



IEEE Foothill December

Monthly Newsletter

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IEEE Foothill December 2023 ExCom/OpCom Monthly Hybrid Meeting

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The IEEE Foothill December 2023 ExCom/OpCom Monthly Hybrid meeting occurred at DeVry University in Ontario and via BlueJeans last Dec. 12, 2023, at around 7:09 pm. The section is now calling for nominations of officers for the year 2024. The chair brought up section support for SusTech 2024 and FISTS 2024 (Forum for Innovative Sustainable Transportation Systems) at UCR February 26-28, 2024.

Membership Development

Our membership increased by 15 members from last month. We had one member grade and 14 new members from student/graduate students. Now, we have a total of 986 members for the section. We also had two senior elevations, Nelson Green and John Hofman.

Website and Social Media

As for our social media, we had a massive LinkedIn visitor increase last month which reached 4500 visitors. Osman Ceylan doesn't even know what happened as to why we had that amount of visitors, but it is a good thing for the section. The more visitors that engaged in our section, the better because we can encourage volunteers.

Technical Committees:

Scott Wedge presented a talk in CPP last Nov. 28, 2023, and he talked about the history and opportunities in electronic design and automation. Osman Ceylan also reported about the two conferences he attended. One was held in Japan, it's during microwave week. He thinks that most of the sessions are on AI design and measurements area, and it's a hot topic. Most of the companies are investing in high-power businesses like TSMC Sumitomo Mitsubishi, and the rising trend is satellite communication, but the ground stations, not the satellite ones, because they say roughly 1000 satellites will be launched every year, but the ground will be millions.

Nanotechnology Dr. Jenny Yu wasn't able to attend the meeting, but Addie Hasson was able to share about the last two workshops for this semester. A report for this workshop will be on the next page.

PES, Koji Yamashita, had a report about the part II of their webinar last month. Their topic was about Embedding Consideration of Weather and Climate into Power System Planning. There were 47 attendees, and PES will still have more upcoming talks for next year.

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Computer Society has been active in some joint events as Tamer Omar volunteered to be the interim chair. Recently they had joint events with other sections.

YP, with their new interim chair, Pankaj Bhowmik, had their first event for this year, and it is a joint talk with the YP Hawaii Section. It was done last month, and for this month, the chapter talked about "The Power of Systems Thinking." This was done last December 14, 2023. The chair will email universities to recruit graduate students for the YP team and plan for next year with at least one in-person event. He also plans to attend the Rising Stars 2024 this January.

Consultants Network will have no monthly meeting for January 2024.

Student Branch Update

CCP (CalPoly-Pomona): Semester Activity Report (Part 2) *Reported by Sameer Sharma*

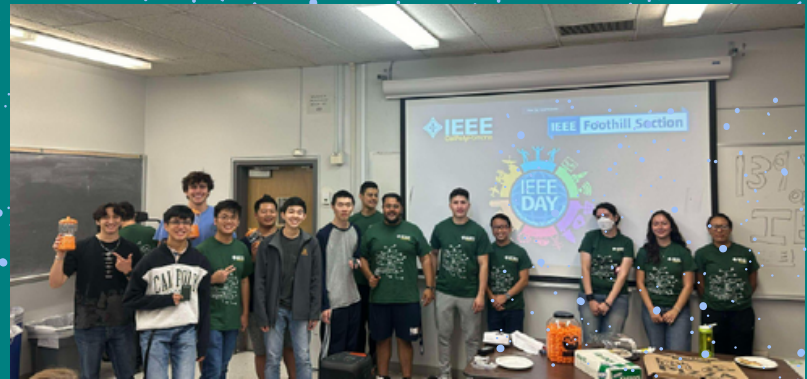
September 29, 2023: Circuit Construction Workshop



We held our first workshop of the Fall 2023 year, held by our project chairs. This workshop was aimed for beginners who wanted to learn about the basics of electrical circuits.

October 3, 2023: Third General Meeting

About thirty members joined us to celebrate National IEEE Day. Before our celebration our members with upcoming workshops and socials with other groups, job/internships opportunities. To celebrate, we had a competition with random groups of three that used limited resources of basic office supplies to transport cheese puffs from one side of the room to another through paper airplane. Each team had limited time to complete their design with resources taken away and resources given as challenges throughout the competition. First place and second place winners got prizes, and all members were offered cheese balls, pizza, and cake for a festive setting for National IEEE



Day in the style for the Happy Birthday song.



October 5, 2023: Python Workshop - Part 1

This workshop was aimed at beginners who wanted to learn the fundamentals of Python coding. There were about fifteen people in attendance.

October 6, 2023: Printed Circuit Board Workshop - Part 1

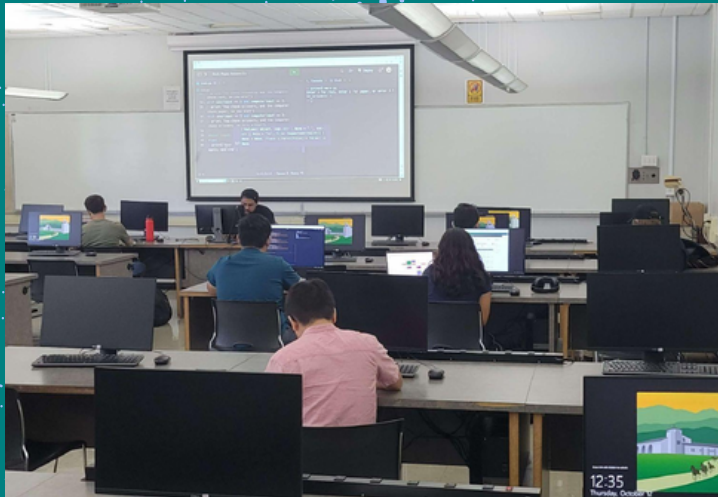


This workshop was aimed at those who wanted to learn the basics of printed circuit board design using Altium software. Not many schools teach printed circuit board design, so we hoped that workshop gave attendees skill that differentiated themselves from other engineering students.

October 17, 2023: Fourth General Meeting

About twenty of our members joined us for another general meeting in the middle of the semester to discuss our upcoming trip to the Consumer Electronics Show (CES) in Las Vegas, Nevada. The trip has been an annual tradition for about twenty IEEE CPP members to go on to be able to see the newest and greatest technology released to the public eye. Members pay for the ticket to enter the three-day during the first week of January, but IEEE CPP provides the lodging for the members. This event is the largest in-person, independently audited tech event in the world, drawing people in from all over the world. The national IEEE group holds a booth at this show, and we plan to visit that booth this year just like we did last year.

October 12, 2023: Python Workshop - Part 2



This workshop aimed to use the fundamental skills of Python learned from the first Python workshop to create a game as a project using Python coding. We hoped that this would inspire attendees to make games and other projects of their own with Python coding using what they learned about the proper structure of coding.



October 19, 2023: ASME CPP x IEEE CPP RC Car Project Collaboration Meeting

The Cal Poly Pomona chapter of the American Society of Mechanical Engineers (ASME CPP) and IEEE CP had a meeting with both our group members who were interested in collaborating for an RC car competition that will be held at the end of the Spring 2024 semester. In attendance, we had a combined total of over forty members from both our groups, and we shared our interest form after introducing the idea to everyone. After talking about the competition, there was a guest speaker, an alumni from Cal Poly Pomona, who talked about the company she founded.



PES: European Network Code with Focus on Inverter-based Resources - Part 2 (Requirements for Grid-Forming Converter)

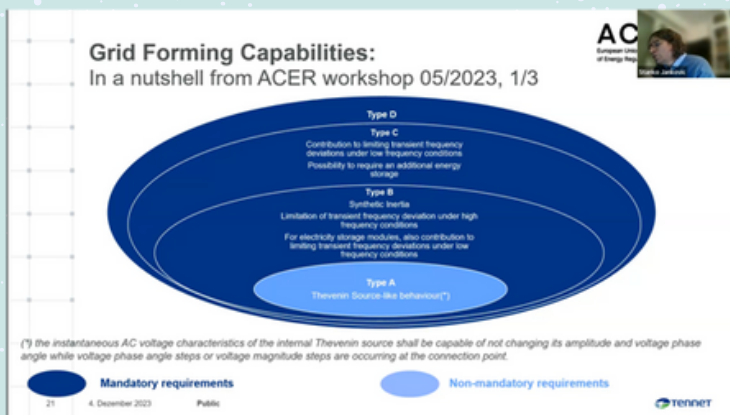
Submitted by: Koji Yamashita

The IEEE PES Foothill Seminar titled 'European Network Code with a Focus on Inverter-based Resources' took place online on December 4, 2023. Dr. Stanko Jankovic, an Engineer for Network Development in the expert team of Electric System Design at German TSO TenneT, delivered the latest updates on the European Network Code, emphasizing Inverter-based Resources.

Despite the relatively small audience (10+ participants), attendees expressed satisfaction with the comprehensive information provided regarding the European Network Code Update. The discussion primarily focused on forthcoming grid-forming converters, detailing the year-by-year published technical reports and white papers that led to the establishment of the Network Code in the EU, accompanied by complete URLs for reference.

Active discussion ensued, continuing for nearly 20 minutes after the presentation. The seminar was recorded and available in MP4 format upon request. Interested individuals can contact Dr. Koji Yamashita at kyamashi@ucr.edu for access to the recording.

The IEEE PES Foothill Section seminars consistently feature relevant topics concerning grid-forming converter technologies. The upcoming webinar will showcase a grid planning methodology addressing severe climate change, though it may be less directly relevant to these technologies. However, in Jan. 2024, the subsequent webinar will focus on a grid-forming converter demonstration project in Asia.



Grid Forming Capabilities:

In a nutshell from ACER workshop 05/2023, Electromobility applicability of NC RfG

Bidirectional electric vehicles and associated bidirectional electric vehicle supply equipment

0.8 kW ≤ capacity < 2.4 kW
V2G type EV1

2.4 kW ≤ capacity ≤ 42 kW
V2G type EV2

42 kW < capacity < 1 MW
V2G type EV3

Article 13a of NC RfG
– exhaustive requirements (same for both EV1 and EV2)

- frequency and voltage (LV) ranges
- RoCoF withstand capability
- data interface for charging infrastructure
- autonomous connection / reconnection
- LFPM-U EV and LFPM-O EV
- voltage robustness/FRT

Article 14a of NC RfG

- requirements applicable to type EV1 and EV2
- voltage ranges for MV/HV/EHV
- system management
- reactive power capabilities
- power fault service power recovery

Grid forming capabilities

4. December 2023 Public tennet

Grid Forming Capabilities: Preliminary works and timeline

- Actuel NC RfG (https://www.entsoe.eu/network_codes/rfg/)
- CNC - Implementation Guidance Documents (https://www.entsoe.eu/network_codes/cnc/cnc-igds/)
- MIGRATE Project (<http://www.migrate-project.com/>)
- ENTSO-E Position Papers (<https://www.entsoe.eu/publications/position-papers/>)
- Ekspert Groups (https://www.entsoe.eu/network_codes/cnc/expert-groups/)

3 4. December 2023 Public tennet

Upcoming Events

IEEE Foothill ExCom/OpCom January Monthly Hybrid Meeting

January 09, 2024

IEEE Foothill Section CN (No meeting on January)

IEEE Foothill Section Election

January 01, 2024

Rising Stars 2024

January 05-07, 2024

FISTS 2024: Forum for Sustainable Transportation Systems

February 26-27, 2024

SusTech 2024: Technologies for Sustainability

April 14-17, 2024

We welcome volunteers!

Be part of our growing community, and let's
work together to help STEM students and
future educators.

EMAIL US:

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Happy Holidays

Wishing you peace, love and prosperity
this holiday season.

