, their talk will be about a student chapter joint event with CPP-Pomon ComSoc, UCR, and CBU about AutonomousCar Race and IoT Arcade. He also attended the IEEE 5G Workshop on First Responders and Tactical Networks.

Nanotechnology. Jenny Yu reported. They had the Fiber Optic Sensors Workshop, which had 15 attendees. On April 28, they will have an Autonomous Race Car Workshop with Chris Lai, a CPP alumnus.

PES. Koji Yamashita reported. They had a webinar last March 11 with only ten attendees. He invited a Dutch speaker who is working at Microsoft and will give a presentation next month but had an experience of working on transmission system operator. He will talk about the new challenges for transmission system operators. Another speaker will give a talk in May about renewable energy modeling.

CS. Sean Hamilton reported. Last month, they collaborated with Orange County CS about securing the development operations in healthcare and medical services. They will be setting up workshops to enable people to practice that skill and develop it marketably. For their first event, they will be bringing in IEEE-distinguished visitors to speak. More

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Here are two events recently reported by UCR chair Danny Topete that were related to the VexU project. One is a scrimmage and the other is a competition at MTSAC. They did very well. We have moved in VexU into our clubroom called the Solarium. They have been building there since. Attached are some pictures from competition. More updates about the Solarium, we have been cleaning up to the room and making sure it seismically adjusted.

By: Danny Topete

CSUSB-WiE reported by Viridiana Delgado
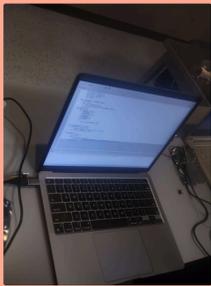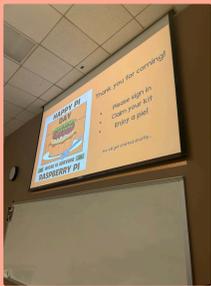
I was the host of the of the Raspberry Pi Workshop event. This was my first time leasing a workshop for the club, which taught me a lot of meaningful things. Upon arriving at the classroom. I realized I did not have my adapter in my backpack, which needed to connect the Raspberry Pi to my MAC. Thankfully, someone was able to bring it from home, but the workshop was a few minutes delayed. This allowed time for people to arrive, sign in, and eat their pies, so I think it worked out. However, upon other arriving, two students with MacBooks also forgot their adapters. I quickly retrieved two from the IT department two floors above. Finally, we were ready to begin the workshop.

I began with a video about microcontrollers to give some context on the hardware we are using. Then I started the steps on how to connect the Raspberry Pi Pico to the laptops and download Thonny, using the official Raspberry PI website. (https://projects.raspberrypi.org/en/projects/getting-started-with-the-pico/1).

After proper setup and installation, it was time to begin coding. I went through each line of code and explained what every line was doing. The project consisted of two files. After programming and saving it on the Raspberry Pi device, it was time to set up the hardware and connect the LED matrix to the Raspberry Pi. I set up a visual for the wire connections and explained where each wire from the board to the LED matrix connected.

We did run into few minor problems that required some troubleshooting and debugging along the way. For example, missing parenthesis, inconsistent tabs, and mislabeling. One of the more major issues we ran into was that the program was running without errors, but the LED matrix wasn't lighting up once we plugged it into the participants laptop. This is when we figured it had to be the files, not hardware. We began to compare codes and even aftersome debugging and ending up with what looked like the same code., the LED matrix was still not lighting up. Finally, we ran the IED matrix. the participants board (instead of the one I was originally using) and connected that to my laptop and ran the file. When using her stored files, it did not work

but when using my files, it did. Eventually, we figured out since she was storing her files under different names than mine, somewhere in the code she was still using my file name instead of hers. This caused issues with the program reading the driver and executing the functions.

Overall, the event was a lot of fun and it allowed me to practice my leadership and problem solving skills. Additionally, prior to the event, I had never worked with a Raspberry Pi. I taught myself a project specifically to have microcontrollers, and its different uses. Ultimately, I benefited from the event because it pushed me to come out of my comfort zone and to be okay with bumps in the road. All the matters is that I keep my focus and keep pushing forward. It was also beneficial to connect to the members of the club and collaborate. I fell more trying out new things and talking to new people after having hosted this workshop.

CSUSB reported Lusine Hayrapetyan

Last month was not very active in terms of events, but we did have classroom where we introduced our club to freshmen students. This opportunity came through their professor, who reached out to us for the presentation.

We have also been holding general meetings regularly.

For this month, I will be updating vTools with our scheduled events.

CPP reported by Michael Nelson

Our team of 34 undergraduate students used their digital logic skills to start creating an 8-Bit computer. Members were broken up into teams of 3-6 to tackle each module of the computer, designing them to be able to built and tested individually before combining the modules into a single functioning unit.

Students learned to read schematics and part specifications while thinking long-term about their testing phase and overall engineering design process. Students also learned how to work collaboratively and present their progress through preliminary design reviews among their peers. Our next steps will be to build and test their circuits by the end of the semester and we look forward to their success.

8-Bit Computer Project
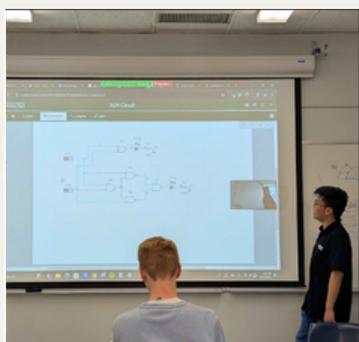
Circuit Simulation Workshop

In our circuit simulation workshop, students learned how to SPICE software to simulate the steady state and transient behaviors of electrical circuits, which is a powerful tool to use in the classroom and the professional world. By using SI Multisim and OrCad SPICE, students were introduced to circuits, transistors, LRC circuits, and basic filters.

NANOTECH: SINGLE MODE MULTIMODE FIBER OPTICS SENSOR WORKSHOP

Reported by: Kyle Sanuga

On February 25th, 2025, the Foothill/ Orange County Joint Sections Nanotechnology Council (NTC) Chapter and BANSHEE UAV Senior Research Project directed a workshop at California Polytechnic University of Pomona to educate and show the capabilities and different uses of Fiber Optic Sensors. The workshop was hosted by Cal Poly Pomona's own Doctor Ertan Salik. Dr. Salik began his presentation by introducing fiber optic sensors and their fundamental principles before focusing on single-mode-multimode-single-mode (SMS) fiber optic sensors. He explained how these sensors are created by splicing a multimode fiber between two single-mode fibers and how changes in external conditions alter transmission patterns, allowing measurement of parameters like temperature and strain. He highlighted their key advantages, including high sensitivity, compact design, and suitability for harsh environments. He then discussed his own research, showcasing projects where these sensors have been applied in healthcare, environmental protection, and biodefense. He elaborated on their potential for detecting biological agents and monitoring structural integrity. During the Q&A session, he addressed various applications, including using these sensors to measure strain in bridges. His presentation was both informative and inspiring. There were 15 attendees, including one IEEE member.

AUTONOMOUS CAR RACE AND IoT ARCADE

Sunday, April 13th

UC Riverside
Winston Chung Hall Room 205 | 206
12-3 pm

Food will be provided | Bring your own Project !!!

Prizes:

$200 - First Place
$150 - Second Place
$100 - Third Place

*PRIZES ARE GIVEN OUT IN THE FORM OF GIFT CARDS

IEEE FOOTHILL SECTION COMSOC CHAPTER AND CAL POLY POMONA'S IEEE CHAPTER COLLABORATION PROJECT AND CONTEST

Cal Poly Pomona

IEEE CalPolyPomona

AUTONOMOUS RACECAR WORKSHOP

INFORMATION

Join CPP Alumni Christopher Lai for a robotics workshop where you'll build and program an autonomous vehicle from the MIT Beaver Works Autonomous RACECAR program using ROS2. Explore concepts like HSV color image segmentation and PID tuning, with materials derived from MIT BWSI and MIT Lincoln Laboratory. Test your skills in an exciting race at the end!

SAVE THE DATE

RSVP for this Event by Scanning the QR Code Above. Spots are Limited!

DATE:
MONDAY, APRIL 28TH
1 PM - 5 PM

LOCATION:
BRONCO STUDENT CENTER, URSA MINOR

Any Questions?
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Visit our Website:
bansheeuav.tech