

APRIL 2025

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IEEE FOOTHILL SECTION

NEWSLETTER



Prepared by: Max Cherubin |
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IEEE Foothill April ExCom/OpCom Monthly Meeting

On April 08, the IEEE Foothill Section held its monthly hybrid ExCom/OpCom meeting. The chair welcomed the member with the chairman remarks.

The section finally has its own Zoom account for webinars or hybrid events. He also reminded the section about the upcoming SusTech 2025 from April 20-23. The section has been active in sponsoring the SusTech in every year. The quarterly meet-up is planned to be held at TopGolf. Osman Ceylan, the vice-chair will check the availability and

On April 28th, the IEEE Foothill/Orange County joint sections Nanotechnology Council (NTC) Chapter and BANSHEE UAV Senior Research Project directed a workshop
Read more on page 3

● Autonomous Car Race and IoT Arcade

Last April 13, 2025, the IEEE Foothill Section Communication Society conducted a workshop in collaboration with the students' chapter, the University of California-Riverside, and CalPoly-Pomona, the Autonomous Car Race and IoT Arcade.

...continue reading in page 4



Last April 7th, chair Max Cherubin and Bassem Maurice attended the IEEE MTT/APS event at Moore Laboratory in Pasadena. They had a German speaker and talked about..
Read more on page 5

expenses for the said event. This quarterly meet-up will bring the section together and is a great opportunity for camaraderie.

Membership Development

We have a total of 780 members. Our membership varies between seasons, so it goes up and down, especially for the student chapters.

Social Media and Websites

Next month, before the May ExCom/OpCom, Osman Ceylan, vice chair of the MTT/APS chapter, will host a hybrid workshop on VNAs. Osman wants to focus on LinkedIn since Facebook seems less active among its members these days. The LinkedIn page is private. Now we consider making it public so that the section can advertise and increase engagement. There were two who became members.



Technical and Committees

MTT. Osman Ceylan reported. They are looking forward to the IMS 2025. It is the biggest microwave event. Registration is affordable for students, and most activities that day are free. He can talk to someone who can give them a tour. The section might attend and is planning to rent a bus. IMS is not only about the transistor; he saw some drone companies measuring RF/Signals and mapping the area. So, he is encouraging the section members to attend this conference. Scott may attend the Design Automation Conference after the IMS, and he plans to attend both events.

ComSoc. Dr. Tamer Omar has plenty of events lined up for the chapter. The Autonomous Car Race and IoT Arcade is the one we look forward to, which he will collaborate with the students chapter (UCR, CPP, CBU), which will be held at UCR. They already had a collaboration last year, and since it was a success, they

decided to do it again this year. On April 17th, CPP-Pomona will have an AI Fair and Hackathon. It is a whole-day event, and he's encouraging the IEEE student members of CPP-Pomona to attend this event. It is a great event for those students who are interested in AI and generative AI. There will be some companies that will be part of the said event

PES. Koji Yamashita reported. He said their event on March 11 was now uploaded to their YouTube account, and he was surprised that after that event, 10 people had asked for the recording. They will have an upcoming event on April 18th with Dr. Vinay Sewdien. He also shared the possible webinars and speakers for the coming months.

CS. Bassem Maurice and Sean Hamilton reported. They are happy to announce that the Local Blockchain Group of the section is now active.

They also had a successful blockchain event with speakers from Brisbane and Sydney, Australia. The first speaker talked about Blockchain Energy Management and how it helps track the power produced and how payments are processed with distributed energy management and co-owners' electricity-producing devices, such as solar panels. Their next speaker spoke about decentralized identity management, which allows you to have more control over your identity, and it can be verified through a blockchain rather than different private entities. Sean has been reaching out to potential speakers for the future blockchain series.

Bassem Maurice shared that he nominated the section for the MGA Excellence Award in the medium-sized category. He started to fill out the application. The process for requirements is really extensive, and he needs further assistance from the section. One of the requirements is the website, where they can check the latest updates on sections like calendar events, blogs, etc. The section supports this activity, and it needs time and effort to successfully fill all the requirements.



Autonomous Race Care Workshop

Submitted by: Prof. Zhen Yu

On April 28th, the IEEE Foothill/Orange County joint sections Nanotechnology Council (NTC) Chapter and BANSHEE UAV Senior Research Project directed a workshop at California Polytechnic University-Pomona to educate and inform about the racecar program and how to operate an autonomous racecar. This workshop was hosted by CalPoly-Pomona and BANSHEE alumni Christopher Lai. Chris started his workshop by introducing himself and the racecar program. He informed the attendees that this program is to expose students to advanced autonomy, robotics, and research. This program also shows an open-source, free stimulator-based environment with synthetic sensor data developed in-house. The course has evolved over time, including bringing the cost of the cars down from \$10,000 to \$1,000 to improve accessibility. Chris then showed the components of the autonomous cars, which include a 1:14 scale RC Car Ackermann Steering Chassis, Raspberry Pi 4 8GB, Cor.AI TPU USB Accelerator, 30Ah Li-ion powerbank, 2000mAh 2S Lipo battery, Color Camera, depth camera, LIDAR, Inertial Measurement Unit, ESC, Servos, and Dot Matrix Display. Chris then showed how to tune the racecars including the hue values for the better understanding for the attendees. The rest of the time Chris allowed the attendees to work on their race cars to tune their hue values, speed and sensitivity. At the conclusion of the workshop, Chris allowed the attendees to race their cars. Ultimately, this workshop allowed for students to learn interdisciplinary skills that may not be taught in the course curriculum. There were 7 students in attendance, and I was an IEEE member.

This was the last workshop for the BANSHEE UAV project for the Spring '25 Semester. The project plans to continue this workshop curriculum for the Fall semester to continue to allow students to learn skills outside the classroom.



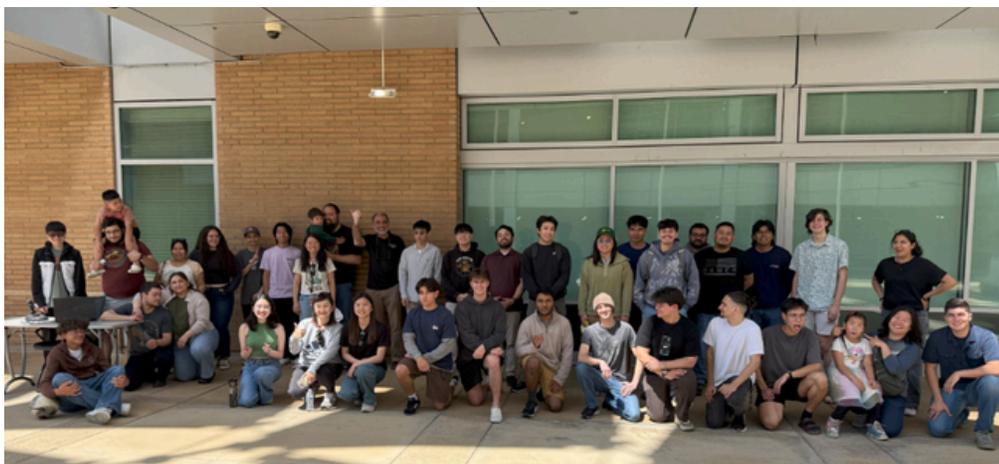
Cal Poly Pomona Senior Project: Aircraft 3D Modeling Solidworks Workshop

Reported by: Kyle Sakuda

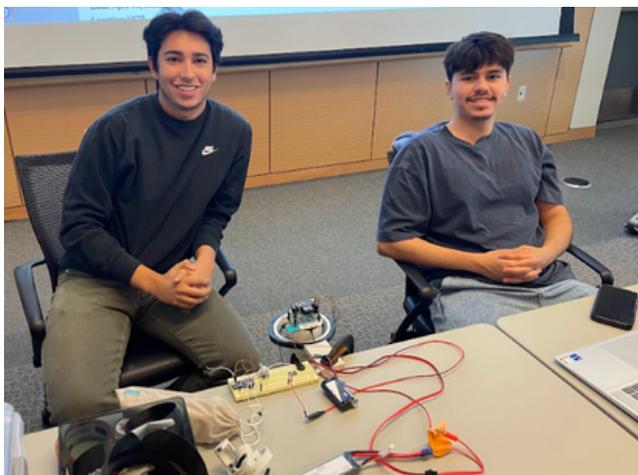
On April 23rd, 2025, the IEEE Foothill/Orange County Joint Sections Nanotechnology Council (NTC) Chapter and BANSHEE UAV Senior Research Project directed a workshop at CPP-Pomona to educate and show the capabilities of surface modeling for aircraft. The workshop was hosted by BANSHEE UAV's Design and Structures team lead, Christopher Camara. Chris started his workshop off with how to use surface modeling in Solidworks and how it applies to 3D models. He went in-depth on how it differs and can be beneficial compared to solid modeling. This includes: creating awkward or unique shapes, creating side profiles, and enabling smooth surfaces for aircraft.

He then talked about how surface modeling is something that is easy to get into. However, it is very hard to master due to different factors. After talking about the different pros and cons of surface modeling, Chris instructed and showed how to surface model a basic fuselage (airplane body) shape. The basic steps to creating this shape include: planes, center lines, mirroring, splines, and guide curves. Overall, the attendees were able to follow along to create their own aircraft body through the use of surface modeling in solidworks. Ultimately, Chris' workshop was both informational and hands-on, allowing students to learn different perspectives of surface modeling. There were 10 total attendees for this workshop, including 1 IEEE member. The project has a plan to host one last workshop to allow students to learn about different skills outside the classroom.

IEEE Foothill Section Third Autonomous Car Race and IoT Arcade Competition



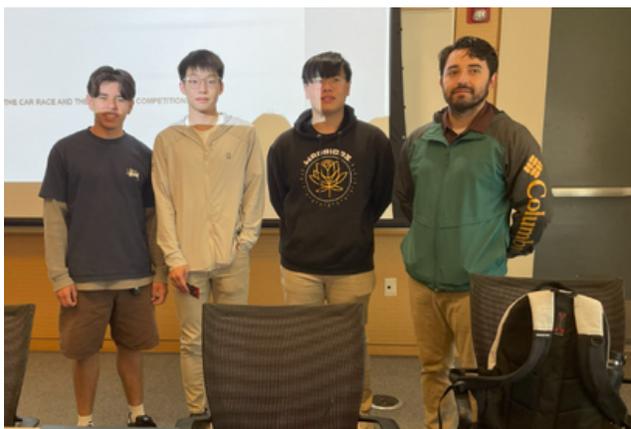
The IEEE Foothill ComSoc Chapter, IEEE UCR, CPP, and CBU Students Chapter organized the “Foothill Third Autonomous Car Race and IoT Arcade Competition and Showcase”. During the event, students, members, and community families joined eight teams competing in the Autonomous Car Race and IoT Arcade. The event took place at California University, Riverside, on April 13th from 12:00 PM to 03:00 PM. Competing projects in the IoT arcade were ranked by the event judges according to their design complexity, project scope, and number of members in the team. The following projects presented in the IoT Arcade were ranked according to their scores.



First Team: StarLyke (Adrian Gallardo, Sean Go, Nathan Bernal, and Hector Garibay) presented a gimballing rocket using a PID controller.



Second Team: Lancers Strongest Soldiers (Bonding Rush, Daniel Aleksak, Dariel, Ben, Jacob) presented a Gaming PCB, M5 Stack Game, and a Blinky Board.



Third Team: CPP Awesome Team (Cole Noelte, Bryan Lu, David Feng Zheng, Luis Rodriguez)



Additionally, members competed in a remote pilotless vehicles race. The Bronco Rollers team (Angel Garcia, Daniel Meyers, Daniela Rodriguez, Adam Tam) was placed first in the race.



The UGV Rescue Team (Erik Piche, Diego Diaz, Edward Galindo, Felipe Ortega Tellez) was placed second.

Pizza was served to the attendees during the event. The event was an excellent opportunity for students to present their understanding about embedded systems application, teamwork, skills, and mostly, fun.

IEEE MTT/APS: Advances in Multibeam Antennas and Beamforming Networks - Moore Laboratory Engineering:

Last April 7th, Chair Max Cherubin and Bassem Maurice attended the IEEE MTT/Aps event at Moore Laboratory in Pasadena. They had a German speaker and talked about antenna arrays and different satellite communications. There ten people attended.



UPCOMING EVENTS:

IEEE Foothill May ExCom.OpCom Monthly Hybrid Meeting

May 13, 2025

IEEE Foothill May Consultants Network Meeting

May 07, 2025

IEEE Foothill Section MTT/APS: VNA Workshop

May 13, 2025



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