

# IEEE Scanner

November 2024 Newsletter of Baltimore, Northern Virginia & Washington Sections

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**Today in Technology History:** It was on December 3, 2001 that Dean Kamen announced the Segway following months of hype about a revolutionary mobility device.

## 2025 Class of IEEE Fellows:

The 2025 Class of IEEE Fellows has not yet been publicly announced.

## New Senior Members:

Newly elevated Senior Members from the November 2024 Review Panel Meeting have not yet been publicly announced.

## Upcoming Events:

| Date/Time                   | Title   | Speaker(s)                              | Location         | Primary Sponsor  |
|-----------------------------|---|---|------------------|--|
| Dec 03,<br>2024 03:50<br>PM | <a href="#">Physical Human-Robot Collaboration (pHRC) – Research Challenges and Applications</a>                | Dikai Liu                               | Virtual          | Robotics and Automation Society Chapter                          |
| Dec 03,<br>2024 05:30<br>PM | <a href="#">Conversational Artificial Intelligence with the Raspberry Pi</a>                                    |   | Arlington, VA    | Northern Virginia Section Chapter                                |
| Dec 05,<br>2024 12:00<br>PM | <a href="#">Celebrating IEEE PES DEI Week- Engineering Across Borders: Grad Bites &amp; Global Flavors</a>      | Tarek El-Ghazawi; Dr. Payman Dehghanian | Washington, DC   | Power Engineering Society, Industry Applications Society Chapter |
| Dec 09,<br>2024 06:00<br>PM | <a href="#">Industrial Neuromorphic Computing: The NorthPole AI Chip and Improved Brain Health with Cogwear</a> | Arnon Amir; David Yonce                 | College Park, MD | Washington Section Chapter                                       |
| Dec 09,<br>2024 06:30<br>PM | <a href="#">Baltimore Section Executive Committee (ExCom) Meeting, 9 December, 2024</a>                         |   | Virtual          | Baltimore Section Chapter  |
| Dec 10,<br>2024 06:00<br>PM | <a href="#">IEEE NOVA Section EXCOM December Meeting</a>  |   | Arlington, VA    | Northern Virginia Section Chapter                                |

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**Date:** December 3, 2024 (Tuesday)

**Topic:** Physical Human-Robot Collaboration (pHRC) – Research Challenges and Applications

**Speaker:** Dikai Liu

**Time:** 3:50 PM

**Place:**

**Registration:** <https://events.vtools.ieee.org/m/446604>

**Abstract:**

The IEEE-Robotics & Automation Society (RAS) Jt. Washington D.C. and Northern Virginia Chapter cordially invite you to attend a Distinguished Lecture (DL) seminar "**Physical Human-Robot Collaboration (pHRC) – Research Challenges and Applications**", by Professor Dikai Liu from the University of Sydney.

There has been increasing interest in the use of intelligent robots that can interact, assist and collaborate with humans. However, a number of key research challenges need to be addressed before robotic systems can be deployed to physically collaborate with human co-workers with varying strengths and in typically unstructured industrial environments. The talk will first discuss challenges of research on physical human-robot collaboration (pHRC), then the development of intelligent robotic coworkers that physically collaborate with humans performing labor intensive tasks such as abrasive blasting and patient handling. Topics include (1) assistance-as-needed paradigm; (2) control methods of robotic co-workers; (3) safety framework for physical human-robot collaboration; (4) brain-robot interface for intuitive human-robot collaboration; (5) modelling of human performance in pHRC; (6) development of robotic co-workers: an Assistance-as- Needed roBot (ANBOT) and a Smart Hoist.

Attendees are eligible to receive an IEEE Certificate of Continuing Education Units /Professional Development Hours (CEU/PDH) by attending the full duration of the presentation, completing, and submitting forms at the close of the program.

**Speaker Bio:** Dikai Liu is a distinguished professor and Director of the Robotics Institute at the University of Technology Sydney (UTS), Australia. Professor Liu received the B.E. degree in mechanical engineering, the M.E. degree in mechatronics, and the Ph.D. degree in dynamics and control from the Wuhan University of Technology, Wuhan, China, in 1986, 1991, and 1997, respectively. His current research interest is robotics with the focus on perception, planning, human-robot collaboration and robotic systems. He has published many papers in IEEE Transactions including T-

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RO, T-ASE, T-Mech and T-BME and IJRR. Besides conducting fundamental robotics research, he has also been transforming robotics research to industry applications, including autonomous robots for steel bridge maintenance, bio-inspired climbing robots for inspection of confined space, intelligent robotic co-worker for human-robot collaborative abrasive blasting, smart hoist for patient transfer, and autonomous robots for underwater structure maintenance. Since 2006, his research has received over 20 best paper and research/engineering excellence awards, including the 2019 ASME DED Leonardo da Vinci Award, the 2019 UTS Medal for Research Impact, the 2019 BHERT Award, the 2016 Australian Engineering Excellence Awards (AEEA) and the 2015 Asia Pacific ICT Alliance (APICTA) Award. Part of his research outcomes has been translated to industry applications, including autonomous bridge maintenance robots commercialized by SABRE Autonomous Solutions, a climbing robot deployed for confined space inspection, underwater robots for bridge pile maintenance, and multi-robot systems for automated container handling.

**Presented by:** Robotics and Automation Society Chapter

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**Date:** December 3, 2024 (Tuesday)

**Topic:** Conversational Artificial Intelligence with the Raspberry Pi

**Time:** 5:30 PM

**Place:** Lubber Run Community Center, 300 N. Park PL, Arlington, VA (Beech Room)

**Registration:** <https://events.vtools.ieee.org/m/443414>

**Abstract:**

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Continuing with the Control Systems NOVA chapter presentations of Conversational Artificial Intelligence (CAI) using the Raspberry Pi 4 controller, this event includes a workshop segment where attendants get to converse with a rudimentary CAI.

The event will begin with a brief presentation on terms and ideas concerning artificial intelligence to better understand how CAI fits in the wide world of Artificial Intelligence. Then, it will be followed with a hands-on workshop teaching and using personal CAIs.

Several machines will be available to allow attendants to teach and ask questions to their personal CAI. In addition, they will make their CAI share knowledge with other CAIs.

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Rolo Martinez

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**Presented by:** Northern Virginia Section

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**Date:** December 5, 2024 (Thursday)

**Topic:** Celebrating IEEE PES DEI Week- Engineering Across Borders: Grad Bites & Global Flavors

**Speaker:** Tarek El-Ghazawi; Dr. Payman Dehghanian

**Time:** 12:00 PM

**Place:** George Washington University Science and Engineering Hall, 800 22nd St NW, Washington, DC (Lehman Auditorium (SEH-B1220))

**Registration:** <https://events.vtools.ieee.org/m/448519>

**Abstract:** Celebrate **IEEE PES DEI Week** with us at this unique event showcasing the diversity of the **Smart Grid Laboratory** at GWU. Ph.D. students from **China, Bangladesh, Saudi Arabia, Egypt, Spain, Turkey, and Iran** will share their graduate school journeys and personal insights through cultural food and drink stations. Engage in meaningful conversations about the graduate experience, leadership opportunities with IEEE, and the value of diversity, equity, and inclusion in academia and beyond.

The event also features a panel discussion:

- **Prof. Tarek El-Ghazawi**, Chair - Dept of ECE, GWU: *Insights on DEI in academia and engineering.*
- **Prof. Nan Wu**, Dept of ECE, GWU - *Advancing DEI principles and promoting female participation in academia and industry.*
- **Dr. Niloofar Pourghaderi**, Postdoctoral Fellow, Smart Grid Lab: *Journey as an International Female Engineer.*
- **Prof. Payman Dehghanian**, Advisor - IEEE PES SBC GWU, Director - Smart Grid Lab: *Importance of DEI in professional organizations like IEEE PES.*

***Don't miss this opportunity to connect, learn, and celebrate global diversity in engineering!***

**Presented by:** Power Engineering Society, Industry Applications Society

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**Date:** December 9, 2024 (Monday)

**Topic:** Industrial Neuromorphic Computing: The NorthPole AI Chip and Improved Brain Health with Cogwear

**Speaker:** Arnon Amir; David Yonce

**Time:** 6:00 PM

**Place:** College Park Airport Operations Building, 1909 Corporal Frank Scott Dr, College Park, MD

**Registration:** <https://events.vtools.ieee.org/m/446410>

**Abstract:** Join the Washington Section in hosting Arnon Amir, Senior Research Scientist at IBM Research Almaden and David J. Yonce CEO of Cogwear for an evening discussing new frontiers of Neuromorphic Computing. Topics will include novel processors that mimic the structure and behavior of the human brain and wearable sensors that allow people to evaluate and improve their cognitive health. The event will begin with a welcome reception with food and drinks, followed by two technical talks on Neuromorphic Computing. Arnon Amir will virtually present an overview of new developments made by IBM's NorthPole chip, and Cogwear CEO David J. Yonce will present in person on advances in Cogwear's wearable devices that use advanced brain monitoring to provide users with helpful insights for their health. Both talks will provide concrete examples of Neuromorphic Computing in industry from novel brain-inspired computer architectures to improving users' neurological health with clinical grade monitoring.

Food and beverages will be provided prior to the talks, and parking is free for all attendees.

**Presented by:** Washington Section

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**Date:** December 9, 2024 (Monday)

**Topic:** Baltimore Section Executive Committee (ExCom) Meeting, 9 December, 2024

**Time:** 6:30 PM

**Place:**

**Registration:** <https://events.vtools.ieee.org/m/391991>

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**Abstract:** Monthly meeting of the IEEE Baltimore Section's executive committee. The meeting is open to all Section members.

This meeting will be by videoconference only. The meeting link will be sent to registrants.

**Presented by:** Baltimore Section

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**Date:** December 10, 2024 (Tuesday)

**Topic:** IEEE NOVA Section EXCOM December Meeting

**Time:** 6:00 PM

**Place:** Lubber Run Community Center, 300 N. Park PL, Arlington, VA (Beech Room)

**Registration:** <https://events.vtools.ieee.org/m/448321>

**Abstract:** This is the December meeting of the IEEE Northern Virginia Section Executive Committee.

**Presented by:** Northern Virginia Section