IEEE **FOOTHILL**
MONTHLY NEWSLETTER - MAY 2022

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IEEE Foothill ExCom/OpCom May Meeting

Prepared by: Max Cherubin

The IEEE ExCom/OpCom May Meeting was held via BlueJeans last May 10, 2022, at 07:08 pm. It began with opening remarks by the chair followed by the secretaryś report. The chair discussed the meeting survey most members voted to continue having virtual meeting rather than in-person.

Section and Committees

For Membership Development, Kim was unavailable to report but came later, so the chair reported on her behalf. We have 832 members, which is an increase of 23 over last month's status. Three new members grade and the rest students/graduate students. We had James Liao submit a senior elevation package and were able to assist him in obtaining three references from our section, which included Dr. Tamer Omar and Gerald Herder. James' application will likely be reviewed at the next meeting in June.

For Social Media and Websites, Osman reported that we had around 400 viewers on the website. He encouraged all members to keep posting about IEEE Events on their accounts as a way for the organization to be advertised.

Student Chapter

Michael O'Dea, the president of the UCR student chapter, reported and said that they had just had a general meeting. They also had their technical workshops for those who are still in the job and interview process. All the projects that they have been doing are transitioning and working competing in Julyś competitions. They will have a micro mouse competition, and they have been collaborating with other colleges for it. They also plan to have an IEEE banquet and hope to have a large general meeting after two years. They will have some games and food. Also, they just had their board advisors' meeting.

Jonathan Rosas, industry representative of the CPP student branch. They just had their end-of-the-year banquet. They also had a presentation from Dr. Eric Potman on converting a Simple Camera Into an Infrared Imager on May 3rd. They just also had a presentation from San Diego Gas and Electric. They came to present to the students about their company and recruit as well.

Seth Gil, the new current chair of the CBU student branch, said that they are not doing much during the summer more social events. They are using summer to plan out next year's events and projects. They are looking for a larger scale of tasks to do during the spring or general plan. Next semester, what was recommended by the old being the electromagnetic compression as one of the possible projects.

Ivan Magana from CSUSB reported that they are now in their final week of classes. They are going through elections for the new set of student officers for the next school year and training the new officers over the summer.

Dr. Moe Saoli from DeVry didn't have much to report other than they are still working on the workshop series. They are working on a cybersecurity workshop at the moment.

Technical Committees

On April 20th, MTT/AP/ED/CS co-hosted a webinar on verification with a harmonic balance that was done with Siemens on April 28th. They promoted an event with their colleagues out in Buffalo Section, which they have partnered with many times on Extreme Field Control with Electromagnetic Media Services. UCLA held a Prof. Tatsuo memorial symposium, and it was co-hosted by the AP/MTT chapters in Southern California on May 5th. They have been emailing some of the officers and Dr. Jenny Yu regarding increasing broader participation in the Circuits and Systems Society and encouraging some events and activities to encourage women to be involved in the Circuits and Sytems Society.

Dr. Jenny Yu of Nanotechnology talked about their recent event last May 3rd, and there were about 50 people who attended. During the webinar, more about this report in the following write-up.

Dr. Tamer Omar of the Communication Society is looking for volunteers for the chapter. He sent a couple of emails regarding it, but unfortunately, only James Liao responded. He agreed to be the vice-chair to help promote more events and engage the industry more to provide better service to our members. Although they still need at least two more volunteers if possible. Hopefully, they will have their election completed by the next ExCom/OpCom meeting. They also co-hosted an event with the Oregon Chapter, and it was called Deep Reinforcement Learning in 5G and 6G Networks.

Ray Moreno from the Computer Society was not around during the meeting but was able to send a write-up to our chair. Computer Society will be having a talk in June with Dr. William Curd about Deep, Dark, and Political on the Internet and Cybersecurity Certifications.

Kimberly Mosley from Women in Engineering met with one of the Buenaventura about the STEM event. She just crafted a communication notice that is going out later this week. It is a survey form, and sheś requesting everyone to participate in a planning committee. Is anyone interested in sitting on the planning committee and being part of a planning event for middle school girls for late fall to early spring, virtual or in-person?

Consultants Network had their meeting last April 27th, and it went well. The section chair sent out a survey regarding the scheduled meeting day of Consultants Network, and the majority agreed to have it back on its original schedule, which is every first Wednesday of the month. They will start the new plan by July since they won't have a meeting by June. Aside from that, Cash is investigating possibly having a combination of Southern California and San Diego Network. If they agree, they could have three sections under one group.

SusTech 2022:
Prepared by: Ray Moreno

I attended the SusTech Conference with Whova App. I will compare Sustech with my experience at the 2020 IMS (International Microwave Symposium) conference. The IMS Conference was initially supposed to be held in Los Angeles (Live). We were all excited because it was coming to Los Angeles. This is a big event typically held at grand international venues. Then Covid-19 hit. The organizers waited to see if things would re-open. When it became clear that virtual was not going to happen, they moved the conference to Aug 20-23, 2020, and it is virtual.

Unfortunately, they had no experience with the virtual world. Thus, I saw some speakers with their heads upside down, connectivity issues, loads of audio problems, and some speakers transmitting from their car with a cellphone. Welcome to the future.

Fortunately, SusTech 2022 was nothing like that. For one, it was a lot more professional. The first thing a visitor would see is the Whova App (see picture on the next page)
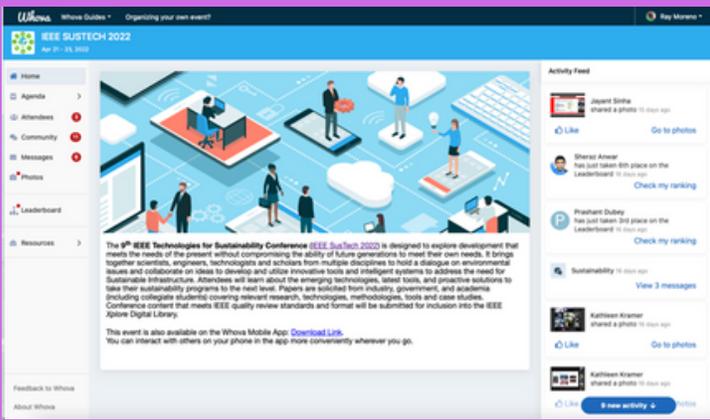
But the experience began before the conference, with the user profile. You see, the best way to use Whova is to create a user profile file. It is also best to upload a picture for yourself. After all, when one attends a live conference, as you sign in, a badge is made. The badge has your name and often the company you are with.

So often, when attending a live conference, people would start a spontaneous conversation with me just because my badge said "Northrop Grumman." The conversation would almost always begin like, "I used to work for Northrop Grumman! Do you know Dr. XXX?" In Whova, that is what the profile is for. It identifies your areas of interest. Then you can connect with other people who share those interests.

To try and make it feel more like an actual conference, Spatial Chat was added. These are supposed to simulate live discussion chatting areas, like the bar where you meet up with your friends at the end of the day. However, it had poor participation. I think the reason was that after spending all day long sitting behind a computer, the last thing people wanted more of was screen time.
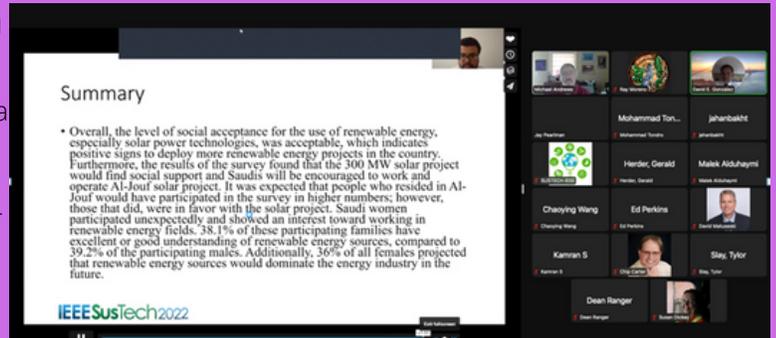
However, in general, the talks were much better. The first event I attended was a recorded event. This was done because some of the speakers were from overseas, and they did not want to stay up all night long. You can also see a greyed-out box which is still a technical glitch to be dealt with. Most events had healthy participation, with between 10-30 participants.

On the second day, it was much better. We had some lively and even heated discussions on nuclear power. The third day was Sustainable Aviation topics.

Nanotechnology: *How to turn a Simple Camera into an Infrared Imager*

Prepared by: Dr. Jenny Yu

The Foothill/Orange County Jt. Sections Nanotechnology Council Chapter and IEEE Foothill CPP Student Chapter held their event on May 3, 2022, online and at Cal Poly Pomona. The keynote was Dr. Eric Potma who is a professor of Chemistry. His group focuses on the characterization of nano-structured materials and biological tissues with the aid of new optical imaging techniques.

Dr. Potma described a new technology that turns a regular CMOS camera into an infrared imager. This optical method involves the simultaneous absorption of two photons by the silicon chip in the camera. This approach offers an attractive and affordable way to rapidly record infrared chemical images at high definition, enabling a new range of infrared imaging applications, including remote sensing, biomedical imaging and 3D visualization of printed circuits.

The audience included many CPP students who said they had gained valuable information from this event. By using nondegenerate two-photon absorption in a Silicon-based Camera, people can quickly obtain mid-infrared chemical images at high definitions. The new method is very promising for applications such as biomedical imaging, 3D imaging, and environmental monitoring. The audience enjoyed the imaging through an opaque material. This event attracted 50 viewers on Zoom and another 15 in-person at Cal Poly Pomona.
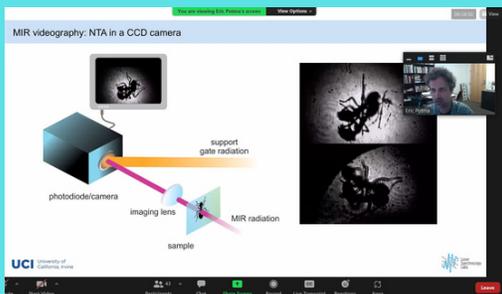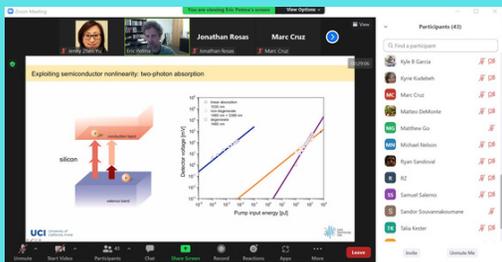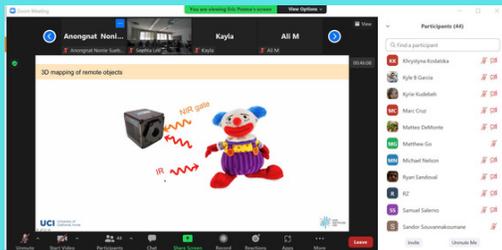
The UCR Student Chapter gave us an update about their activities and their plan for the chapter.

Robosub

In previous competition with 47 international teams,
UCR got in the semifinals!

- On track to compete in the next competition
- Mechanical is currently resuming water testing.
- Software using new "SeaThru" algorithm
- Electrical received a new power supply

Micromouse

- Revitalized as project
- ~ 12 student members
- Teaching embedded systems & robotics
- Competition: May 29, time TBD (est 11am-3pm) WCH 205/206

Hackathons

Cutie Hack : Better Together
- 12 hour beginner oriented hackathon during fall quarter
- Around 50 projects submitted!

Citrus Hack Grow Your Potential
- April 2 - 3
- About 350 students from several universities
- 24-hour hackathon event

Unmanned Aerial Systems UCR UAS

- Borealis construction almost ready
- Focusing recruitment and retention
- Held Python Workshop: 140 signups, 60 weekly attendees
- Successful Aerocon 2022

Solar Car

- Designing a new cost-efficient aeroshell
- Working on circuit schematic revisions, Driver Interface and Telemetry
- CAN Bus Workshop amongst project members
- Socials & Company Outreach for fundraising.

UC RIVERSIDE SOLAR CAR TEAM

Professional Development Workshops and Events

- Resume Review Workshop
  - Peer Review Edits
- Intern Panel
  - 5 Interns
  - Northrop Grumman, Northwestern University, JPL, Raytheon, and more!
- Landing a Career in Aerospace (Aerocon 2022)
  - 12 attendees
  - Career Center Collaborative Event

Landing a Career in Aerospace 22

PES: <u>Applications of Reinforcement Learning in Power Distribution Systems</u>
By: Dr. Nanpeng Yu

Prof. Nanpeng Yu presented his work on Applications of Reinforcement Learning in Power Distribution Systems to a group of power engineers in the Foothill Section and Riverside Public Utility.

This presentation covered the motivation for developing data-driven volt-var control in power distribution systems. There are many practical challenges associated with adopting reinforcement learning-based controls in real-world critical infrastructure systems such as the power grid [1]. It is crucial to improve the safety [2], and sample efficiency of reinforcement learning-based control in power distribution systems. Embedding power system domain knowledge [3] in the reinforcement learning-based control could further enhance the performance of data-driven algorithms.

Upcoming Events:

IEEE Foothill June 2022 ExCom/Opcom Monthly Meeting

June 14, 2022

IEEE Consultants Network Meeting

May 25, 2022

Computer Society: Deep, Dark, and Political on the Internet

June 29, 2022

Social Media:

facebook

https://www.facebook.com/ieeefoothill

Linked in

https://www.linkedin.com/groups/13516173/

"Please don't forget to post your IEEE Events on our group page and also to like, share, and subscribe for our page to be advertised."