# Welcome

## to

# Boston!

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IEEE

**Boston Tech Conference and Expo** **April 12, 2024, 8 am**

**Speaker Line up**

7:30 am Boston Style Breakfast Buffet – All day beverage service

8:00 am IEEE Announcements

8:05 am Introduction of all the speakers

8:10 am Kickoff Mayor

8:25 am Yuri Quintana, Chief, Division of Clinical Informatics, Beth Israel Harvard Medical

8:50 am Clark Wiedetz Chief Sales Officer at GreenStruxure, 'Green Energy Case Studies'.

9:15 am Pranav Chaudhary Senior Software Engineer at Amazon

9:40 am Ernesto Vega Janica Senior Fire Protection Engineer Princeton Plasma Physics Laboratory

10:05 am Dr. Torbjørn Lembke, Chief Maglev Scientist, MagLev Aero

10:30 am Ding Han Clean Energy Professional Leading Digital Transformation

10:55 am Abir Chermiti, CEO Coach

11:20 am Tim Callahan, Engineering Manager, Eversource, 'Generation/Load Decoupling Standard'

11:45 am Marie Tupaj and Peter Shea How Schools and Colleges are Adopting AI & ML- STEM Classroom

12:10 pm Special Guest Prize Pack Giveaway

12:15 pm Lunch The Cape Cod Buffet

12:45 pm Bob Frankston, IEEE Fellow Distinguished Lecturer, IEEE Consumer Technology Society, 'Connectivity'

1:10 pm Frank B. DeFina, Business Development Manager Vaisala 'Extreme Weather in the Urban Environment'

1:35 pm Joseph Redmond, PE, Electrical Team Leader at B2Q

2:00 pm Adam Gutbezahl, associate at Ruberto, Israel & Weiner, 'Balancing AI Benefits & Workplace Challenges.'

2:25 pm Mahdi Haghzadeh, PhD, RF Engineering, Founder, Cognitave, Inc., Radar for Advanced Vehicular Systems

2:50 pm Maria Palombini, Global Practice Leader, Healthcare & Life Sciences

3:15 pm Mansoor Khan, Virtual Power Plants, Land Heart Energy, 'From the Big Apple to the Green Apple'.

3:40 pm Saurav Bhattacharya, Researcher, Engineer, Author, Speaker, Founder, Mentor in Digital Authentication Microsoft

4:05 pm Samuel Li, Building Digital Twin Metaverse Cities-Accelerating Urban Digital Transformation thru Emerging Tech

4:30 pm Phil Teague, 'DC is the Future', CEO and Founder Rectify Solar

4:55 pm Salute to the Speakers

5:00 pm Special Guest – Happy Hour - Networking

**Washington Conference Room #2**

9:00 am Astha Kukreja, 'Robotics Autonomous Driving', Technical Lead Systems Engineer

9:25 am Saad Thabit, Founder and Principal DRF Engineering Services

9:50 am Xinsheng Lou, Ph D, ISA Fellow, Director of ISA POWID, AI

10:15 am Anthony Romano, Dr. Hedge Fund

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10:40 am Jeff Steffensen, Commissioning Market Leader, Affiliated Engineers

11:05 am Youcef Abdelli, Founder and CEO ZT1 Technology, Power Electronics dominate Sustainability Transition

11:30 am Phil Teague, 'DC is the Future', CEO and Founder Rectify Solar

11:55 am Olaoluwa Adeleke, Investment Banking, Private Equity and Venture Capital

12:55 pm Dr. Raj Vayyavur, Director Enterprise Architecture Data Governance at Public Consulting Group

1:20 pm Laiz Souto, Senior Research Associate Future Energy Networks, University of Bristol

4:55 pm Salute to the Speakers

5:00 pm Special Guest – Happy Hour - Networking

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**8:25 am Enhancing AI-Assisted Home Health Monitoring: Integrating IEEE Standards Ethical Design Principles**

The advent of AI-powered smart homes has unlocked new possibilities for remote health monitoring, particularly for individuals with chronic diseases. InfoSAGE, a home health monitoring system developed by the Division of Clinical Informatics at BIDMC, exemplifies this potential by leveraging AI for medication and symptom management. This presentation explores the integration of IEEE standards on wearable computing (IEEE 802.15.6), security (IEEE P2933), and human factors (IEEE 2089) to enhance the usability, reliability, and safety of such systems. The incorporation of voice interaction, empathetic intelligent agents, and digital phenotyping technologies based on machine learning enables InfoSAGE to detect changes in health status, including mental health, and provide personalized support. A case example demonstrating a voice interface for medication information illustrates the practical application of these technologies. However, as AI permeates domestic spaces, ethical challenges emerge that necessitate adherence to IEEE's mission of advancing technology for the benefit of humanity. Designing AI systems for smart homes requires prioritizing qualities such as empathy, trust, patience, and benevolence to ensure alignment with human values. By framing the development of AI-assisted home health monitoring within the context of IEEE's ethical standards, this presentation underscores the importance of responsible innovation. Attendees will gain insights into the technical advancements, human factors considerations, and ethical design principles necessary to create AI-powered smart homes that genuinely improve the lives of those with chronic conditions. The presentation aims to foster collaboration between the *IEEE Computer Society and the Systems, Man, and Cybernetics Society* in developing standards and best practices for the ethical deployment of AI in home health monitoring.

**Yuri Quintana**, Ph.D., is a global leader in developing and evaluating digital health systems. He is Chief of the Division of Clinical Informatics at Beth Israel Lahey Health and Assistant Professor of Medicine at Harvard Medical School, Harvard University. His research is focused on learning networks and clinical care collaboration platforms that empower patients, families, and health professionals. He leads the DCI Network (https://www.dcinetwork.org), which brings together national-level leaders to work on complex health problems requiring collaborations between institutions, government, and the private sector. He is developing InfoSAGE, a mobile app for home-based coordination for medication and symptom management. He created Alicanto Cloud, an online platform for learning and collaboration used by health professionals at Harvard-affiliated hospitals such as Beth Israel Deaconess Medical Cancer to disseminate best healthcare practices and virtual consultations. Alicanto is used at the Massachusetts Institute of Technology's JWEL Center for sharing best practices in education. As a Senior Scientist at Homewood Research Institute in Canada, he has developed new methods to evaluate digital mental health systems using evidence-based approaches. Previously, at St. Jude Children's Research Hospital, he developed Cure4Kids, a global pediatric cancer learning network used by thousands of health professionals, POND4Kids, an international cancer registry, and Cure4Kids for Kids, a mobile app promoting healthy lifestyles for children. Quintana was a principal investigator in the Canadian HealNet Research Network. He has held high-tech positions at IBM and Watcom. Quintana obtained his engineering degrees from the University of Waterloo in Electrical and Computer Engineering and Systems Design Engineering.

https://www.linkedin.com/in/yuriquintana/

**8:50 am Clark Wiedetz Chief Sales Officer at GreenStruxure, 'Green Energy Case Studies'.**

GreenStruxure provides clean onsite electricity to a variety of different clients and market segments in the US. Greenstruxure acts as a second utility for clients displacing a percentage of their electric load behind the meter. Clark's organization started a little over three years ago as a joint venture of Schneider Electric and are delivering clean electricity to multiple locations for Bimbo Bakeries, Montgomery County, MD, and other clients who I will speak about during the Program. Each of our systems utilizes multiple distributed generation assets dispatched at the proper time to maximize their benefits – cost avoidance, sustainability, resiliency, etc.

**Clark Wiedetz** mission is to help drive onsite and distributed generation throughout the US by working with the industry leader in renewable energy microgrids, Schneider Electric. This is a time where energy needs to be more reliable and cost effective combined with the environmental need to reduce carbon in the atmosphere. However, organizations want to spend their money on their core business and when that is not energy, they need to look at other organizations to invest in their business. Thus, the emergence of GreenStruxure - a joint venture between Schneider Electric and impact investor Huck Capital. Our desire to invest in our client's businesses by providing and operating the energy assets for our clients. His job is to help explain the value of having his energy company and his partners invest in his client's business. Executive business leader in all aspects of the Clean Energy and Water Solutions business. Experience with a wide range of clients that include Cities/ Counties, Higher-Ed, K-12 schools, Healthcare and the Federal Government in the public sector and industrial and commercial companies in the private sector. Experienced business leader in sales, operations and strategy for new business model start up.

https://www.linkedin.com/in/clark-wiedetz/

**9:15 am Pranav Chaudhary Senior Software Engineer at Amazon**

Data has become an integral component of the daily lives of software developers, machine learning engineers, and machine learning scientists. This data can take the form of both non-critical and critical information. Critical data holds a significance akin to credit card information in the payment sector, underscoring the need to prioritize its safety and security. Given the substantial volume of data being generated and the escalating demand for various purposes, it is our responsibility to guarantee the security of critical data and ensure convenient access for activities such as application creation, model training, and debugging. Various threats exist that can compromise critical data, such as storing it in insecure locations, accessing it through unsecured applications, utilizing it for application development and testing without subsequent deletion, or using insecure protocols for access. These critical data sets can be safeguarded through several measures, including implementing a single point of deletion, watermarking audio, and video data, conducting thorough scans of storage in both cloud and on-premises environments to apply appropriate security measures, implementing security controls at service and presentation layers, and encrypting data in storage and at rest. Throughout the years, I have acquired knowledge and developed applications and security controls to ensure the safety of critical data. In this conference I will focus on discussing strategies for securing critical data and ensuring safe access for development purposes.

**Pranav Chaudhary**

As a Full Stack Engineer with over 12 years of experience, I have developed expertise in a wide range of technologies including Java, React JS, TypeScript, Python, Spring, Android, CDK, AWS, SQL, NoSQL and more. Throughout my career, I have worked with both B2B and B2C organizations to develop software applications that have impacted millions of customers worldwide. My passion for creating highly scalable and distributed systems using AWS Cloud has driven me to design and improve these applications. I have worked on creating highly distributed and scalable systems to secure customer hyper critical information. These systems will detect any security risk and create adequate alarm and take appropriate action to isolate the data to avoid any security incident. To provide a secure way to access this critical information, I have worked on creating client applications with various security controls. I have also successfully migrated monolithic systems to microservices to enhance the development and deployment experience while reducing time to production. I have created these applications to serve thousands of TPS and process trillions of messages daily. In addition to my technical skills, I am dedicated to mentoring my peers, junior engineers, and interns to help them grow professionally. I am also a Senior Member of IEEE and Judge at various esteemed organizations.

https://www.linkedin.com/in/chaudharypranav/

**9:40 am Ernesto Vega Janica Sr. Fire Prot. Engineer Princeton Plasma Physics Laboratory, 'Plasma/Fusion Energy AI'**

## Title: **Powering Possibilities: Intro to Plasma/Fusion Energy and AI.**

At Princeton Plasma Physics Lab (PPPL), We develop scientific knowledge and advanced engineering to enable fusion to power the U.S. and the world, we advance the science of nanoscale fabrication and sustainable manufacturing for technologies of tomorrow, and We further the development of the scientific understanding of the plasma universe from laboratory to astrophysical scales. To accomplish such amazing research, we use sophisticated tools; Our engineers create state-of-the-art components and design intricate electrical and mechanical systems. And on the verge of all current innovation, our teams are mastering the art of AI in a range of applications including fusion energy, nanoscale fabrication, quantum materials and devices, and sustainability science. This presentation also highlights some uses of AI and Business Analytics by our Fire Protection and Facilities Team.

Princeton University manages the Laboratory for the U.S. Department of Energy's Office of Science, which is the nation's single largest supporter of basic research in the physical sciences. Feel the heat at https://energy.gov/science and https://www.pppl.gov.

**Ernesto Vega Janica**

Senior Fire Protection Engineer
Ernesto is an IEEE Senior Member, and a Senior Electrical/Fire Protection Engineer with over 20 years of experience. Prior to joining PPPL as a Fire Protection Engineer, Ernesto worked for the IEEE Standards Association as a Senior Product Manager. Ernesto has been recognized as the 2017 Fire Protection Engineer of the Year by the Society of Fire Protection Engineers (SFPE), New Jersey Chapter; and awarded the 2011 Tyco Patent Prize as the author of a patent application on visual fire alarm notification devices. Mr. Vega Janica is the author of multiple technical papers and international presentations in the engineering fields, as well as in applications of optimization models. Vega Janica, graduate alumni of the University of Maryland, is also an enthusiast of mathematics, indigenous cultures, and their STEM wisdom. He is also an instructor of international Standards and the author of a math textbook for kids using Native Tribes numerical systems. Ernesto is involved in global humanitarian and STEM efforts.

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**10:05 am Dr. Torbjörn Lembke Chief Maglev Scientist at MagLev Aero**

Electric propulsion, whether powered by batteries or hydrogen fuel cells, stands out as the primary solution to combat climate change. While the automotive industry is swiftly adapting, the aviation sector faces additional hurdles due to the weight of batteries. Hence, electric flight demands highly efficient propulsion systems that carefully address all energy loss aspects. At MagLev Aero we believe that a successful transition to electrification goes via new designs, many of which cannot be achieved with traditional components like roller bearings. Magnetic levitation is frictionless and opens for new propeller and rotor designs. It can also be conveniently integrated with the electric motor. The presentation will cover the development of a new magnetically levitated rotor structure, optimized using AI and wirelessly controlled as part of an Internet of Things network. Finally, some examples of completely new EVTOL aircraft concepts will be presented, which can only be realized using this new technology.

**Torbjörn Lembke** has a PhD in electrical engineering, and a master's degree in engineering physics, with an additional exam in project management. During his previous projects he improved the levitation and propulsion system of the HTT Hyperloop, and before that he worked with several green tech projects like power trains for wave power, magnetic bearings for hydro power, a high-speed generator for an ORC, which is a kind of turbine using the organic Rankine cycle to convert low temperature waste heat into electricity. Notably, Dr. Lembke has been an active member of IEEE Magnetics, where he founded the Swedish Magnetics Chapter and served as its chairman for a decade, fostering invaluable connections within the magnetic research community.

https://www.linkedin.com/in/torbj%C3%B6rn-lembke-a469753a/

**10:30 am Ding Han Clean Energy Professional Leading Digital Transformation**

As we see more customer EV fleets, customer PV and batteries, greater digital capabilities in buildings, and more digitized customer systems, demand is becoming more flexible in how it is used by the customer and how it could be used by the utility. With the tide of AI's impact on supply and demand, it creates both risks and opportunities to rethink how we look at demand, both from utility side and from the participants/prosumer side. What makes it flexible, how does it benefit either party, or what metrics can be measured against performance? IEEE needs to take an active role in this conversation across utilities and customers.

**Ding Han**

Ding brings us more than 15 years of energy industry experience in utility scale renewable energy, energy storage, system integration, and behind-the-meter microgrid design and application. At Schneider Electric he supports strategic customers in designing Energy as a Service microgrid solutions (100+ MG). Ding was involved in the IEEE technical review committee in region 10 China as BESS industry consultant, drafting and balloting of publication "IEEE P2030.2.1". He also joined the IEEE PES region 1 Smart Buildings and Customer Systems (SBCS) Committee. Ding holds a PhD in MEMS and a MSc in Electrical Engineering from Louisiana Tech University, and a BSc in Automation from Wuhan University of Technology.

https://www.linkedin.com/in/dinghan/

**10:55 am Abir Chermiti, CEO Coach**

**Abir Chermiti**

Certified Harvard Business Strategist, Entrepreneurship & Business Coach, and an Award-winning Women in Tech Ally. A Software Engineer who had a large experience working with international workplaces and organizations who decided to turn her passion into a business & started Elle Media Empire; a Media and Business Consulting firm where she helps business from startup to scale. Abir is a huge supporter of women in tech and a true believer that women can do more if they are given the space to build and create. She started her own business in the middle of a global pandemic and launched EllePod, a podcast series that features stories of women in tech and business to support women and young individuals in their career path and empower them to embrace their digital and entrepreneurial Potential.

https://www.linkedin.com/in/abirchermiti/

**11:20 am Tim Callahan, Engineering Manager, Eversource, 'Generation/Load Decoupling Standard'**

Tim Callahan, Lead Engineer, P&C Special Projects Support Group will present on the new Eversource Generation/Load Decoupling Standard. This standard will enable Eversource Distributed Generation Customers to have more interconnection flexibility and situational awareness. Tim will also discuss future building block enhancements in the standard such as POI reclosers, 32R import/export functionality, Battery Scheduling and future DERMS integration.

**Tim Callahan**

Tim received a Bachelor of Science Degree in Electrical Engineering and a Master of Business Administration Degree from the University of Hartford. Tim has over thirty years' experience in the electric utility industry and is an active member of the IEEE PES Connecticut Chapter. Tim's current position with Eversource Energy is Lead Engineer, P&C Special Projects Support Group. Tim's specific focus is providing Oversight of contractor Owners Engineering resources that support 3 state Distributed Energy Resource (DER) interconnections, and Grid Modernization projects.

https://www.linkedin.com/in/tim-callahan-a9147b205/

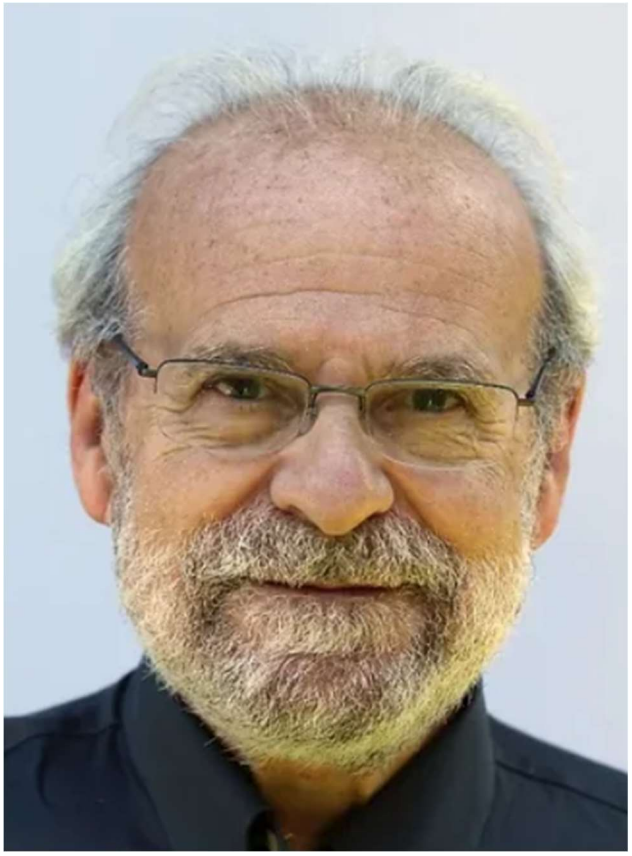
**11:45 a.m. Marie Tupaj/Peter Shea How Schools and Colleges are Adopting AI & ML- STEM Classroom**

Since the release of ChatGPT in November 2022, the use of AI in education has exploded with new opportunities and challenges. In this talk, we discuss how AI and machine learning is viewed and utilized by students and professors. The ways that AI supports learning in STEM classrooms and some capabilities of AI and machine learning to solve undergraduate biology, physics, and engineering problems will be shown. Lastly, challenges and how AI can be integrated on campus in the future will be presented.

**Marie Tupaj, Ph.D**., is the dean of the STEM division at Middlesex Community College. She has spent fifteen years working in higher education as a scientist, engineering professor, and administrator. At Middlesex, Marie works on adopting new STEM programs and technologies into the division, including AI programming. She has advised many students on courses and majors and regularly advocates for women in science. Her research interests lie in the field of biomaterials and regenerative medicine where she has authored several peer reviewed publications and has served as a peer reviewer for journals in this field, including Biomaterials, Scientific Reports, and Advanced Functional Materials. Marie received a B.S. in electrical engineering and a Ph.D. in biomedical engineering from Tufts University. She is a senior member of the Institute of Electrical and Electronics Engineers (IEEE), a professional member of IEEE-Eta Kappa Nu (HKN), and the 2021 chair of IEEE Boston.

**Peter Shea, M.A.** is a learning professional with extensive experience as an instructional designer, as a teacher at college writing and as a director of professional development in education. He began presenting in 2019 on the educational implications of artificial intelligence. He is co-editor of the book *Transforming Digital Learning and Assessment: A Guide to Available and Emerging Practices and Building Institutional Consensus (*Stylus Publishing, 2021)

**12:45 pm Bob Frankston, IEEE Fellow and Distinguished Lecturer, IEEE Consumer Technology Society**



That we need to think about connectivity as part of basic systems design and get past the legacy concept of networking as a service.

**Bob Frankston**

Applied philosopher who sees the Internet's End-to-End principle as one of the interesting concepts.

https://www.linkedin.com/in/bobfrankston/

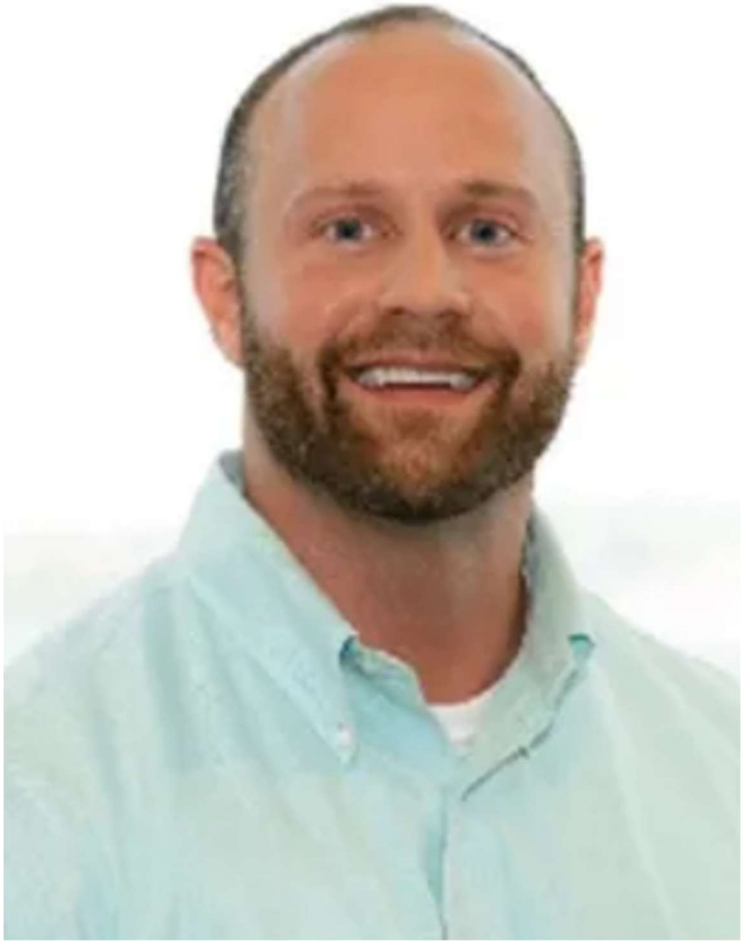
**1:10 pm Frank B. DeFina, BD Manager 'Extreme Weather in the Urban Environment', Vaisala**

In this talk, we will examine the extreme weather events facing the USA in 2023. Differences will be explored between weather observations, nowcasting, and forecasting. We will review examples of weather forecasting for military operations and how these techniques can better prepare city managers for extreme weather events. Finally, we will analyze case studies from lightning detection to building management.

**Frank DeFina** has been in the weather industry for 16 years. Frank has a BSBA degree from the University of Pittsburgh and more recently, completed the weather forecasting certification from Penn State University. He completed weather forecasting school in the U.S. Air Force and presented over 100 weather forecasts to aircrews in Kuwait during Operation Iraqi Freedom. Currently, Frank works as an Area Head/ Business Manager for Vaisala – North America, a world leader in environmental sensors and data solutions. His team focuses on weather solutions for mines, smart cities, EPAs, power companies and maritime operations.

https://www.linkedin.com/in/frank-b-defina-05930a22/

**1:35 pm Joseph Redmond, PE, Electrical Team Leader at B2Q**



**Joey Redmond**

TECH CONFERENCE TOPIC – POWER DISTRIBUTION UPGRADES FOR ELECTRIFICATION

A major component of decarbonization and the push for net zero greenhouse emissions, is the necessity for electrification of building HVAC systems. To achieve these goals, commercial and industrial facilities will need to upsize their incoming electrical service to accommodate new equipment power draw. But this has a domino effect, in that the local utility companies will need to upsize their service stations, and the grid regulators will need to do the same for the transmission system. In this tech talk, we will explore energy efficiency methods, localized distributed generation (DG) such as microgrids, utility planning, and code implications for new service entrances.

Mr. Redmond is a PE Licensed electrical engineer with over twelve (12) years of experience in the energy and utilities sector. Possessing a strong foundation in commercial, industrial, and institutional design, excelling in areas such as central utility plant design, process utility design, HVAC design, and infrastructure replacement/upgrade projects. Employment history includes roles at Gemma Power Systems, A/Z Corp., SmithGroup, and Yale University, demonstrating expertise in electrical engineering, project leadership, and compliance with industry standards and regulations. In 2023, joined B2Q Associates as their Electrical Team Leader, a firm that specializes in MEP design, energy efficiency, decarbonization, and utility infrastructure projects for commercial, higher education, industrial, healthcare, and utility clients. Mr. Redmond has a BS in Electrical Power Engineering, from the Rensselaer Polytechnic Institute, 2011.

https://www.linkedin.com/in/joey-redmond-p-e-58a59413/

**2:00 pm Adam Gutbezahl, associate at Ruberto, Israel & Weiner, 'Balancing AI Benefits & Workplace Challenges.'**

Once the product of movies and video games, artificial intelligence ("AI") has fast become an ever-present part of our personal and professional lives. As with the advent of any new technology, questions arise for business owners and employers. Should I use this technology? If so, how, or when? Is there a downside? This presentation delves into the current (and potential future) landscape of AI in the workplace. Through this session, participants will gain an understanding of the opportunities and obstacles tied to AI implementation, understand current best practices, and determine what next steps (if any) to take regarding this ever-changing landscape.

*Please know that the information and communications provided through this presentation does not, and is not intended to, constitute legal advice and is for general informational purposes only. Participants should contact their attorney to obtain advice with respect to any particular legal matter and should not act, refrain from acting, or rely based on information through this presentation without first seeking legal advice from counsel in the relevant jurisdiction.*

**Adam Gutbezahl is** an attorney at the Boston-based law firm, Ruberto, Israel & Weiner, P.C., and is a member of the firm's Litigation Department and Commercial Real Estate and Employment Law Groups. Adam has spoken to various associations and organizations about the legal implications of using artificial intelligence. As a litigator, Adam has represented clients in trials, administrative hearings, and mediations with a proven track record of success. Adam also represents and advises individuals and businesses on best practices to avoid litigation. His areas of practice cover a wide variety of matters, including complex commercial, employment, land use, and real estate disputes. Adam is a member of multiple associations and organizations, including the Boston Bar Association, the Massachusetts Real Estate Bar Association, the Society for Human Resource Management, MetroWest HRMA, and the Northeast HR Association. He also sits on the Public Policy Committee of the MetroWest Chamber of Commerce and is a member of the Board of Directors for the Performing Arts Center of MetroWest.

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**2:25 pm Mahdi Haghzadeh, PhD, Maxdi RF Engineering, Founder Radar Advanced Vehicular Systems**

Micro-Electronics Computer-Aided Design using Open Source, Free of Charge Software
Mahdi Haghzadeh, PhD
Electronics Department at Cognitave Inc

This talk presents microelectronics design engineering professionals in semiconductor and electronics industries modern design-workflow tools for simulation, modeling, and fabrication. A complete set of computer-aided micro-electronics design automation (MEDA) tools presented in this talk that are available open source without paid-for licenses. The tools are considered industry open-source standards and used across the globe for design, modeling, manufacturing, and testing of electronic and computing devices that go into medium to ultra-high complexity systems in consumer electronics, warfare, defense, and aerospace industries.

**Mahdi Haghzadeh, PhD** is CEO and Founder at small business Maxdi Inc and technology Startup Cognitave Inc. His previous industry experience was Senior RF Engineer at SI2 Technologies. Dr. Haghzadeh has over one decade of experience in computational simulation & modeling, and fabrication & testing of RF/MW devices and systems. Dr. Haghzadeh was an Application Engineer/Software Sales Specialist for electronic design automation at Keysight Technologies (originally EEs of Inc; acquired by Hewlett-Packard in 1993). Dr. Haghzadeh led pioneering research in academia for over five years on novel nano-composite based reconfigurable perovskite material and their applications in electronically scanned phased arrays at Raytheon-UMass Lowell Research Institute (RURI). Dr. Haghzadeh is recipient of two issued US patents (US-9809720 and US-15804306) and two awarded R&D awards (2016FLEX and IDTechEx's 2015). He has published peer reviewed 1 article in Journal of Applied Physics and IEEE Microwave Theory and Techniques Society (IEEE-MTTS). Dr. Haghzadeh is a U.S. citizen.

https://www.linkedin.com/in/maxdi/

**2:50 pm Maria Palombini, Global Practice Leader, Healthcare & Life Sciences, 'AI in mental health'**

**Impacts of AI in Digital Mental Health - The Pitfalls and Opportunities**

Mental health disorders are growing at an alarming level across the globe combined with a diminishing rate of social and licensed caregivers to support this need. The turn to digital mental health tools as an assistive technology to support the needs of this highly vulnerable population of patients can offer great opportunity but also comes at a highly concerning cost. This session will address the different use cases of AI in assistive digital technologies for mental health, the need for robust data governance frameworks and the related guardrails for privacy, security, and validation to provide patients the best potential for safety and quality in the use of these tools.

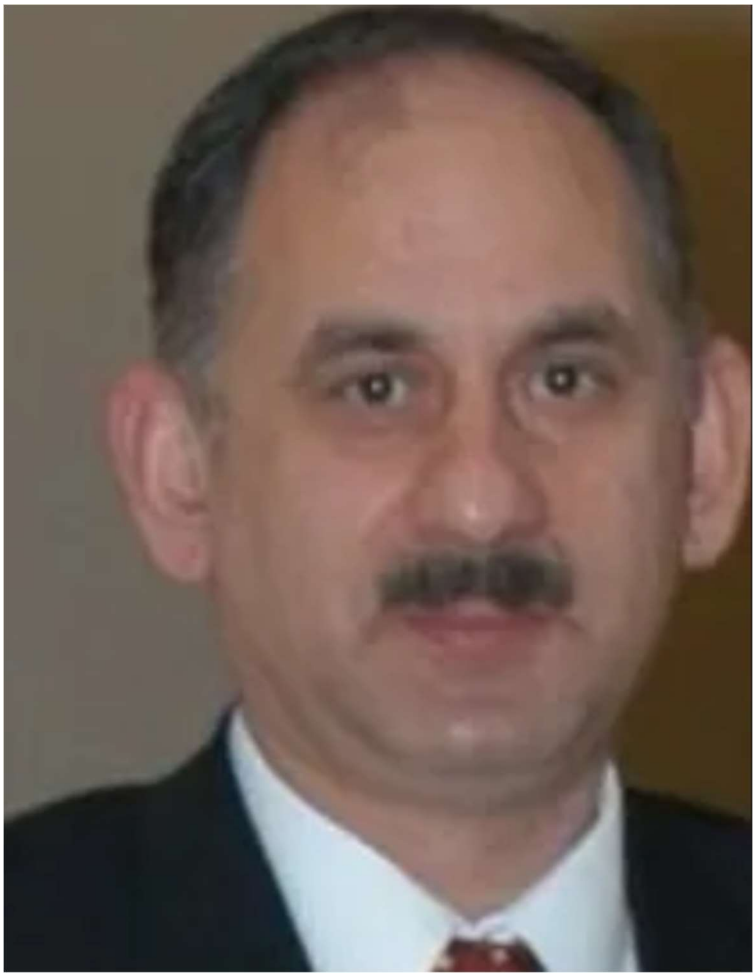
**Maria Palombini, MBA**

Director, Healthcare & Life Sciences Global Practice Lead, IEEE Standards Association

As the practice leader, Maria is focused on engaging and leading a global community of multi-disciplinary stakeholders to openly collaborate and develop solutions to enable trust in and validation of breakthrough technologies/applications that will enable sustainable equitable access to quality care, privacy, and protection for ALL individuals. Working with volunteer experts to develop frameworks for technical standards to address security, privacy, validation, compatibility, feasibility, and accessibility of digital technologies in telehealth, decentralized clinical trials, digital mental health therapeutics, food sustainability and security, and precision therapeutics. Maria is an entrepreneur having founded various companies including DisruptiveRx™ Media, the first information company to explain viable use cases of emerging digital technologies such as blockchain/DLTs, AI, etc to address inefficiencies in the bio/pharma value chain. Maria's professional highlights include global brand and communications director for one of the world's largest mining investment platforms in Africa; and bringing innovative communication and information products to global markets and various industries including financial, bio/pharmaceutical, agriculture, natural resources, and telecommunications. Maria currently holds an MBA from the Rutgers Graduate School of Business and a BA and BS from Rutgers College at Rutgers University, the State University of New Jersey

https://www.linkedin.com/in/mpalombini/

**3:15 pm Mansoor Khan, Virtual Power Plants, Land Heart Energy, 'The Big Apple to the Green Apple'**



**THE BIG APPLE to THE GREEN APPLE: Converting a Metropolitan area to an Eco-Friendly Sustainable City**

Considering the impact of CO2 on the environment there is a push to accelerate the transition from fossil fuels to renewable energy generation. Dr Khan is going to explore the use of new, innovative and off the shelf technologies to explore transforming a metropolitan area into an eco-friendly sustainable city.

**Dr. Mansoor Khan**, (Land Heart Energy) has worked in the renewables field for over 30 years. He has worked on development of wind turbine technology to successfully develop utility scale wind and solar projects. In addition, he is also working on development of community solar projects and evaluation and integration of new and innovative technologies to help expedite energy transition. He is also working on development of Virtual Power Plants technology as well as Microgrids.

https://www.linkedin.com/in/mansoor-khan-13710225/

**3:40 pm Kanu Kalola Solar Energy NEC 292 updates.**

**Kanu Kalola**

Kanu is Founder & Chief Executive Officer, Solar Zone. He is dedicated to quality customer service and the improvement of Technology and Environmentally friendly solutions to the Technology and Energy hurdles that face us globally. With a background in Software Development, Embedded Systems, Communications, and energy production. With current projects on three continents, I'm uniquely qualified to overcome the hurdles that many customers assume stand in the way of developing Technology Solutions Tailored to their requirements. Mr. Kalola is involved with various industries including Agritech, Embedded Product Development, Solar Photovoltaics, Integrated Vertical Farming & Agriculture, Cryptocurrency Investment Strategies, globally integrated software and business development and online and retail merchandise sales.

https://www.linkedin.com/in/kanukalola/

**4:05 pm Samuel Li, Building Digital Twin Metaverse Cities-Accelerating Urban Digital Transformation through Emerging Technologies.**

Dr **Samuel Li** has over ten years of high education teaching experience and 23+ years of intensive management and leadership experiences in global ICT multinationals, including Nortel, Nokia, Motorola, BTI and Linaro in Canada, USA, and Asia; and he is credited with successful technology management for the world's first touchscreen Linux smartphone: Motorola A760, the global first Nokia mobile Internet applications: MIA, and pioneering Android mobile platform: SavajeOS. Professor Li is also actively engaging in academic research and teaching roles at Anna Maria College, University Canada West, University of Waterloo, University of Toronto, Hangzhou Dianzi University, and Zhejiang University of Technology; and he holds a MBA degree from University of Toronto, Global Executive MBA program, a Master's degree of System Design Engineering, and a Bachelor' degree in Computer Science. He is currently pursuing a PhD in Management Sciences from University of Waterloo, focusing on advanced study in the Internet platform sharing economy,

**Samuel Li,** Senior IT Consultant and Business Professor, Anhub InfoTech Consulting Global

https://www.linkedin.com/in/samuel-li-027a842/

**4:30 pm Saurav Bhattacharya, Researcher, Engineer, Author, Speaker, Founder, Mentor, and expert in Digital Authentication for Microsoft**

**Saurav Bhattacharya**

Elevating Cybersecurity Beyond Secure: Venturing beyond the foundational adherence to regulations and best practices, achieving true cybersecurity resilience demands the cultivation of a "beyond secure" mindset. This progressive philosophy champions proactive vigilance, envisioning and mitigating potential vulnerabilities before they become exploitable gateways for adversaries. It's a strategic pivot from reactive measures to preemptive security innovation, embedding anticipatory defenses into the lifecycle of every product, process, and policy. This mindset doesn't just aim to meet the current security standards but strives to redefine them, making security an intrinsic, dynamic aspect of organizational culture. Embracing this approach empowers entities to not just keep pace with, but outmaneuver, the constantly advancing threats, ensuring a state of perpetual readiness and resilience against the unforeseen challenges of tomorrow.

Personal Bio: Saurav, born on November 4th, 1989, in India, has traversed an illustrious path from being a bright student at IIT Kharagpur to becoming a cornerstone in the cybersecurity domain at Microsoft, USA. His expertise, particularly in Authentication, underpins his role as a founder of Supercharge Plus, a cybersecurity firm, and a nonprofit organization dedicated to cross-disciplinary research. Beyond his professional endeavors, Saurav is a passionate author and researcher, aspiring to leave an indelible mark on mankind through his writings. Settled in Seattle with his high school sweetheart and their cherished Frenchie, he indulges in reading, writing, and spirituality—endeavors that reflect his deep, introspective nature. Saurav's life is a testament to the belief that continuous growth and a commitment to making a meaningful impact can pave the way for achieving one's dreams.

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**Washington Conference Room #2**

**9:00 am Astha Kukreja, 'Robotics Autonomous Driving', Technical Lead Systems Engineer**

While autonomous vehicles have demonstrably enhanced road safety, concerns regarding their reliability remain. Testing these vehicles presents a significant challenge compared to conventional cars, necessitating a paradigm shift in testing methodologies. Join this session to understand techniques to answer three critical questions, what to test, how to test and when to stop to ensure vehicle performance is determined for real-world complexity. How do we know we are improving our process? Monitoring key performance metrics is imperative to evaluate the progress of both the testing process and software.

**Astha Kukreja**

Ms. Kukreja is a Staff Systems Engineer currently serving as the Technical Lead in the Systems Engineering team at Latitude AI. Her work focuses on developing key metrics and behavior requirements for autonomous vehicles. With over 10 years of industry experience, she has held various positions, including technical lead, senior software engineer, and senior control engineer, at tech companies such as Argo AI, Optimus Ride, Rethink Robotics, and Cummins, Inc. Astha earned her MS in Mechanical Engineering from the University of Michigan with a focus on Control Systems Theory. Beyond her professional pursuits, she is passionate about sharing knowledge in the realm of robotics and autonomous driving. This passion has led to her contributing articles to publications, showcasing her dedication to fostering understanding and awareness in these dynamic and transformative fields.

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**9:25 am Saad Thabit, Founder and Principal DRF Engineering Services**

**Saad Thabit** has extensive experience leading product development design teams in the power electronics industry. Including design and development of power converters rated for several hundred kilowatts. These converters are ac/dc, dc/dc and dc/ac. Applications have included Grid Tie Inverter, high speed motor drives, solar inverter as well as varies other applications and products.

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**9:50 am Xinsheng Lou, Ph D, ISA Fellow, Director of ISA POWID, AI**

**Xinsheng Lou**

Navigating the AI Odyssey: Three Decades of Innovation, Practical Applications, and Future Perspectives
Presenter: Dr. Xinsheng Lous, Founder and CEO, Lous Tech and Services LLC

Over the past thirty years, the landscape of artificial intelligence (AI) has undergone transformative changes, marking significant advancements from rule-based expert systems to the advent of deep learning technologies. This presentation will traverse the evolution of AI, highlighting key milestones such as the development of rule-based expert systems for boiler design and monitoring, the application of Artificial Neural Networks (ANN) across various domains including boiler monitoring, diagnosis, nonlinear dynamic modeling, and Model Predictive Control (MPC), as well as the utilization of Fuzzy neural networks for bearing fault diagnosis. Furthermore, the discussion will extend to the revolutionary impact of deep learning for fault diagnosis in power plants, underscoring the paradigm shift in AI methodologies and their profound implications for industrial applications. In the realm of practical applications, the spotlight will be on the versatility of the Generative Pre-trained Transformer (GPT) models. From facilitating seamless translations to spearheading topical research, advice for industrial system sensing, and monitoring, the capabilities of GPT extend to building custom models for AI diagnostic consulting, generating images, and fostering teamwork in medical application development and optimization. These instances not only illustrate the multifaceted utility of GPT but also underscore its potential to drive innovation across various sectors. Central to this presentation is a reflection on personal perspectives regarding the evolution of AI, its growing prevalence in society, and its overwhelmingly positive impacts on human life. While celebrating these achievements, it is imperative to address the ethical challenges and cybersecurity risks that accompany the integration of AI technologies into our daily lives. As we stand on the precipice of a new era in AI development, the discussion will also call upon the IEEE community to play a pivotal role in addressing these concerns, ensuring the safe, ethical, and secure advancement of AI technologies. This presentation aims not only to chart the course of AI's remarkable journey but also to engage in a critical dialogue about its future trajectory, exploring how we can harness its potential responsibly and inclusively for the betterment of society.

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**10:15 am Anthony Romano, Dr. Hedge Fund**

Today, some of the most talked about subjects are hedge funds, global economics, and investments. The world has become a global market economy. Now, we have entered a new era for global investments, particularly the alternative investment sector. Dr. Romano will share his thoughts concerning the stock market, the commodities market, hedge fund investments and fund of hedge fund investments. He will also discuss cryptocurrency such as Bitcoin and the future of cryptocurrency. In addition, he will provide his insights on what highly successful people have in common.

**Dr. Anthony Romano** has a YouTube channel called Doctor Hedge Fund where he shares his thoughts with the public. Topics include hedge fund investments, investment management and business development. He conceptualized his PhD while at his first job on the trading floor of an investment bank. He realized that hedge funds were going to be the future for investors. In addition, he has completed over 900 pages of research on the subject matter of a quantitative analysis of hedge fund selection. He is also a financial author and has published his dissertation. His career experience includes working for the chief financial officer of Merrill Lynch as a risk analyst, commercial real estate analyst for Manhattan real estate and business owner who has created business relationships with some of the biggest named celebrities and the Forbes 500 uber rich.

https://www.linkedin.com/in/doctorhedgefund/

**10:40 am Jeff Steffensen, Commissioning Market Leader, Affiliated Engineers**

Learning objectives to understand the importance of commissioning (including recommissioning and retro commissioning) in higher education engineering, laboratory facilities. Second, to understand how to prioritize controls upgrades based on cyber security and building performance and third to understand how to coordinate with facilities and users during occupied hours and lastly to understand how to seek high impact outcomes in and existing building. Abstract: University Building Optimization Process Investigation and Implementation The project consists of a 6 story, 216,000 sq ft. serving a School of Engineering and Applied Science. It contains dry labs, a small data hall, classrooms, offices, and a café. The core function of the building makes it a target for energy optimization that realizes energy reduction. This presentation will share lessons in retro-commissioning, controls optimization, and commissioning in an active university classroom and engineering laboratory building. This presentation will cover the identification of the facility for Retro-Commissioning. Second, how did the project originate. Third, started existing building Cx during COVI less challenged access. Fourth, what to do with the issues and what are the targets, the mechanical systems, the lighting, and what does the implementation scope look like. Lastly, what systems are ultimately included. When working with the University and the users to effectively verify equipment operation with minimal impact or downtime. Being familiar with the building systems, automation system, and facilities procedures, and tracking the progress and the issues. Also maximizing the time onsite.

**Jeff Steffensen**, BCXP, Commissioning Market Leader, Affiliated Engineers Inc. Mr. Jeff Steffensen is the Mid-Atlantic North Commissioning Market Leader at Affiliated Engineers. His passion is existing building commissioning with a focus on optimization and "keeping it simple". Jeff has been with Affiliated Engineers for 11 years.

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**11:05 am Youcef Abdelli, Founder and CEO ZT1 Technology, Power Electronics dominate Sustainability Transition**

Electrification landscape and how power electronics will dominate and enable the transition to sustainability.

**Dr. Youcef Abdelli**

Dr. Abdelli is a transformational leader and chief engineer specializing in agile methodologies and engineering management. He supports technical mentorship, change management and global leadership. He leads as a versatile and experienced cross-disciplinary and functional technical leader, with demonstrable capabilities across numerous high-tech industry sectors and applications, including Aerospace, Automotive and Research Institutions. Youcef specializes in managing and leading high-tech teams in agile environments. He is passionate about practical and effective application of technologies to develop the next revolution in air travel with the first electric propulsion commercial aircraft. He believes that each one of us must start out by developing his or her own definition of success and he believes that when we have these specific expectations of ourselves, we are more likely to live up to them. Ultimately, Youcef believes it is not what you get or even what you give but it is what you become.

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**11:30 am Phil Teague, 'DC is the Future', CEO and Founder Rectify Solar**

**Phil Teague, CEO, and founder, Rectify Solar**

Committed and focused on making things right in the world of energy, by creating solutions which align with the Laws of Nature, how the Universe was created and intended, a DC Powered world. Many homeowners want to save money on energy and have the security of having power when the grid goes down, but solar energy can sound confusing and expensive. At Rectify, we believe that every family should have simple way to achieve energy independence. You need a way to take a stand for what powers your family. We understand it's uncomfortable to feel you have little control over your energy use. That's why Rectify has helped over 900 families install a solar power system and invest in their future. Together, we've saved over $5 million dollars in electric bills for homeowners just like you. That's enough energy to power 1 million homes for a single day! We know what it takes to save money and give you control of your future. Getting started is easy. Talk with an Energy Expert. Learn how much you could save. Create your Solar Energy Plan. See how easy it is to take a stand for your family. Invest in your future. Save money while making an impact. Are you ready to invest in your future? Visit https://rectifysolar.com/free-consultation/ today to co-create your Energy Independence Plan today with me, or one of our Energy Experts. Together, we can inspire others to be leaders in their community and take control of their path towards energy independence.

**Phil Teague** is the CEO and founder of Rectify Solar.

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**11:55 am Olaoluwa Adeleke, Investment Banking, Private Equity and Venture Capital**

**Olaoluwa Adeleke**

Key concepts including global technology and investment trends with a focus on North America; the typical lifecycle of a venture and the corresponding funding strategies; different key investment agreements such as SPA, Shareholders' Agreement, Voting Agreement, etc.; key terms in investment negotiation; and a close look at financing strategy for renewable energy projects.

"Ola" is an investment professional with five years of experience in investment banking and renewable energy where he has worked with Venture Capital and Private Equity firms across Africa, Europe, North America, and Asia. Ola has been directly involved in over 500 million dollars in fundraising transactions from startups to listed companies and led sell-side valuation, regulatory engagements, and due diligence work streams for key M&A (Merger and Acquisitions) deals involving players like Lafarge, Siemens, Peugeot etc. Currently, Ola is a Master of Advanced Management candidate at Yale University where he also works as the Student Funding Coordinator at the Tsai Center for Innovative Thinking at Yale reviewing investment ideas and recommending investment decisions for early-stage startups involving Yale students and faculties. He also has an MBA from HEC Paris with a specialization in Strategy. His expertise is in fundraising, M&A advisory, and corporate strategies.

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**12:55 pm Dr. Raj Vayyavur, Director Enterprise Architecture Data Governance at Public Consulting Group**

Developing an AI Roadmap: A Strategic Enterprise Architecture Approach, Dr. Raj Vayyavur, Senior IEEE Member Chair of Computer Society & Consultants network - IEEE New Hampshire. In this presentation, we will explore the strategic development of an Artificial Intelligence (AI) roadmap using an Enterprise Architecture (EA) approach. By aligning AI capabilities with business objectives, organizations can identify initiatives that drive growth and innovation. Through a structured EA framework, attendees will learn how to prioritize AI initiatives, assess capabilities, evaluate technologies, and manage risks. Practical examples and case studies will illustrate successful AI strategies, enabling organizations to unlock the full potential of AI to enhance customer experiences, drive innovation, and achieve sustainable business growth.

**Dr. Raj Vayyavur** is a leading industry expert in both IT and business realms, with a special focus on leveraging AI techniques to revolutionize industries and drive growth and success. He holds a Doctorate in Information Systems from California Intercontinental University, an MBA from DBU Global, and a bachelor's in computer science from Osmania University. He has a remarkable array of certifications, and several publications in business, project management and computer engineering. Moreover, Dr. Vayyavur chairs IEEE New Hampshire's Computer Society and Consultants Network and is an esteemed judge at Project Management Institute (PMI) and Academy of Management global conferences and was previously served on the boards of PMI New Hampshire and ASQ Merrimack Valley. Dr. Vayyavur's extensive expertise is in line with his goal of delivering effective business solutions that enhance business outcomes and drive success.

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**1:20 pm Laiz Souto, Senior Research Associate Future Energy Networks, University of Bristol**

**Energy systems and disruptive weather: holistic impact assessment and mitigation for a resilient and secure net zero future**

This presentation will be divided in three main parts. First, it will provide an overview of the impacts of disruptive weather on energy systems, including impacts on infrastructure and service provision, interdependencies with other critical infrastructure and services, and risks associated with climate change. Second, it will describe some of our recent works underpinning impact assessment and mitigation strategies implementable over different timescales, with consideration of interdisciplinary and intersectoral aspects. Lastly, it will summarize our key findings so far and further perspectives for resilient and secure net zero energy systems. This presentation will mostly cover current and projected risks identified in the United Kingdom (with high relevance to other locations) and feature holistic impact assessment and mitigation strategies derived from our recent works at the University of Bristol within the Supergen Energy Networks Hub.

**Laiz Souto**

Dr. Laiz Souto is an electrical engineer specialized in power systems (Ph.D., M.Sc., Eng.) and academic researcher with nearly 10 years of international experience in Europe, Brazil, and the USA. Currently, she is a Senior Research Associate in Future Energy Networks at the University of Bristol (United Kingdom) and part of the academic team of the EPSRC Supergen Energy Networks Hub. Dr. Souto mostly works on the development and implementation of innovative approaches to enhance power grid resilience to severe weather events and ensure security of supply now and in the future. Her work has covered a considerably wide range of aspects involved in resilience assessment and enhancement decisions in electricity transmission and distribution systems with strong interdisciplinary and intersectoral contributions. Among top-quality journal articles, conference proceedings, book chapters, and scientific reports, he has authored 30 academic publications. Dr. Souto is also the academic leader of the interdisciplinary Ph.D. projects on "Climate Change Adaptation in Infrastructure Systems" at the University of Bristol and the principal investigator of two projects funded by Horizon Europe for transnational access to research facilities at IEE Fraunhofer (Germany) and DTU (Denmark). She also actively participates in IEEE Task Forces and CIGRE Working Groups and provides consultations on power grid infrastructure resilience and related topics for utilities and governments.

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4:55 pm Salute to the Speakers

5:00 pm Special Guest – Happy Hour – Networking

We thank our sponsors:


Mike Brisbois, PE

Conference Director

# Thank You!

## See you in Honolulu this Fall

## December 6, 2024

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