Pittsburgh Section

Bulletin

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Contents

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All announcements for publication in a particular month's bulletin are due to the Editor by the 20th of the previous month. The accuracy of the published material is not guaranteed. If there is any error, please bring it to the Editor's attention. The Section's web site, webinabox Pittsburgh., has recent issues of the bulletin and lots of other useful information.

- ***Chair's Corner***

Welcome to the April Edition of the Pittsburgh Bulletin.

Spring is here! Plants will be blooming soon and with that, we start ramping up toward the summer with events. Check out the bulletin to see all of the events coming up.

A yearly event that happens in April which I want to focus on is the Congressional Visits Day, or CVD. Hosted by IEEE-USA, it is an annual event that brings engineers, scientists, mathematicians, researchers, educators, and technology executives to Washington to raise visibility of and support for engineering and technology. This premier event is open to all IEEE members in the United States. CVD is an opportunity to introduce yourself, your colleagues, your company, and your profession to our elected officials. It also is a great opportunity to discuss legislation and issues that are uniquely important to IEEE members. IEEE-USA is an organizational unit of IEEE, created in 1973 to support the career and the public policy interests of IEEE's U.S. members. If you are interested in learning more about the positions that IEEE holds, please visit https://ieeeusa.org/public-policy/priorities/. We are excited to send some representatives again this year to Washington DC to talk about relevant topics to the IEEE.

This year, April 6 – 12, IEEE is hosting Education Week. It's a chance for people at all levels, pre-university, university, and professional, to take advantage of many educational opportunities provided by IEEE. Learn more here: https://educationweek.ieee.org/

Additionally, if anyone is interested in presenting any technical seminars that you feel would be of interest to your fellow members, please reach out to me and I will put you in touch with a society chair who would be happy to host you!

Jenna Price
2025 Pittsburgh Chair

jprice@ieee.org

- ***2025 IEEE Technical Symposium in Western Pennsylvania***

Dear IEEE members,

We are hosting an IEEE Technical Symposium on April 5, 2025. The tentative format for the symposium is shown below. All times are in eastern time zone.

8:00 – 8:30 - Breakfast
8:30 – 9:30 – Session 1 (3 presentations)
9:30 – 10:30 – Keynote
10: 30 am – 10:40 – Break
10:40 – 12:00 – Session 2 (4 presentations)
12:00 – 1:00 - Lunch
1:00 – 2:00 – Session 3 (3 presentations)
2:00 – 3:00 – Keynote 2
3:00 – 3:15 – Break
3:15 – 4:35 – Session 4 (4 presentations)
4:35 – 5:15 – Lightening talks (3-minute talk for each poster)
5:15 – 6:15 - Reception and Posters

The program includes 2 keynotes and 12 presentations.

Place: 3rd Floor Theater space, Information Science Building, 135 N Bellefield Ave, Pittsburgh, PA 15260
Remote option: through Zoom.
Please RSVP using the following link: https://events.vtools.ieee.org/m/471252

The symposium will include the following talks:

Keynote 1: Title: Making Autonomous Vehicles Safe

Speaker: Ragunathan "Raj" Rajkumar – (**Keynote speaker)**
Organization: Department of Electrical and Computer Engineering, Carnegie Mellon University

Keynote 2: How should we measure the digital economy?

Speaker: Avinash (Avi) Collis – (**Keynote speaker)**
Organization: Heinz College of Information Systems and Public Policy at Carnegie Mellon University

Large Teams Overshadow Individual Recognition

Speaker's Name: Lulin Yang
Organization: University of Pittsburgh

Krait: A Backdoor Attack Against Graph Prompt Tuning

Speaker's Name: Ying Song
Organization: DINS, SCI, University of Pittsburgh

Autonomous Vehicle advancements with AI integration and the role of V&V for safe deployment

Speaker's Name: Kartik Srinivasan
Organization: Torc Robotics

Power Flow Control in a Modern Grid with Sen Transformer

Speaker's Name: Kalyan K. Sen, PhD, PE, MBA, IEEE Life Fellow
Title: Fulbright Scholar, IEEE PES Distinguished Lecturer
Organization: President & CTO, Sen Engineering Solutions, Inc.

Course-Skill Atlas: A national longitudinal dataset of skills taught in US higher education curricula

Speaker's Name: Alireza Javadian Sabet
Organization: University of Pittsburgh

PPFL-RDSN: Privacy-Preserving Federated Learning-based Residual Dense Spatial Networks for Encrypted Lossy Image Reconstruction

Speaker's Name: Peilin He
Organization: DINS, University of Pittsburgh

From K-Armed Bandit Problems to Real-Time Strategy Games

Speaker's Name: Dr. Chang Liu, Professor in Computer Science
Organization: Ohio University

Political Elites in the Attention Economy: Visibility Over Civility and Credibility?

Speaker's Name: Ahana Biswas
Organization: University of Pittsburgh

Real-Time Mitigation of Non-Price Flash Loan Attacks in DeFi

Speaker's Name: Abdulrahman Alhaidari
Organization: University of Pittsburgh

Lab Dynamics Behind Paper Retraction

Speaker's Name: Yiling Lin
Organization: University of Pittsburgh, Department of Informatics and Networked Systems

Availability and Cost Analysis of Network-Attack-Resilient Byzantine Fault Tolerant Systems

Speaker's Name: Aren Alyahya
Organization: RSSLab, University of Pittsburgh

Explanations Help: Leveraging Human Capabilities to Detect Cyberattacks on Automated Vehicles

Speaker's Name: Yaohan Ding
Organization: University of Pittsburgh

Mapping Workforce Potential for the CHIPS Act: Skill Similarities, Political Realities, and U.S. Semiconductor Expansion

Speaker's Name: Arezou Farzaneh
Organization: University of Pittsburgh

• *Ultra-fast charging and ubiquitous infrastructure*

Speaker: Don Tan, PhD, E2Systems
Date: April 7, 2025
Time: Social: 6:30 PM; Presentation: 7:00 PM Eastern
Place: Information Science Building
135 N Bellefield Ave, Pittsburgh, PA 15260
3rd floor, Room: 305

RSVP: Required at https://events.vtools.ieee.org/m/477072 by April 3, 2025, 5:00 PM Eastern Time. If you are an IEEE member, please enter your membership number in the RSVP for accurate meeting reporting.

PDH: If you would like to receive PDH, please bring a printed copy of the announcement to be signed by the host. A non-member who would like to receive PDH is required to pay $10 to "IEEE Pittsburgh Section."

Organizers: IEEE Pittsburgh Section – Power Electronics Society (PELS) Chapter, Vehicular Technology Society (VTS)/Communications Society (ComSoc) Joint Chapter

Abstract: As the EV technology for the driving train entered the phase of maturity with many superior performances, significant progress in battery technologies ushed in the era of electrical vehicle proliferation. Battery-powered electric vehicles (BEV) are now in price parity with internal combustion engine (ICE) cars, even being more competitive. Many countries/regions now have aggressive mandates towards zero-emission to combat global climate change. A major remaining obstacle is the availability of ultra-fast charging required for long-haul driving and ubiquitous charging for everyday driving. We will discuss the challenges facing ultra-fast charging and available solutions coming on the horizon. We will provide a new thinking in achieving ubiquitous charging infrastructure by leveraging existing and readily-available technologies. For autonomous vehicles, wireless power charging provides a path forward. The newly-founded IEEE Transportation Electrification Council (TEC) is providing much-needed leadership in the technical space to help pushing for ubiquitous charging infrastructure on a global scale.

Speaker: Dr. Tan, a PhD from Caltech, is a member of the National Academy of Engineering, and an IEEE Fellow. He has served as Distinguished Engineer, Fellow, Chief Engineer-Power Conversion, Program Manager, Department Manager, and Center Director in a US Fortune 500 corporation. Unusually prolific as a visionary technical leader in ultra-efficient power conversion and electronic energy systems, Dr. Tan has pioneered breakthrough innovations with numerous high-impact industry firsts and record performances that received commendations from the highest level of US Government. He has developed hundreds of designs and thousands of hardware units deployed for space applications without a single on-orbit failure. His suite of world-class electronics performed flawlessly on the James Webb Space Telescope (JWST), located one million miles away, achieving world-record-breaking performances.

Dr. Tan is the IEEE Technical Activities Vice President-Elect 2025, founding President of IEEE Transportation Electrification Council, Chair of IEEE Fellow Advisory and Oversight Subcommittee, and Vice Chair of IEEE Industry Engagement Committee. Among numerous others, Don has served as Division II Director, IEEE Board of Directors; Fellow Committee Chair, IEEE PELS/PES eGrid Steering Committee Chair, PELS Long Range Planning Committee Chair, Nomination Committee Chair, PELS President, Editor-in-Chief (Founding) for *IEEE Journal of Emerging and Selected Topics in Power Electronics*, APEC (the fourth largest event in IEEE) General Chair, PELS Vice President-Operations, Guest Editor-in-Chief for *IEEE Transactions on Power Electronics* and *IEEE Transactions on Industry Applications*, Fellow Committee, PELS Vice President-Meetings, IEEE Chair for IEEE/Google Little Box Challenge (awarded $1M cash prize), and IEEE/DoD Working Group Chair, developed IEEE/ANSI standards 1515/1573. Don has delivered about 120 keynotes/invited global presentations. He has received more than $30M+ external customer funding for research and technology development. He also serves on many prestigious national and international award, review and selection committees.
Ultra-fast charging and ubiquitous infrastructure

- ***Rapid Georeferenced Geological Face Mapping for Underground Mining***

Presenter: Bryan Nagy and Rich Juchniewicz
Date: May 5, 2025
Time: 6:30 PM to 8:30 PM
Place: Mine Vision Systems, 5877 Commerce Street, Ste 118, in East Liberty, Pittsburgh PA 15206
Registration: Link: https://events.vtools.ieee.org/m/477796
Sponsor: Robotics and Automation Society
Cosponsor: Engineering In Medicine & Biology Society

Abstract: Production geologists in underground hard rock mining environments have typically used paper and colored pencils, cameras and tape measures to map and describe the geotechnical details of a working mine face for augmentation of a 3D ore body model. In most cases, this data is ingested and used to update the model several days after collection and is only very roughly accurate. These approaches and limitations result in extra personnel exposure to rockfall at the face, lost productivity, excess

wasteful material processing with resultant environmental impact, and added cost in both time and resources. We present a live demo of FaceCapture - an integrated Lidar-SLAM and Camera based system to rapidly map underground mine spaces, produce high resolution textured meshes of geological features, and georeference all collected data into a mine's native coordinate system in a matter of minutes. Now in-use globally, this system increases geologist safety by minimizing their time at the unprotected face, and overall productivity by allowing near-realtime update of the ore body model and subsequent drill and blast plans

Biographies: Bryan Nagy is the CTO for Mine Vision Systems, where he is responsible for Technology, Research and Development, as well as leading NRE robotics projects for clients. He received his B.S. in Computer Science and M.S. in Robotics from Carnegie Mellon University. Before MVS he led a team at Uber's self-driving group, which was responsible for Route Planning, Navigation and Vehicle Executive operations. And before that, he was a Commercialization Specialist at CMU's National Robotics Engineering Center, where he built robotic systems to solve challenging real-world problems in the field at large scale. He also likes to dabble in the collaboration between engineering and export control.

Rich Juchniewicz is the VP of Engineering for Mine Vision Systems, where he is responsible for overseeing and managing the engineering and production teams.

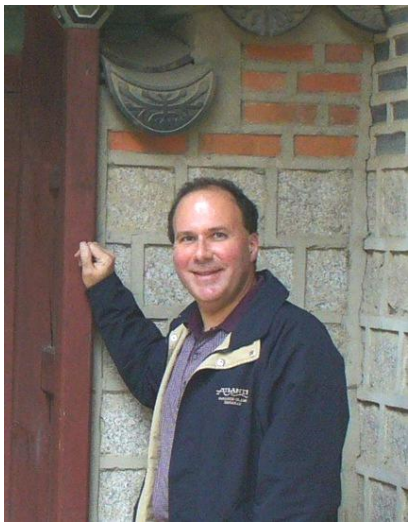
- ***IEEE Pittsburgh Section Annual History and Awards Dinner***

Date: Friday, May 16, 2025
Time: 5:00 PM: Arrival
6:00 PM: Dinner and Awards Presentations
7:00 PM: Keynote Speech
Place: Edgewood Country Club
100 Churchill Rd, Pittsburgh, PA 15235.
Phone: 412-823-7300 x12; Email: events@eccgolf.com
Cost: $30 per member; $50 member plus guest (Cash Bar is available); Life Member Affinity group will offer $10 discount to RETIRED IEEE Members, Life Members, and Student Members.
Organizer: IEEE Pittsburgh Section.
Cosponsor: Life Member Affinity group
RSVP: **Required** by May 5, 2025. Seating is limited to 50 people. Register online at: https://events.vtools.ieee.org/m/467970. Payment can be made by sending a check, payable to "IEEE Pittsburgh Section," to Mey Sen, 126 Pauline Dr., Monroeville, PA 15146. Checks should be posted May 5, 2025. Please provide the name of your guest, if any. For any question, please write to Mey at senml@ieee.org.

WHY NOT NUCLEAR?

Speaker: Joseph T. Cioletti, PE., Principal Engineer, Westinghouse Electric Company

Abstract: Commercial nuclear power has always been a controversial topic in the media, especially since Three Mile Island and Chernobyl. Over the last several decades, changes throughout the industry have provided advancements in safety and operating efficiencies, making nuclear power a safe, economically viable and sound option for our energy future. The purpose of this presentation is to lay out the facts in a reasonable manner that shows a clear-cut case for expansion of nuclear power plants in the U.S.



Biography: Joe is currently a Principal Project Manager with Westinghouse Nuclear Rotating Equipment Services. Previously, Joe was a senior engineering consultant with Westinghouse Nuclear for the Czech Republic's Temelin Nuclear Power Plant I&C Upgrade Program; a Senior Project Manager for Mott McDonald working with the Port Authority light rail and Mon Incline upgrade projects; he consulted Comcast for their power infrastructure planning; did business development for Athena Sciences; performed systems engineering for the SEPTA Positive Train Control program at Hitachi; at Westinghouse; he managed China customer I&C technical issue resolution of both Sanmen and Haiyang AP1000 nuclear plants, the first passively cooled nuclear power plants.

Joe was a catalyst for the successful startup of the high-speed maglev program for the Pittsburgh area, which lost US government support post 9/11, that same system was built and operates at up to 260 MPH between Shanghai, China and its airport. He is an experienced resource manager of over 30 professionals. Earlier in his career, he designed a vehicle borne Operator's Console drop-in LCD unit for its Automatic Train Control System that ran for decades. His interest in LCD displays led him to do R&D on some of the early TFT LCD display technologies, predecessors of today's displays.

Joe holds BS and MS degrees in EE from the University of Pittsburgh and an MBA (with honors) from Robert Morris University. He is a registered Professional Engineer (PE) in Pennsylvania and holds a PMP project management certification. He is Professional Activities (PA) Committee Chair for IEEE Pittsburgh Section. He is a member of R2 Industry Relations Committee. He has participated in many Congressional Visits Day events sponsored by IEEE-USA.

He holds 5 US Patents, some of which were marketed as motion activated LED safety light to a national bicycling distributor, selling several thousand units and received royalties.

• *IEEE Region 2 Volunteers Training*

Date: May 17, 2025
Time: 9:00 AM to 4:00 PM Eastern
Place: Information Science Building
135 N Bellefield Ave, Pittsburgh, PA 15260
3rd floor, Room: 305
RSVP: **Required** at https://events.vtools.ieee.org/m/476915 by May 10, 2025, 5:00 PM Eastern Time. Please enter your membership number in the RSVP for accurate meeting reporting.
Organizer: IEEE Pittsburgh Section

IEEE Region 2 cordially invites members who are currently active volunteers, or those thinking about becoming more engaged in the IEEE, to this upcoming training program.

The event will feature various topics to introduce the greater IEEE and assist members with how to perform the various roles. Hear from various IEEE leaders and walk-away with a keen understanding of the organization and ways you can get involved!

Lunch and Coffee will be provided
A Remote Option will be available; however, in-person is strongly encouraged

Tentative Agenda:

Session Time	Topic	Speaker	In Person or Virtual
9:30 AM	Networking/Coffee	All	In-Person
10:00AM	Introductions	Phil Gonski	In-Person
10:05 AM	Structure of IEEE Above Section	Bala Prasanna	Virtual
10:30 AM	IEEE VTools / OU Analytics	Eugene Khusid	Virtual
11:00 AM	Chapters & Affinity Groups	Kal Sen	In-Person
11:30 AM	Roadmap of MGA Training Resources for Officers (Stephen - Remote)	Stephen Torpie	Virtual
lunch	LUNCH	All	In-Person
1:00 PM	IEEE Student Chapters/Branches	Helen Winfrey	In-Person
1:30PM	Ethics	Oscar Tonnello	Virtual
2:00 PM	Young Professionals	Sam Stone	Virtual
2:30 PM	Budget/ Financial Planning	Phil Gonski	In-Person
3:00 PM	Jeopardy	Phil Gonski	In-Person
3:30 PM	Recap		In-Person

- ***IEEE Pittsburgh Section Outing to The National Museum of the US Air Force at Wright-Patterson AFB near Dayton, Ohio***

Date: Saturday, May 31, 2025
Time: 6:00 AM: Departure, Panera Bread, Miracle Mile,
4172 William Penn Hwy, Monroeville, PA 15146.
10:00 PM: Return
Cost: $40 per person
RSVP: **Required at** https://events.vtools.ieee.org/m/456469**. These seats are available on a first-come-first-serve basis. If interested, please send an email to senkk@ieee.org and send your check in the amount of $40 per person, payable to "IEEE Pittsburgh Section" to the following address: Mey Sen, 126 Pauline Drive, Monroeville, PA 15146.**

Organizers: IEEE Pittsburgh Section

We are organizing an outing to *The National Museum of the US Air Force* at Wright-Patterson AFB near Dayton, Ohio**.** The event is open to the IEEE Pittsburgh Section's members and their guests and limited to the capacity (34 people) of the bus on a first-come-first-serve basis. The event is highly subsidized by the Section. If interested, please register at the vtools weblink above.

The museum, which is free to the public, is the world's largest military aviation museum. Here are just a few of the items on view: X-15 rocket plane, U2 and SR-71 spy planes, B-52 B-29 B17 and XB-70 bombers, F-22 F-111 P-51 fighters, Apollo Capsule, Soyuz capsule, as well as the Second Wright Flyer, and ICBMs, cruise missiles, strange prototypes and all of the Presidential Air Force Ones (except Reagan's) etc. All exhibits are located indoors. The museum features more than 350 aerospace vehicles and missiles and thousands of artifacts amid more than 19 acres of indoor exhibit space. The museum opened to the public on May 16, 1923 in Dayton Ohio and has now evolved to its fourth location which includes four buildings, a Missile Gallery, an Air Park and a Memorial Park. For further information, you may click on the following weblink at: https://www.nationalmuseum.af.mil.

2025 Calendar – Meetings of IEEE Pittsburgh Section

	Jan	Feb	Mar	Apr	May	June	July	August	Sept	Oct	Nov	Dec
Executive Committee (AdCom)	Virtual	Virtual	Virtual	Mt. Lebanon library	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Section		22 Robot Car (canceled)	6 Meetings tutorial	1 Science Fair	16-Dinner; 17 Training 31-Museum		20 Picnic	22 Baseball				
Communi-cations/VT		6 Realizing AI 12 Prudentia		5 Symposium 7 Charging								
Computer		20 AI Agentic										
EMBS			13 Careers, Med		5 Geo-mapping							
EMCS												
Power Electronics				7 Charging								
PES/IAS												
Magnetics												
Nanotech-nology												
Robotics					5 Geo-mapping							
SPS/CSS												
EPS/ED												
Education												
Social Impl Technology												
Upper Mon		10 Secure 6G	10 Agile AI/ML									
Women in Eng'ing												
Young Pros												
Life Mem-bers												
PACE												
Student Act												

* This meeting was not published in the Pittsburgh Bulletin