# Boston Section

Supporting students, working engineers and retirees through professional development, education and resources.

# THE Reflector

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IEEE Boston Section

ieeeboston.org

IEEE Advancing Technology for Humanity

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*Maira Marques Samary*

# Awards: Recognition and Visibility

*By Maira Marques Samary, Past Chair, IEEE Boston Section*

On Sunday, March 16th, the 2025 Boston Section Awards Ceremony took place at Tufts University's Joyce Cummings Center. This gathering was long overdue, since before the pandemic, the IEEE Boston Section had not held a ceremony to celebrate the accomplishments and contributions of its members and volunteers. As one of the largest IEEE sections, Boston is home to many distinguished Fellows and award recipients who deserve recognition.
Restoring a Boston Section-wide awards ceremony had been one of my goals as a section officer, and I am thrilled to see it return and be as successful as it was.

## Recognizing the Power of Volunteers

Volunteers are the backbone of IEEE. They generously contribute their time, knowledge, and expertise to advance technology and humanity for a better future. While they receive no monetary compensation, we as a community can express our gratitude through recognition. An awards ceremony is an opportunity to highlight outstanding contributions, showing honorees the significance of their work while inspiring others to aspire toward similar achievements.

Awards are rare moments when we honor dedication and commitment to something greater than ourselves. They serve as a reminder that we can achieve more together. To that end, the Boston Section grants individual awards to extraordinary volunteers and chapter awards to groups making a meaningful impact.

## Event Highlights

The ceremony gathered more than 80 attendees and began with my passing of the gavel, as 2024 Boston Section Chair, to Karen Panetta, the 2025 Chair.
A particularly moving moment was the recognition of Dr. Arthur Winston, whose leadership helped shape both the IEEE Boston Section and IEEE globally as a past president. In his honor, the section created the Arthur Winston Student Award, celebrating his lifelong dedication to mentoring and uplifting students. Attendees included Pam Hoffman, Matthew Winston, and Leslie Winston, Dr. Winston's children.

We were honored to welcome distinguished guests, including: Bala Prasanna, IEEE Region 1 Director, Charles Rubenstein, IEEE Region 1 Director-Elect and Fred Schindler.

*Pictured: Past Chair, Maira Marques Samary and Current Chair Karen Panetta*

## IEEE FELLOWS -- Honoring Excellence

*We celebrated our 2024 and 2025 IEEE Fellows, a distinction reserved for select IEEE members whose extraordinary accomplishments merit this prestigious elevation.*

**Stefano Di Cairano - Mitsubishi Electric Research Laboratories**
"For contributions to model predictive and constrained control in automotive and aerospace applications."
2025

**Roozbeh Jafari - MIT**
"For contributions to sensors and systems for digital health paradigms" 2025

**Thomas L. Szabo - Boston University**
"For contributions to ultrasound education and establishing technical standards" 2024


*Pictured: Thomas Szabo with Karen Panetta*

**Dong Tian - InterDigital**
"For contributions to 3D video compression, processing, and analysis" 2025

**William D. Oliver - Massachusetts Institute of Technology**
"For contributions to superconductive quantum computing technology and its teaching" 2025

**Dirk R Englund Massachusetts Institute of Technology**
"For contributions to semiconductor quantum photonics and machine learning" 2024

**Josep Miquel Jornet Boston MA**
For contributions in terahertz communication and nanonetworking" 2024

**Jonathan Le Roux MERL Cambridge MA**
"For contributions to multi-source speech and audio processing" 2024

**Marko Loncar Harvard University Cambridge MA**
"For contributions to thin film lithium nanophotonics" 2024

**Yue Lu Winchester MA**
"For contributions to multidimensional signal processing" 2024

**Yury Polyanskiy MIT Cambridge MA**
"For contributions to information measures and finite-blocklength information theory" 2024

## IEEE MEDAL RECIPIENTS

*We also recognized IEEE Medal recipients, awarded for exceptional contributions or distinguished careers in IEEE fields of interest.*

**2024 IEEE Edison Medal**
*For a career of meritorious achievement in electrical science, electrical engineering, or the electrical arts.*

**Vincent Wai Sum Chan** "For pioneering technical contributions and leadership in the fields of space and terrestrial optical communications and networks"


*Pictured: Vincent Chan with Karen Panetta*

*the story continues on the next page*

**2024 IEEE William E Newell Power Electronics Award** *For outstanding contributions to power electronics.*

**David J. Perreault** "For contributions to the development of very-high-frequency power converters"

**2024 IEEE Dennis J. Picard Medal for Radar Technologies and Applications** *For outstanding accomplishments in advancing the fields of radar technologies and their applications.*

**Fred Daum** "For research, design, development, analysis, and testing of complex phased array radar systems, making them work in the real world"

**2025 IEEE Robotics and Automation Technical Field Award** *For contributions in the field of robotics and automation.*

**Marc Raibert** "For pioneering and leading the field of dynamic legged locomotion."


*Pictured: Francesca Scire Scapuzzo with Karen Panetta and Ramon De la Cruz*


*Pictured: Sampathkumar Veeraraghavan with Karen Panetta and Ramon De la Cruz*

## REGION 1 AND BOSTON SECTION AWARDS

*Additionally, we celebrated the Region 1 Award recipients and the Boston Section Award recipients, who were nominated by peers for their contributions to IEEE and their respective professions.*

### REGION 1 AWARD RECIPIENTS

**2019 IEEE Region 1 Managerial Excellence in an Engineering Organization Award**

**Francesca Scire Scapuzzo** "For Starting a Bold Revolution in the Defense and Aerospace Industry in the USA"

**2023 IEEE Region 1 Enhancement of the IEEE Engineering Profession's Image with the Public Award**

Sampathkumar Veeraraghavan "For Exemplary Leadership in IEEE Global Humanitarian Activities"

*The story continues on the next page*

**2023 IEEE Region 1 Enhancement of the Relationship between IEEE and Industry Award**

**Denise Griffin** “For Expanding Engagement between IEEE, Women in Engineering and Industry”


*Pictured: Jeff Herd with Karen Panetta and Ramon De la Cruz*

**2023 IEEE Region 1 Enhancement of the Relationship of IEEE and Industry**

Wayne A. Bishop Jr. “For Dedicated Service in Enhancing the Relationship between IEEE and the Power and Energy Industry”

**2023 IEEE Region 1 Award for Technology Innovation (Industry or Government)**

Laura Brattain “For Outstanding Innovation in Biomedical Image Processing and Artificial Intelligence”

## BOSTON SECTION AWARD RECIPIENTS

Boston Section Award Recipients are nominated by members of the Boson Section and chosen by a committee of their peers for their contributions to the section and to their profession.

**2024 IEEE Boston Section Distinguished Member Award**

Eric Evans “For continuous and dedicated support of the section’s historic milestones, its members and volunteers, and extraordinary effort in advancing the mission of the IEEE”

**2025 IEEE Boston Section Distinguished Service Award**

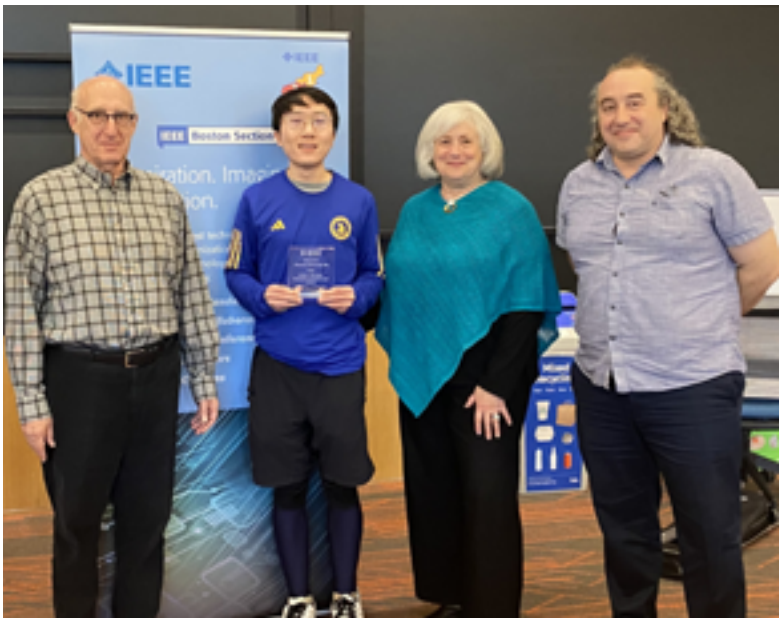
Len Long “For his outstanding effort in championing the Section through the years”

**2025 IEEE Boston Section Distinguished Member Award**

Adarsh Ravi “For his leadership in establishing the Microelectronics Chapter”

**2025 IEEE Boston Section Conferences Award**

Jeff Herd “Past Chair of the Phased Array conference and he continues to support the Section’s largest conference in a role as advisor, cheerleader and industry mover-and-shaker.”




*Pictured: Bruce Jia with Arthur Winston’s children: Leslie Winston, Pam Hoffman and Matthew Winston.*

*Story continues on the next page*

**2025 IEEE Boston Section Chapter Leadership Award**

Aseem Singh "Has grown and sustained the Engineering in Biology and Medicine Society Chapter on a path of success."

**2025 IEEE Boston Section Arthur Winston Student Award**

Bruce Jia "For outstanding contributions to the Boston Section Local Conference Committee. "Boston/Providence/New Hampshire Joint Sections of the Reliability Chapter

**2025 IEEE Boston Section Chapter Contribution Award**

Marcel Gaudreau "... has been a pioneer in high power electronics and fusion for 40 years. He has built his own company and contributes broadly to the industry"

**Chapter with the Most Number of Attendees in Meetings in 2024**
Boston Section Computer Society

**The Most Innovative Chapter 2024**
Boston Section Microelectronics Chapter
"for creating their own PODCAST"

**Boston Section Recognition Award**

Bob Alongi for his 30 years of service as the IEEE Boston Section Business Manager

*Bob Alongi with Trina Lorigan, Boston Sec. Business Mgr.*

**Building Connections & Looking Ahead**

Before and after the ceremony, we had the chance to connect, collaborate, and celebrate. Attendees discussed new opportunities, explored ways to broaden IEEE's impact, and considered strategies to engage the next generation—an ongoing challenge we must address. Of course, the chocolate cake and cannoli made the conversations even better!

The Boston Section Awards Ceremony is back—and here to stay! If you couldn't attend this year, keep an eye out for next year's announcements. Our volunteers' dedication deserves recognition, and there's no better way to celebrate their work than with an event that brings us all together.

# Sensors in Spotlight

Northeastern University - Interdisciplinary Science and Engineering Complex (ISEC)
Boston, Massachusetts || May 16, 2025

## KEYNOTE SPEAKERS

Industry Leaders take the Sensors in Spotlight stage to present BIG VISIONS. This is a unique one-day networking event introducing emerging applications that will inspire technological developments in years to come. Sensors in Spotlight is where sensor technologies take the central stage. The program includes keynote presentations, panel discussions, poster and live demo session, and plenty of networking opportunities. The event will inform and inspire creation of a technological eco-system in support of BIG VISIONS. Sensors in Spotlight is the industry-facing annual conference sponsored by the IEEE Sensors Council.

### BRAIN & BODY

**Adding Wisdom to Smart Systems**
**Timothy Denison,**
Oxford University

**Functional Fabrics Enable Revolutionary Applications: From Color Changing Apparel to Clothing That Can See, Hear, Sense, and Communicate**
**Alexander (Sasha) Stolyarov,**
Advanced Functional Fabrics of America (AFFOA)

### SEMICONDUCTORS & SUSTAINABILITY

**Materials Challenges to Meet Design Rules for Next-Generation Semiconductors for Sensors and Chip Packages**
**Drew Chambers,**
DuPont Electronics & Industrial

**Funding the Future of Sensors**
**Paul Pickering,**
Silicon Catalyst

### SPACE & SKY

**The Paradox of Safety: How 100 Years of Innovation Can Still Fail Pilots**
**Steve Smith,**
Blue Origin

IEEE Sensors Council

**If you are interested in registering for or being a Patron or Exhibitor at Sensors in Spotlight 2025 please visit 2025.ieee-sensorsinspotlight.org for more information.**

IEEE
Advancing Technology for Humanity

**2025 IEEE International Conference on Artificial Intelligence & Data Analytics**
**June 24, 2025**
Tufts Engineering Graduate Programs, Medford, MA

# 2025 ICAD SPONSORSHIP OPPORTUNITIES

This new conference and exhibition will emphasize the applications of AI and key AI verticals that impact technology applications and innovations. The conference aims to provide an experience that prepares you to learn about new research and breakthroughs in AI, gain valuable insights, grow your network, and get inspired by the brightest minds working in this multi-faceted field.

We are inviting sponsorship from industries, businesses, and government agencies and various levels of sponsorship are possible. Based on the sponsorship level, the sponsor will have access to opportunities for advertising and/or displaying their products, making presentations and a number of free registrations to the conference. We can also customize opportunities like branded merchandise or student awards.

| Benefit | Gold Sponsor | Silver Sponsor | Bronze Sponsor | Exhibitor |
|---|---|---|---|---|
| Investment | $4000 | $2000 | $1000 | $500 |
| Recognition on Website | X | X | X | X |
| Logo on Prominent Signage | X | X | X | X |
| Recognition at Lunch & Breaks | X | X | X | |
| Logo on Presentation Screen During Breaks | X | X | X | |
| Ad in Conference Program | 1/2 Page | 1/4 Page | Logo Only | |
| Complimentary Conference Registration | Four (4) | Two (2) | One (1) | |
| Table Top Exhibit Space | X | X | | X |

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## Sponsorship Guidelines

For all sponsorship levels, the sponsors' logos will be prominently displayed at all conference events, on the conference web site, as well as in any conference materials. Sponsorships at the Bronze level and above include one or more complimentary registrations for sponsor representatives, depending on the level of sponsorship. If you'd like to sponsor or have questions, contact Trina Lorigan: t.lorigan@ieee.org.

IEEE PELS Boston Chapter &
Northeastern University present

# THE CHALLENGE OF POWERING SOFT ROBOTS

## DR. KRIS DORSEY

Associate Professor
Northeastern University

Pizza provided if you register!

April 3, 2025
6:30 - 8:30 PM

**EXP-610**
815 Columbus Avenue,
Boston, MA 02120

## Register!

For exhibitors or attendees use QR code or link

https://shorturl.at/N9vzi

## What to Expect

- Tour of the Robotics facilities
- Seminar and Q&A
- Trivia

**GET IN TOUCH**

https://www.ieee-pels.org/ IEEE Power Electronics Society Join our Email list!

*IEEE Boston Reliability Chapter – 5:00 PM, Wednesday, April 9*

# COMSOL Multiphysics and the Uncertainty Quantification Module

**Location** - This Meeting is to be delivered in-person at MIT Lincoln Lab Main Cafeteria, 244 Wood St, Lexington, MA 02421, and virtually. If attending in person, you must show a valid photo ID at the gate.

**Speaker:** Kourosh K. Taheri, Ph.D. (Technical Sales Manager, Energy) and Andrew Strikwerda, Ph.D. (Applications Manager, Electromagnetics)

**Event Registration Link**: https://events.vtools.ieee.org/m/475215

Doors open at 5pm, with food and refreshments served at 5:30.

COMSOL Multiphysics® is a general-purpose simulation software used in all fields of engineering, manufacturing, and scientific research. The software brings fully coupled Multiphysics and single-physics modeling capabilities, model management, and user-friendly tools for building simulation applications. All add-on products from the product suite connect seamlessly with COMSOL Multiphysics® for a modeling workflow that remains the same regardless of what you are modeling.

The Uncertainty Quantification Module, an add-on to the COMSOL Multiphysics® software, is designed to address the limitations of deterministic simulations by incorporating the inherent uncertainties found in real-world applications. Simulations typically assume that input data are fixed, and outputs can be computed with high accuracy. However, this deterministic approach does not account for the variability present in practical scenarios such as manufacturing processes, where significant uncertainty exists. The Uncertainty Quantification Module offers a uniform interface for screening, sensitivity analysis, uncertainty propagation, reliability analysis, and inverse UQ. It can be integrated with other COMSOL products to enable uncertainty analysis in electromagnetics, structural mechanics, acoustics, fluid dynamics, heat transfer, and chemical engineering simulations.

In this presentation, we will first introduce the COMSOL Multiphysics software and demonstrate the workflow by constructing a simple proof of concept model. We will then discuss the Uncertainty Quantification Module, and how it can be incorporated into a Multi-physics simulation.

*Kouroush Taheri*

*Andrew Strikwerda*

# CNET CORNER

https://www.bostonconsultants.org
LinkedIn: IEEE Boston Consultants Network

IEEE Boston Consultants Network (CNET) is a consultants' group that offers a wide variety of consulting services in electrical, hardware, software, IT, regulatory, technical writing, and many other engineering disciplines.

**CNET Board of Directors Meeting**
(open for all CNET members)

Date: April 14th at 6:30 pm
Location: The Great Wall Restaurant, 309 Great Rd., Bedford, MA (free dinner)

Register at: https://bostonconsultants.org

The Board will discuss and make decisions on how to enhance CNET presence and provide more visibility for its members' services. The Board will also evaluate the IEEE - CNSV proposal for starting a collaboration between CNET and Silicon Valley Consultants Network.

**Achieving Maximum Benefit from Consultants**

CNET presentation to the Medical Development Group of Boston (MDG)

Date: May 28th (time to be announced)
Location: Zoom
Register at: https://bostonconsultants.org

Three highly experienced consultants and CNET members: David Connor, Larry Nelson Sr., and Mark Fitzgerald, will talk about the rational and the benefits of hiring consultants and the basic facts of being a consultant with emphasis on medical devices' regulatory requirements. After registering, you will receive a confirmation email containing information about joining the webinar.

*IEEE Boston Photonics Society – 6:00 PM, Thursday April 10*

# Long-Wavelength Infrared (LWIR) Hyperspectral Imaging for the Standoff Detection of Trace Surface Chemicals

**Location** - 3 Forbes Road, Lexington, MA

**Speaker:** Anish K. Goyal - Block Engineering/MEMS

**Event Registration Link**: https://events.vtools.ieee.org/m/477686

The detection and identification of trace chemicals on surfaces is of great interest for a variety of civilian and security applications. Sensitive techniques for trace surface detection already exist, but these usually require the physical transfer of chemicals from the surface of interest into the instrument. In some cases, however, it is desirable that detection occur in a standoff configuration and be non-destructive. Furthermore, it is often desirable to rapidly scan the surface and to map the chemical contamination with high spatial resolution.

Laser-based, long-wave infrared (LWIR) hyperspectral imaging has been shown to be capable of addressing many of the requirements that are important to end users. These include the ability to engineer hand-portable systems that are eye-safe (class 1), provide high sensitivity detection (micrograms/cm2), operate at modest standoff distances (<1m to >10m), and achieve high areal coverage rates (potentially >100 cm2/s).

Wavelength-tunable quantum-cascade lasers (operating about l = 7.5 – 12 mm) are used to illuminate the surface of interest and a camera captures the diffusely reflected light. The laser wavelength is tuned synchronously with the camera such that reflectance of the surface in the form of a hyperspectral image cube (hypercube) in which each pixel represents the reflection spectrum of a **single point on the surface.** The unique spectral signature of chemicals can be detected with high sensitivity because of the very large absorption cross-sections for most chemicals in the LWIR.

Over the past 15 years, this technology has matured from initial feasibility demonstration (at MIT/LL) and then through the development of a series of prototypes under funding from IARPA, DoD, and DHS. It is currently on the cusp of being commercialized. In this talk, we will discuss the underlying technology, performance limits, and present examples of various applications.

**Anish Goyal** (pictured below) is the Vice President of Technology at Block Engineering. Responsibilities include the advancing of Block's chemical detection products and the external-cavity quantum cascade lasers on which these products are based. Prior to joining Block, he was a member of the Technical Staff at MIT Lincoln Laboratory in the Laser Technology and Applications Group. His academic background is in Electrical Engineering, receiving a B.S. degree from Rensselaer Polytechnic Institute and Ph.D. from the University of California, Santa Barbara.

*IEEE Boston Computer Society and GBC/ACM – 7:00 PM, Thursday April 24*

# Learning, Engineering and Targeting Cell States in Cancer

**Location**: MIT Room 32-G449 (Kiva) and online via Zoom

**Speaker: Ava Amini, Microsoft Research**

**Register at:** https://acm-org.zoom.us/webinar/register/WN_Msf8F_LXTcSD2mWpDeVx5A

After registering, you will receive a confirmation email containing information about joining the webinar.

Indicate on the registration form if you plan to attend in person. This will help us determine whether the room is close to reaching capacity. We plan to serve light refreshments (probably pizza) before the talk starting at around 6:30 pm. Letting us know you will come in person will help us determine how much pizza to order.

We may make some auxiliary material such as slides and access to the recording available after the seminar to people who have registered.

Abstract: Cancer is often treated using a reductionist approach: distilled to an individual subtype, mutation, or phenotype. But fundamentally, cancers are complex ecosystems that necessitate systems-level understanding and intervention. Addressing this problem is equal parts biology and computer science. In Project Ex Vivo, a joint cancer research collaboration between Microsoft Research and the Broad Institute, we are envisioning a new, constructionist paradigm for precision oncology, one powered by the bottom-up integration of computation and experimentation to understand the complexity of cell state ecosystems in cancer. In this talk I will share our recent efforts to build AI models to better define, model, and therapeutically target cell states in cancer.out for.

**Ava Amini** (pictured right) is a Principal Researcher at Microsoft Research in Cambridge, MA. Her research focuses on developing new AI methods to understand and design biology, with the ultimate aim of realizing precision biomedicines that improve human health. She is a co-lead of Ex Vivo , a collaborative effort between Microsoft and the Broad Institute, that is focused on defining, engineering, and targeting cell states in cancer.

In addition to research, Ava is passionate about AI education and outreach — she is a lead organizer and instructor for MIT Introduction to Deep Learning , an in-person and global course on the fundamentals of deep learning.

Ava completed her PhD in Biophysics at Harvard University and the Massachusetts Institute of Technology (MIT), where she was advised by Sangeeta Bhatia at the Koch Institute for Integrative Cancer Research and supported by the NSF Graduate Research Fellowship. Ava received her Bachelor of Science in Computer Science and Molecular Biology from MIT.

*Directions to 32-G449 - MIT Stata Center, 32 Vassar Street, Cambridge, MA: Please use the main entrance to the Stata Center at 32 Vassar Street (the entrance closest to Main Street) as those doors will be unlocked. Upon entering, proceed to the elevators which will be on the right after passing a large set of stairs and a MITAC kiosk. Take the elevator to the 4th floor and turn right, following the hall to an open area; 32-G449 will be on the left.*

*IEEE Boston Electromagnetic Compatibility Chapter – 5:00 PM, Monday, May 5*

# History and Future of Measurement Methods in ANSC C63.4

**Location**: TÜV Rheinland North America, Technology and Innovation Center. Co-Sponsored by: ETS-Lindgren and Rohde & Schwarz. Complimentary parking is available.

**Speakers:** Fantastic speakers and a live demonstration within a new state-of-the-art 10 meter chamber.

**Register here.** There is NO CHARGE to attend, but you must register in advance. All IEEE members and guests are welcome to attend.

This is a unique opportunity to learn and network with members from ANSC C63.4 and contribute towards discussions which will influence future measurement methods!

**Event Schedule**

| | | |
|---|---|---|
| Date: | Monday, May 5, 2025 | |
| Time: | 5:00 pm | Registration/check-in, complimentary dinner and refreshments |
| | 6:00 pm | Welcome from TÜV Rheinland North America and IEEE EMC Boston Chapter |
| | 6:10 pm | "The History of ANSI C63.4" by Art Wall, former FCC Representative to ANSC C63 |
| | 6:30 pm | "Addressing Under-Testing in EMC Emissions Measurements: A Comparative Analysis of Boresighting and Linear Scanning Methods" by Zhong Chen, ETS-Lindgren |
| | 7:00 pm | "Don't Get Tilted" By Nicholas Abbondante, Intertek, Boxborough, MA |
| | 7:30 pm | Live Demonstrations of Boresight and Linear Scan Methods in 10m Chamber by Bob Mitchell, TÜV Rheinland |
| | 8:15 pm | Reconvene in meeting room – Q&A – Closing Comments |
| | 8:30 pm | Adjourn |

*See presentation abstracts and speaker bios below.*

**History of ANSI C63.4**

By Art Wall, former FCC Representative to ANSC C63.4, Columbia, MD

Art Wall was one of the primary authors of the Federal Communications Commission (FCC) document MP-4 "FCC Procedure for Measuring RF Emissions from Computing Devices" – the document which heavily influenced the first edition of ANSI C63.4. This presentation will discuss the history of the measurement techniques specified in C63.4 and provide some context behind the procedures called out in the standard.

**Addressing Under-Testing in EMC Emissions Measurements: A Comparative Analysis of Boresighting and Linear Scanning Methods**

By Zhong Chen, ETS-Lindgren, Cedar Park, TX

This presentation examines the critical differences between antenna boresighting and linear scanning techniques during height scans in emissions measurements for frequencies above 1 GHz. At higher frequencies, emissions from typical equipment under test (EUT) exhibit complex radiation patterns. Capturing the true peak radiation becomes a statistical challenge. This presentation explores both experimental and simulation studies conducted by researchers to analyze these phenomena. Additionally, simulations are performed to illustrate and corroborate the findings. By addressing the technical limitations of linear scanning and emphasizing the advantages of boresighting, this discussion seeks to contribute to standards development and enhance the accuracy and reliability of EMC emissions measurements.

**Don't Get Tilted**

By Nicholas Abbondante, Intertek, Boxborough, MA

This presentation will review the rationale and concepts behind the antenna tilting changes in the C63.4 draft standard. Currently, test labs that are making measurements using both US and international standards need to be aware of and capable of supporting multiple different methods of testing above 1 GHz. After over a decade of testing using antenna tilting in C63 measurement standards, lessons have been learned about the pros and cons related to the use of tilting, which will be discussed in this presentation.

**LIVE Demonstration**
By Bob Mitchell, TÜV Rheinland

As technology has evolved over the past decades, the equipment and methods that are used to test this technology is continuously evaluated to ensure that the best methods are being used. This demonstration will compare the Linear Scanning and Boresight Scanning methods when used at a 3m test distance with a 1m height reference. Identical antennas, identical measurement receivers, identical model of test cables, and identical masts will be utilized during this demonstration. The TÜV Rheinland Chamber was designed to run dual axis measurements as part of the 2025 automation program TÜV is implementing. Thus, the use of the TÜV Rheinland chamber has the exact capability to provide the comparison that is needed for this demonstration.

One test sample will be set up on the 0.8m high foam table, using two identical horn antennas taking measurements from 1 to 18 GHz at the same time and scanning from 1-4m in height. Given the specific parameters of the test, this demonstration is designed to show the similarities and differences of Linear and Boresight scanning methods. The goal is to provide additional insights on how best test methods can be developed as technology changes.

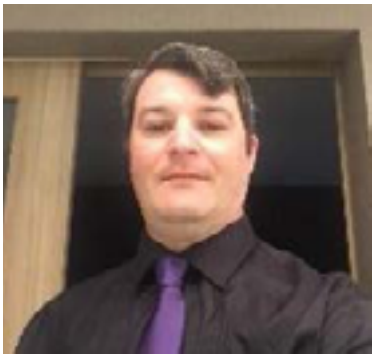
**About the Speakers**

**Art Wall** retired from the Federal Communications Commission in 2005 as Deputy Chief of the FCC Laboratory with over thirty-five years of experience in radio regulatory issues, Electro-Magnetic Compatibility (EMC), standards, and conformity assessment. Art was also a consultant for the government and industry for an additional 14 years in the same field. He authored and participated in the development of numerous mandatory and voluntary standards for intentional and unintentional radiators for controlling radio interference. He was active in ANSI C63 for over 40 years and was international Secretary and Chairman of Subcommittee A (dealing with measurements and instrumentation) of the International Special Committee for Radio Interference (CISPR) for over 20 years. He also participated in developing and implementing the US-EU MRA and the APEC MRA for telecommunication equipment. Mr. Wall is a Life Fellow of the Institute of Electrical and Electronic Engineers (IEEE) and Life member of the IEEE EMC Society. He has a BSEE from the University of Maryland and an MSEE from George Washington University.

He may be reached at artwall43@gmail.com.

**Zhong Chen** is Chief Engineer at ETS-Lindgren, located in Cedar Park, Texas. He has over 25 years of experience in RF testing, anechoic chamber design, as well as EMC antenna and field probe design and measurements. He is an active member of the ANSC C63® committee currently serving as Vice-Chair and is the immediate past Chair of Subcommittee 1 which is responsible for the antenna calibration (ANSI C63.5) and chamber/test site validation standards (ANSI C63.4 and the ANSI C63.25 series). Mr. Chen is chair of the IEEE Standard 1309 committee responsible for developing calibration standards for field probes, and IEEE Standard 1128 for absorber evaluation. Currently he is a member of the IEEE EMC Society Board of Directors and a former member of the Antenna Measurement Techniques Association (AMTA) Board of Directors. He is a past Distinguished Lecturer for the EMC Society and is recognized as an AMTA Fellow. His research interests include measurement uncertainty, time domain measurements for site validation and antenna calibration, and development of novel RF absorber materials. Several papers authored and co-authored by Mr. Chen have received best paper recognition at global conferences. Zhong Chen received his M.S.E.E. degree in Electromagnetics from the Ohio State University at Columbus.

He may be reached at zhong.chen@ets-lindgren.com.



**Nicholas Abbondante** has served as Intertek's Chief EMC Engineer since 2013, responsible for technical support of Intertek's global network of 24 EMC labs. In his 22+ years with the company, he has been involved in testing a wide range of radio and electronic equipment to EMC requirements for regulatory domains around the world, specializing in transmitters and medical devices. He is the Technical Manager of Intertek's TCB program and is TCB Council Board Vice Chair, and serves as the CISPR/A Secretariat. An active participant in many ANSC C63 standards projects, he is chair of both C63.31 for ISM device measurement and C63.25.3 for 18-40 GHz test site validation, and was recently elected as the incoming chair of Subcommittee 4 for wireless and ISM equipment measurements. He is also a working group member of C63.10 and C63.26 for radio testing, C63.4 Emissions, C63.16 ESD, C63.33 EAS immunity and the recently completed C63.2 Receiver, C63.29 Lighting and C63.30 Wireless Power Transfer standards. Nick has a Bachelor's degree in physics from the Worcester Polytechnic Institute (WPI) in Massachusetts, USA.

He may be reached at nicholas.abbondante@intertek.com.

**Bob Mitchell** is the Director of Laboratory Technology and Innovation at TÜV Rheinland, based in Boxborough, MA. Bob also holds the role of EMC technical manager for TÜV Rheinland of North America. Along with the roles and tasks Bob does for TÜV Rheinland, Bob is one of the USNC member experts for the ISO, CISPR D, SAE, ANSC C63®, and 5GAA committees. Bob is also an active member of the Advisory Committee for Electromagnetic Compatibility for the IEC representing TC125, TC47 and the US National Committee. Over the course of his career, Bob has presented many workshops at the IEEE EMC+SIPI Symposiums, authored technical papers, and has supported technical data for development of many new EMC standards across the organizations. In the role of Director of Laboratory Technology and Innovation for TÜV Rheinland North America, Bob has the responsibility for developing and expanding test capabilities, opportunities, and test facilities in the various markets for TÜV Rheinland.

He may be reached at rmitchell@us.tuv.com.

In case of questions regarding location, please contact: Robert Mitchell, Director, Lab Technology & Innovation, TÜV Rheinland rmitchell@us.tuv.com Tel: +1 978 506 7027 Mobile: +1 978 436 1265

## Got Something to Say? We'd Like to Hear It!

*Please send your articles, opinions, event re-caps & photos and announcements to The Reflector at:*

**ieeebostonsection@gmail.com**

IEEE MTT/APS JOINT CHAPTER PRESENTS

# CAPABILITIES OF A VECTOR NETWORK ANALYZER

## SPEAKER

Rick Hollowell
Copper Mountain Technologies
Indianapolis, USA

**REGISTER NOW**
(CLICK HERE)

- Learn how Vector Network Analyzers deliver precise S-parameter measurements for RF components. Applications in RF and Microwave Engineering.
- Join Rick Hollowell, a 40+ year industry expert, as he explores cutting-edge advancements in VNA technology.
- Learn how to use a VNA with a practical hands-on session.
- A live Q&A Session where you will have a chance to interact with Rick Hollowell and get your questions answered.

**MONDAY**
19/05/25

05 PM - 07 PM EST

WENTWORTH INSTITUTE OF TECHNOLOGY
550 HUNTINGTON AVE BOSTON, MA 02115
BEATTY HALL 426

55 ANNUNCIATION ROAD,BOSTON
ANNEX LOT

Contact Us For Details

2548780279
kulkarnij@wit.edu

# Introduction to Neural Networks and Deep Learning (Part II): Convolutional Neural Networks, Basic Language Modeling

## Web-based Course with live Instructor!

**Decision (Run/Cancel) Date for this Course is Friday, April 11, 2025**

| Payment | on/by April 4 | After April 4 |
|---|---|---|
| IEEE Members | $115 | $130 |
| Non-members | $135 | $150 |

Register Here Now

**Series Overview:** Neural networks and deep learning currently provides the best solutions to many problems in image recognition, speech recognition, natural language processing, and generative AI.

**Ideal for**: Engineers, AI enthusiasts, and professionals looking to be introduced toDeep Learning and Generative AI.

The Part 1 class and this Part 2 class will teach many of the core concepts behind neural networks and deep learning, and basic language modeling.

The planned Part 3 class (to be confirmed) will teach a simple Generative Pre-trained Transformer (GPT), based on the seminal Attention is All You Need paper and OpenAI's GPT-2/GPT-3.

### Part 2 Description

In the first section, we again use a neural network in teaching a computer to recognize handwritten digits. Here we introduce the convolutional neural network. They are predominantly used in computer vision applications, such as for recognizing objects in images.

The second section, the class introduces basic language modeling, and simple generation of text based on prior learned text, in this case, baby names.

But you don't need to be a professional programmer. The demo code provided is in Python, and should be easy to understand with just a little effort.

Reference:

- Book: Neural Networks and Deep Learning by Michael Nielsen, http://neuralnetworksanddeep-learning.com
- Video Course: Neural Networks: Zero to Hero by Andrej Karpathy, an OpenAI cofounder, https://karpathy.ai/zero-to-hero.html

### Benefits of Attending the Series

- Build upon the core principles behind neural networks and deep learning in the Part 1 class to learn about convolutional neural networks.
- See a simple Python program that solves a concrete problem: teaching a computer to recognize a handwritten digit.
- Improve the result through incorporating more and more core ideas about neural networks and deep learning.
- Understand basic language modeling.
- Implement a simple language model that generates baby names from existing names.
- Get introduced to the popular PyTorch library.
- Run straightforward Python demo code examples.

*Description Continued on next Page*

**Course Background and Content:**

This is a live instructor-led introductory course on Neural Networks and Deep Learning. It is planned to be a three-part series of classes.

The Section 1, Part 2, class material is mostly from the same highly-regarded and free online book used for the Part 1 class: Neural Networks and Deep Learning by Michael Nielsen. We add some additional material such as introducing the Residual or Skip connection in a Residual block, which is commonly adopted in many types of deep neural networks.

The Section 2, Part 2, class material is from the sixth video: Building makemore Part 5: Building a WaveNet from the above referenced truly amazing video course series by one of OpenAI's co-founders, Andrej Karpathy.

**Part 2 Class Outline:**

Section 1 Convolutional Neural Networks.

- Simple (Python) Network to classify a handwritten digit
- Local receptive fields
- Feature map: Shared weights, bias
- Pooling
- Demo code using Theano library for learning only
- Automatic gradient/backprop calculation
- Weight initialization
- Quick introduction to PyTorch library
- AlexNet: Example of a Convolutional Neural Network architecture
- Residual or Skip connection

Section 2 Basic Language Modeling.

- Vocabulary (character-level)
- Block or Context length - # of tokens (characters) considered in predicting next one
- Datasets for training, validation, test
- Multi-layer neural network
- Embedding layer, Flatten layer, Linear layer, BatchNorm1d layer, Tanh activation
- Improve Flatten layer with a hierarchical architecture
- PyTorch's cross_entropy method to get loss
- Automatic gradient calculation with Pytorch's loss.backward method
- Stochastic Gradient Descent to learn/update parameters

**Part 2 class Pre-requisites:**

The material in the Part 1 class, which requires some basic familiarity with multivariable calculus and matrix algebra, but nothing advanced. Basic familiarity with Python or similar computer language.

https://ieeeboston.org/ieee-boston-section-course-offerings

# Share Your Ideas in *The Reflector*

We invite you to contribute technical, professional development and general interest articles to *The Reflector*. These will supplement the existing material already in our publication.

Technical submissions should be of reasonable technical depth and include graphics and, if needed, any supporting files. The length is flexible; however, a four to five page limit should be used as a guide. An appropriate guide may be a technical paper in a conference proceeding rather than one in an IEEE journal or transaction.

Professional development or general interest articles should have broad applicability to the engineering community and should not explicitly promote services for which a fee or payment is required. A maximum length of two to three pages would be best.

To ensure quality, technical submissions will be reviewed by the appropriate technical area(s). Professional/interest articles will be reviewed by the Publications Committee for suitability.The author will be notified of the reviewers' decision.

The Reflector is published the first of each month. The target submission deadline for the articles should be one month before the issue date.

*Submit articles to: ieeebostonsection@gmail.com*

# Python Applications for Digital Design and Signal Processing

**Dates & Times:** **Course Kick-off/Orientation, 6 - 6:30PM ET, Thursday, May 1**
**Live Workshops: 6:00 - 7:30PM ET; Thursdays, May 8, 15, 22 and 29**
**First Video Release, Thursday, May 1, 2025, additional videos released weekly in advance of that week's live session!**

**Speaker:** **Dan Boschen**
**Location:** **Zoom**

*This is a hands-on course combining pre-recorded lectures with live Q&A and workshop sessions in the popular and powerful open-source Python programming language.*
*Course Information will be distributed on Thursday, May 1 in advance of and in preparation for the first live workshop session. A live orientation session will be held on February 29. Attendees will have access to the recorded session and exercises for two months (until May 20, 2025) after the last live session ends!*

**Pre-Recorded Videos:** The course format includes pre-recorded video lectures that students can watch on their own schedule, and an unlimited number of times, prior to live Q&A workshop sessions on Zoom with the instructor. The videos will also be available to the students for viewing for up to two months after the conclusion of the course.

**Overview:** Dan provides simple, straight-forward navigation through the multiple configurations and options, providing a best-practices approach for quickly getting up to speed using Python for modelling and analysis for applications in signal processing and digital design verification. Students will be using the Anaconda distribution, which combines Python with the most popular data science applications, and Jupyter Notebooks for a rich, interactive experience.

The course begins with basic Python data structures and constructs, including key "Pythonic" concepts, followed by an overview and use of popular packages for scientific computing enabling rapid prototyping for system design.

During the course students will create example designs including a sigma delta converter and direct digital synthesizer both in floating point and fixed point. This will include considerations for cycle and bit accurate models useful for digital design verification (FPGA/ASIC), while bringing forward the signal processing tools for frequency and time domain analysis.

**Jupyter Notebooks:** This course makes extensive use of Jupyter Notebooks which combines running Python code with interactive plots and graphics for a rich user experience. Jupyter Notebooks is an open-source web-based application (that can be run locally) that allows users to create and share visually appealing documents containing code, graphics, visualizations and interactive plots. Students will be able to interact with the notebook contents and use "take-it-with-you" results for future applications in signal processing.

**Target Audience:** This course is targeted toward users with little to no prior experience in Python, however familiarity with other modern programming languages and an exposure to object-oriented constructs is very helpful. Students should be comfortable with basic signal processing concepts in the frequency and time domain. Familiarity with Matlab or Octave is not required, but the equivalent operations in Python using the NumPy package will be provided for those students that do currently use Matlab and/or Octave for signal processing applications.

**Benefits of Attending / Goals of Course:** Attendees will gain an overall appreciation of using Python and quickly get up to speed in best practice use of Python.

**Topics / Schedule:**

***Pre-recorded lectures (3 hours each) will be distributed Friday prior to each week's workshop dates. Workshop/ Q&A Sessions are 6 - 7:30PM on the dates listed below:***

**Kick-off / Orientation: May 1**

**Class 1 May 8**

Topic 1: Intro to Jupyter Notebooks, the Spyder IDE and the course design examples. Core Python constructs.

**Class 2 May 15**

Topic 2: Core Python constructs; iterators, functions, reading writing data files.

**Class 3 May 22**

Topic 3: Signal processing simulation with popular packages including NumPy, SciPy, and Matplotlib.

**Class 4 May 29**

Topic 4: Bit/cycle accurate modelling and analysis using the design examples and simulation packages

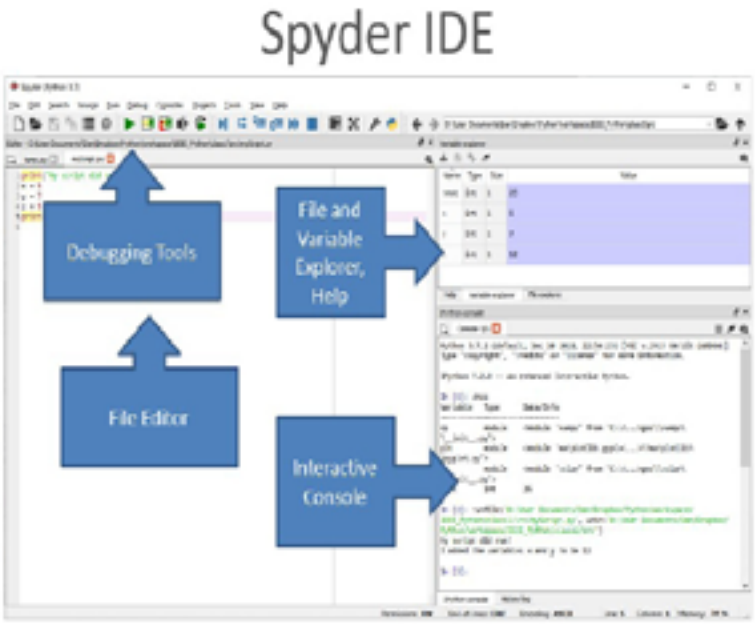
**Speaker's Bio:** Dan Boschen has a MS in Communications and Signal Processing from Northeastern University, with over 25 years of experience in system and hardware design for radio transceivers and modems. He has held various positions at Signal Technologies, MITRE, Airvana and Hittite Microwave designing and developing transceiver hardware from baseband to antenna for wireless communications systems and has taught courses on DSP to international audiences for over 15 years. Dan is a contributor to Signal Processing Stack Exchange https://dsp.stackexchange.com/, and is currently at Microchip (formerly Microsemi and Symmetricom) leading design efforts for advanced frequency and time solutions.

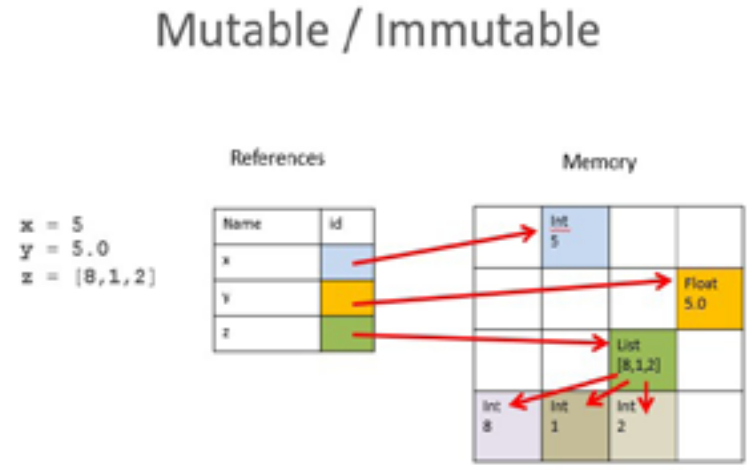
For more background information, please view Dan's Linked-In page (https://www.linkedin.com/in/danboschen/)

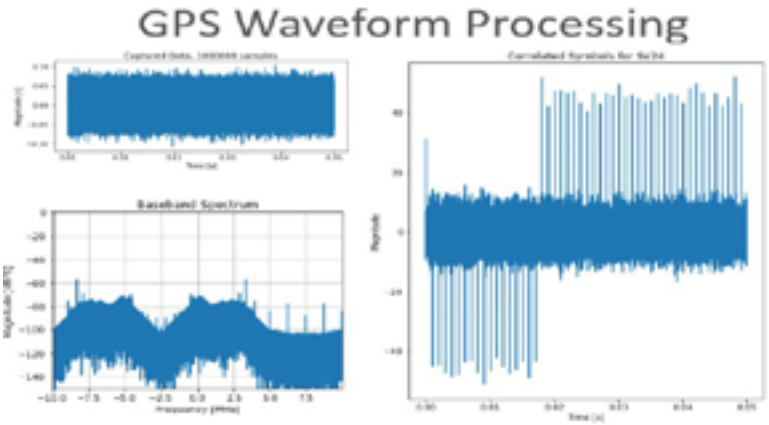
***Registration is open through the last live workshop date. Live workshops are recorded for later use.***

**Decision (Run/Cancel) Date for this Course is Thursday, April 24, 2025**

| Payment On/by | April 18 | After April 18 |
|---|---|---|
| IEEE Members | $190 | $285 |
| Non-members | $210 | $315 |




https://ieeeboston.org/ieee-boston-section-course-offerings

# DSP for Wireless Communications

**Dates & Times:** **Course Kick-off/Orientation, 6 - 6:30PM ET, Thursday, July 3**
**Live Workshops: 6:00 - 7:30PM ET; Thursdays, July 10, 17, 24, 31 & Aug. 7**
**First Video Release, Thursday, July 3, 2025 additional videos released weekly in advance of that week's live session!**

**Speaker:** **Dan Boschen**
**Location:** **Zoom**

**New Format Combining Live Workshops with Pre-recorded Video** - This is a hands-on course providing pre-recorded lectures that students can watch **on their own schedule** and an **unlimited number of times** prior to live Q&A/Workshop sessions with the instructor. Ten 1.5 hour videos released 2 per week while the course is in session will be available for up to two months after the conclusion of the course...until July 23, 2024

## Course Summary

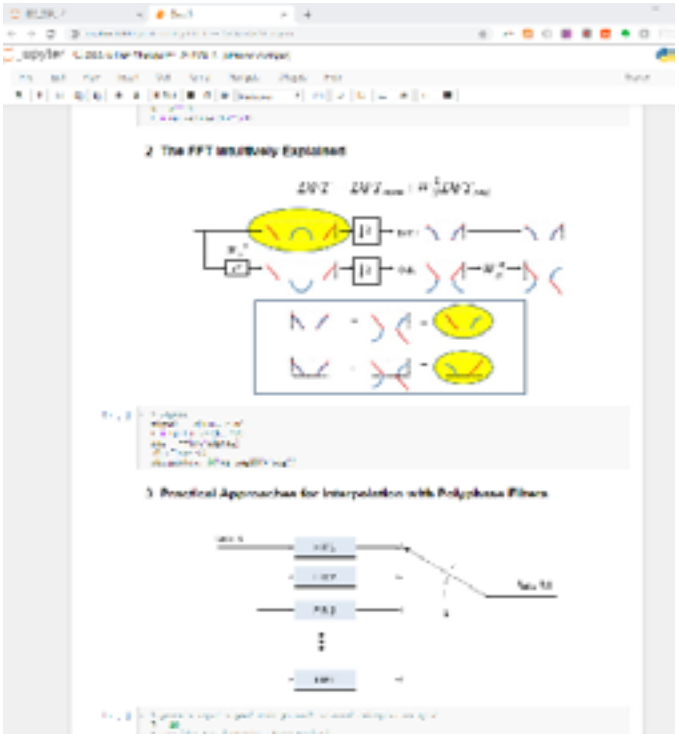
This course is a fresh view of the fundamental and practical concepts of digital signal processing applicable to the design of mixed signal design with A/D conversion, digital filters, operations with the FFT, and multi-rate signal processing. This course will build an intuitive understanding of the underlying mathematics through the use of graphics, visual demonstrations, and applications in GPS and mixed signal (analog/digital) modern transceivers. This course is applicable to DSP algorithm development with a focus on meeting practical hardware development challenges in both the analog and digital domains, and not a tutorial on working with specific DSP processor hardware.

## Now with Jupyter Notebooks!

This long-running IEEE Course has been updated to include Jupyter Notebooks which incorporates graphics together with Python simulation code to provide a "take-it-with-you" interactive user experience. No knowledge of Python is required but the notebooks will provide a basic framework for proceeding with further signal processing development using that tools for those that have interest in doing so.

This course will not be teaching Python, but using it for demonstration. A more detailed course on Python itself is covered in a separate IEEE Course "Python Applications for Digital Design and Signal Processing".

Students will be encouraged but not required to load all the Python tools needed, and all set-up information for installation will be provided prior to the start of class.



## Target Audience:

All engineers involved in or interested in signal processing applications. Engineers with significant experience with DSP will also appreciate this opportunity for an in-depth review of the fundamental DSP concepts from a different perspective than that given in a traditional introductory DSP course.

**Benefits of Attending/ Goals of Course:**

Attendees will build a stronger intuitive understanding of the fundamental signal processing concepts involved with digital filtering and mixed signal analog and digital design. With this, attendees will be able to implement more creative and efficient signal processing architectures in both the analog and digital domains. The knowledge gained from this course will have immediate practical value for any work in the signal processing field.

**Topics / Schedule:**

***Class 1: Correlation, Fourier Transform, Laplace Transform***

***Class 2: Sampling and A/D Conversion, Z –transform, D/A Conversion***

***Class 3: IIR and FIR Digital filters, Direct Fourier Transform***

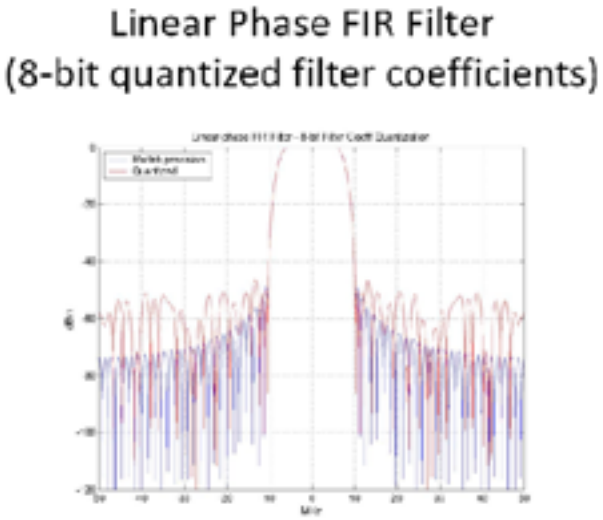
***Class 4: Windowing, Digital Filter Design, Fixed Point vs Floating Point***

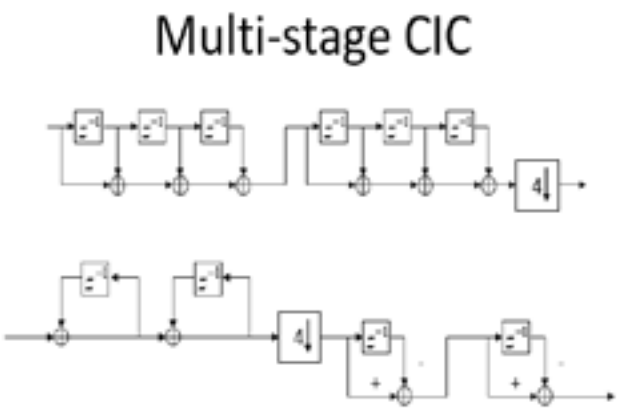
***Class 5: Fast Fourier Transform, Multi-rate Signal Processing, Multi-rate Filters***

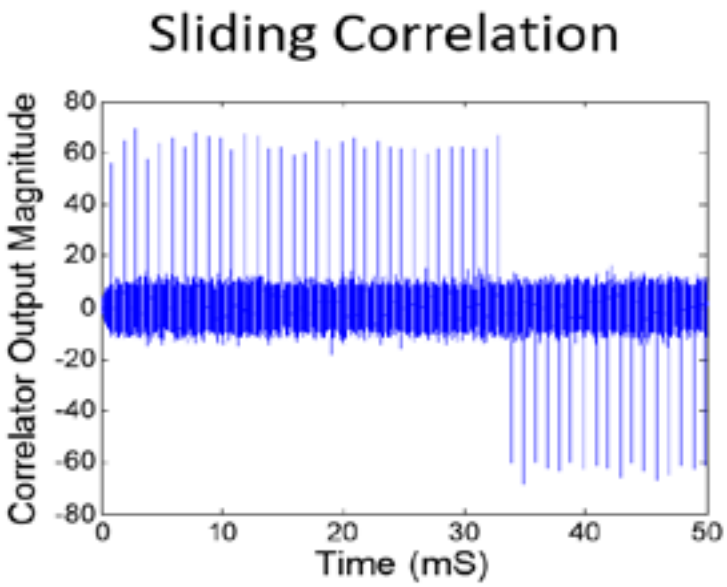
**Speaker's Bio:**

Dan Boschen has a MS in Communications and Signal Processing from Northeastern University, with over 25 years of experience in system and hardware design for radio transceivers and modems. He has held various positions at Signal Technologies, MITRE, Airvana and Hittite Microwave designing and developing transceiver hardware from baseband to antenna for wireless communications systems. Dan is currently at Microchip (formerly Microsemi and Symmetricom) leading design efforts for advanced frequency and time solutions.

For more background information, please view Dan's Linked-In page at:
http://www.linkedin.com/in/danboschen




**Decision (Run/Cancel) Date for this Course is Friday, June 27, 2025**

| Payment | By June 19 | After June 19 |
|---|---|---|
| IEEE Members | $190 | $285 |
| Non-members | $210 | $315 |

**https://ieeeboston.org/ieee-boston-section-course-offerings**

# Consumer Technology Society Call for Volunteers!

We are currently looking for volunteers who would be interested in pushing forward the mission of the Consumer Technology (CT-S), Boston Chapter. The chapter is looking for volunteers to help organize chapter meetings and help meet the needs of the local CT-S member needs.

The Boston Section is organizing chapters into groups of similar technical interest areas to pool their resources for easier and better chapter collaboration in planning the chapter events.

**If you have interest in volunteering for a chapter leadership position or are interested in learning more about what these volunteer positions may entail, please send an email to Karen Safina in the IEEE Boston Section office at, ieee-bostonsection@gmail.com**

# Engineering in Medicine & Biology Society Call for Volunteers!

We are currently looking for volunteers who would be interested in pushing forward the mission of the Engineering in Medicine & Biology Society (EMBS), Boston Chapter. The EMBS - Boston Chapter was recently approved and we're looking to make a significant impact in the area of Biomedicine, Bioengineering, and Biotechnology in the region. The chapter is looking for volunteers to help organize chapter meetings and help meet the needs of the local EMBS members.

The Boston Section is organizing chapters into groups of similar technical interest areas to pool their resources for easier and better chapter collaboration in planning the chapter events.

**If you have interest in volunteering for a chapter leadership position or are interested in learning more about what these volunteer positions may entail, please send an email to Karen Safina in the IEEE Boston Section office at, ieee-bostonsection@gmail.com.**

Aseem Singh, Marie Tupaj, Co-Chairs, Boston EMBS Chapter

# IEEE Strategic Plan

**2025-2030**

## OUR MISSION

We foster technological innovation and excellence for the benefit of humanity.

## OUR VISION

We will be essential to the global technical community and to technical professionals everywhere, and be universally recognized for the contributions of technology and of technical professionals in improving global conditions.

## CORE VALUES

- Growth & Nurturing
- Trust
- Partnership
- Integrity in Action
- Global Community Building
- Service to Humanity

## OUR GOALS

**Advance science and technology** as a leading trusted source of information for research, development, standards, and public policy

**Drive technological innovation** while promoting scientific integrity and the ethical development and use of technology

**Provide opportunities** for technology-related interdisciplinary collaboration, research, and knowledge sharing across industry, academia, and government

**Inspire intellectual curiosity** and support discovery and invention to engage the next generation of technology innovators

**Expand public awareness** of the significant role that engineering, science, and technology play across the globe

**Empower technology professionals** in their careers through ongoing education, mentoring, networking, and lifelong engagement

*IEEE will foster a collaborative environment that is open, inclusive, and free of bias and will continue to sustain the strength, reach, and vitality of our organization for future generations.*

www.ieee.org/strategic-plan

Approved by the IEEE Board of Directors, November 2024

IEEE

*Advancing Technology for Humanity*

# IEEE Boston Section Online Courses:

## (Students have 180 day access to all online, self-paced courses)

### Electronic Reliability Tutorial Series
**Full course description and registration at ,**
**http://ieeeboston.org/electronic-reliability/**

### Introduction to Embedded Linux Part I
**Full course description and registration at ,**
**http://ieeeboston.org/introduction-to-embedded-linux-part-i-el201-online-course/**

### Embedded Linux Optimization - Tools and Techniques
**Full course description and registration at ,**
**http://ieeeboston.org/embedded-linux-optimization-tools-techniques-line-course/**

### Embedded Linux Board Support Packages and Device Drivers
**Full course description and registration at ,**
**http://ieeeboston.org/embedded-linux-bsps-device-drivers-line-course/**

### Software Development for Medical Device Manufacturers
**Full course description and registration at ,**
**http://ieeeboston.org/software-development-medical-device-manufacturers-line-course/**

### Fundamental Mathematics Concepts Relating to Electromagnetics
**Full course description and registration at ,**
**http://ieeeboston.org/fundamental-mathematics-concepts-relating-electromagnetics-line-course/**

### Reliability Engineering for the Business World
**Full course description and registration at ,**
**http://ieeeboston.org/reliability-engineering-business-world-line-course/**

### Design Thinking for Today's Technical Work
**http://ieeeboston.org/design-thinking-technical-work-line-course/**

### Fundamentals of Real-Time Operating Systems
**http://ieeeboston.org/fundamentals-of-real-time-operating-systems-rt201-on-line-course/**

### Reliability Tutorial Series: Electronic Failure Mechanisms
**https://ieeeboston.org/event/ieee-ansys-reliability-tutorial-series-electronic-reliability/?instance_id=3635**

### Reliability Tutorial Series – Accelerated Life Testing for Electronics Reliability
**https://ieeeboston.org/event/ieee-ansys-reliability-tutorial-series/?instance_id=3634**

# IEEE Boston Section Volunteers Wanted!

Are you passionate about technology and eager to contribute to the advancement of your field? The IEEE Boston Section is excited to announce a call for volunteers to join our dynamic team of professionals and enthusiasts. By becoming a volunteer, you'll have the opportunity to collaborate with like-minded individuals, develop new skills, and make a meaningful impact on the local technology community.

## About IEEE Boston Section:

The IEEE Boston Section is a thriving community of engineers, researchers, students, and industry professionals dedicated to promoting technological innovation and knowledge sharing. Our section hosts a variety of events, workshops, seminars, and conferences throughout the year, providing members with opportunities to learn, network, and stay updated on the latest developments in their fields.

## Volunteer Opportunities:

We are currently seeking volunteers to help on the following committees:

***The Fellow and Awards Committee*** - activities include recommending qualified members of the Section for advancement to Fellow grade and for receipt of the various IEEE (IEEE/Region/MGA/Section) awards. Identifying and building a database of the various IEEE awards available for nomination and searching out qualified candidates, for preparing the necessary written recommendations, and for assembling all required supporting documentation and submit its recommendations directly to the appropriate IEEE body.
*Time Commitment: Meets 4 times a year for 1 – 2 hours per meeting (virtual or in person)*

***Local Conferences Committee*** - activities include identifying timely topical areas for conference development. Identify champions of these conferences to run the identified conference organizing committees. The section local conference committee is not charged with organizing and executing individual conferences.
*Time Commitment: Meets 4 times per year 1 – 2 hours per meeting (virtual or in person)*

***Professional Development & Education Committee*** - activities include identifying topics, speakers, and/or organizers for appropriate technical lecture series or seminars. The subject matter should be timely, of interest to a large segment of the membership, and well organized with regard to speakers and written subject matter.
*Time Commitment: meets 4 times per year, 1 – 2 hours per meeting (virtual or in person)*

***The Membership Development Committee*** - activities include actively promoting membership in the IEEE and shall encourage members to advance to the highest grade of membership for which they are qualified. To these ends this committee shall include wide representation within the Section territory, shall maintain lists of prospects and members qualified for advancement, and shall provide information and assistance to preparing applications.
*Time Commitment: meets 4 times per year, 1 – 2 hours per meeting (virtual or in person)*

***Student Activities Committee*** - activities include attracting a broad and diverse group of undergraduate and graduate students to IEEE and to engage them in activities that promote their own professional development as well as the ongoing growth of IEEE. The Student Activities Committee shall include among its members the IEEE Counselors at the universities, colleges, and technical institutes that lie within the Section territory. It shall be responsible for liaison with the Student Branches at these institutions and advise the Executive Committee on all other matters affecting the Student Members of the Section.
*Time Commitment: meets 4 times per year, 1 – 2 hours per meeting (virtual or in person)*

***Young Professionals Affinity Group*** - activities include organizing programs, and initiatives aimed to address the needs of early-career professionals pursuing technology-related careers in engineering, business, management, marketing, and law. This committee is committed to helping young professionals evaluate their career goals, polish their professional image, and create the building blocks of a lifelong and diverse professional network.
*Time Commitment: meets 4 times per year, 1 – 2 hours per meeting (virtual or in person)*

## Benefits of Volunteering:

Volunteering with IEEE Boston Section offers numerous benefits, including:

- Networking opportunities with professionals in your field.
- Skill development and enhancement through hands-on experience.
- Contribution to the local technology community and its growth.
- Access to cutting-edge information and discussions.

## How to Get Involved:

If you're enthusiastic about technology and want to make a difference, we invite you to join us as a volunteer. To express your interest and learn more about specific roles, please visit our website and fill out the volunteer application form. Our team will get in touch with you to discuss opportunities that align with your interests and skills.

Thank you for considering this opportunity to contribute to the IEEE Boston Section. Your dedication and passion are what drive the success of our community and its impact on the world of technology.

## Volunteer Here!

https://ieeeboston.org/volunteer/