BOSTON

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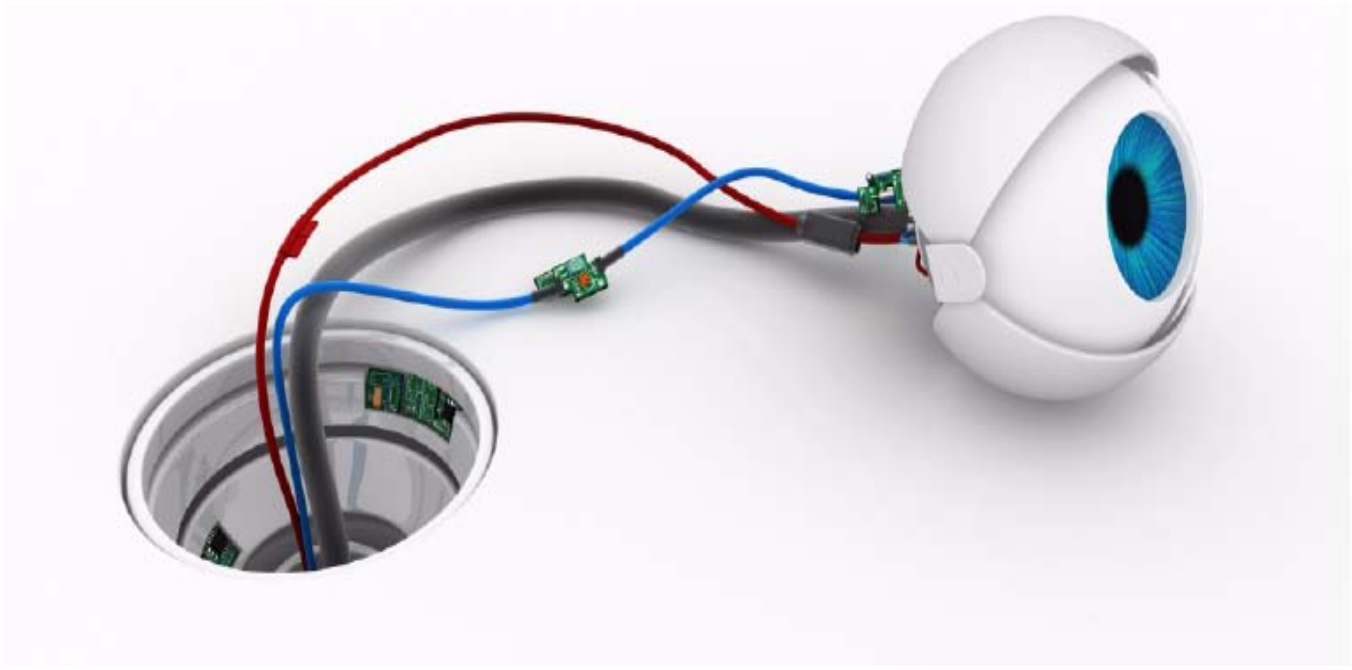

IEEE
Advancing Technology for Humanity

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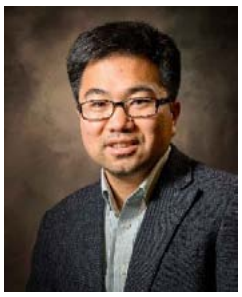


Happy 120th Anniversary!

Rui Ma, Chair, IEEE Boston Section

120 years ago, IEEE Boston Section was founded on Feb 12th, 1903. Happy 120th Anniversary to our section! The Section has a long history, and it currently serves more than 8,500 members in our region.

Today, IEEE has become the world's largest technical professional organization, with over 409,000 members in more than 160 countries, with the mission of advancing technology for humanity.

Talking about technology for humanity, I would like to refer to two big events happened recently. One is FIFA World Cup and the other is the breakthrough of nuclear fusion.

In the past month, soccer fans around the globe enjoyed 2022 FIFA World Cup hosted in Qatar (Congratulations Argentina!). In this World Cup, here are some of the new technologies used: UWB (Ultra-Wide band Sensor) and IMU (Inertial Measurement Unit) in the ball for tracking and positioning, and AI assisted real-time semi-automated offsides. Personally, the accuracy and effects of semi-automated offsite technologies used to eliminate human errors in several key scenarios amazed me. FIFA Referees Chairman Committee's Pierluigi Collina notes that VAR (video assistant referee) has already had a very positive impact on football: "We can see that the number of major mistakes has already been dramatically reduced. We expect that semi-automated offside technology can take us a step further. We are aware that sometimes the process to check a possible offside takes too long, especially when the offside incident is very tight. This is where semi-automated offside technology comes in: to offer faster and more accurate decisions." There is little doubt that the technology has changed this game. One may argue that human error is part of the game (we could leave the debate to another article), but at least the technological advancement has made the game more fair and efficient.

The breakthrough of nuclear fusion declared by National Ignition Facility (NIF) on December 5th, 2022, represented a milestone of technological achievement for humanity to end the dependence on fossil fuels. Certainly, there is still a very long way to go for practical fusion energy commercialization. But the result the scientist just achieved is a necessary first step, a decades-long quest to unleash an infinite source of clean energy.

I hope these two examples provide a glimpse and a reflection of how technological advancement can benefit the world we live in today and pave the foundation to the betterment of society and humanity tomorrow, as we welcome the year 2023!

I wish you all a happy new year!

27th Annual IEEE High Performance Extreme Computing Virtual Conference

25 - 29 September 2023

CALL FOR PAPERS

The IEEE High Performance Extreme Computing Conference (HPEC '23) will be held virtually 25 – 29 September 2023. The HPEC charter is to be the premier conference in the world on the confluence of HPC and Embedded Computing.

The technical committee seeks new presentations that clearly describe advances in high performance extreme computing technologies, emphasizing one or more of the following topics:

- AI / Machine Learning
- Graph Analytics & Network Science
- Advanced Multicore Software Technologies
- Advanced Processor Architectures
- Automated Design Tools
- Big Data & Distributed Computing
- Big Data Meets Big Compute
- Case Studies & Benchmarking of Applications
- Cloud HPEC
- Computing Technologies for Challenging Form Factors
- ASIC & FPGA Advances
- Quantum and Non-Deterministic Computing
- Data Intensive Computing
- Digital Front Ends
- Fault-Tolerant Computing
- Embedded Cloud Computing
- General Purpose GPU Computing
- High Performance Data Analysis
- Interactive and Real-Time Supercomputing
- Mapping & Scheduling of Parallel & Real-Time Applications
- New Application Frontiers
- Open System Architectures
- Cyber Analysis and Secure Computing

HPEC accepts two types of submissions:	**IMPORTANT DATES**:
1. Full papers (up to 6 pages, references not included. Additional pages can be purchased for $200/page). 2. Extended abstracts (up to 2 pages, references included).	Submission Deadline: **JUL 07, 2023** Notification of Acceptance: **AUG 15, 2023** Camera Ready Deadline: **AUG 31, 2023**

Submissions to HPEC '23 will be accepted through the CMT submission site at:
https://cmt3.research.microsoft.com/HPEC2023/

Preference will be given to papers with strong, quantitative results, demonstrating novel approaches or describing high quality prototypes. Authors of full papers can mark their preference for a poster display or an oral presentation. Presenters who wish to have hardware demonstrations are encouraged to mark their preference for a poster display. Accepted extended abstracts will be displayed as posters. Papers can be declared "student paper" if the first author was a student when doing the presented work and will be eligible for the "IEEE HPEC Best Student Paper Award." Papers should not be anonymized. All paper and extended abstract submissions need to use the approved IEEE templates. Full paper submissions with the highest peer review ratings will be published by IEEE in the official HPEC proceedings available on IEEE eXplore. All other accepted submissions and extended abstracts are published on ieee-hpec.org.

Vendors are encouraged to sign up for vendor booths. This will allow vendors to present their HPEC technologies in an interactive atmosphere suitable for product demonstration and promotion. We welcome input (hpec@ieee-hpec.org) on tutorials, invited talks, special sessions, peer reviewed presentations, and vendor demos. Instructions for submitting will be posted on the conference web site shortly.

IEEE-HPEC.org

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/

High Performance Project Management

Full course description and registration at ,
http://ieeeboston.org/high-performance-project-management-online-course/

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/

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, ieeebostonsection@gmail.com

Aakash Deliwala, Chair, IEEE Boston Consumer Technology Chapter

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 in July 2021, 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, ieeebostonsection@gmail.com.

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

IEEE Video Series

A collaborative discussion panel featuring esteemed members from the Institute of Electrical and Electronics Engineers has convened in 2021 to produce educational video presentations that embrace IEEE's mission of advancing technology for humanity.

Among the programs they've produced include "Electric Vehicles: Fun Saving Our Planet", "Greener Power For More Electric Vehicles", "Overcoming Nuclear Fears To Achieve Net Zero CO2 By 2050" and "Achieving a Net Zero Carbon Future", "Green Energy's Economic Progress", and "Net-Zero CO2 with Nuclear, Hydrogen and Geothermal". Projects currently in production include the expansive topic of futurology, with a focus on increasing the efficiency and transformation of aging electrical power generating stations and infrastructure to accommodate nuclear power; reviewing the viability of alternative energy (such as geothermal, wind and solar); and focusing on 'cleaner' fossil fuels that are more environmentally-friendly to slow the rate of climate change.

These shows are produced and directed by Lennart E. Long, IEEE Senior Life Member from the Executive Committee and Past Chair of the Boston Section; Dr. Paul H Carr, BS, MS, MIT; PhD Brandeis U, IEEE Life Fellow; Dr. Ted Kochanski, SB (MIT), Ph.D (U.Texas, Austin), IEEE Global Education for Microelectronic Systems and former Boston Section Chair; and Dr. Ken Laker, B.E. (Manhattan College), M.S. and Ph.D. (New York University), IEEE Life Fellow and past President of IEEE.

The panel is moderated by five-time Boston/New England Emmy Award-winner and television personality and star of "The Folklorist," John Horrigan. These video programs with presentations and discussions can be accessed at the IEEE Boston Section video portal at https://vimeo.com/user18608275.

We are looking for any IEEE members that would like to appear on the program in the role of presenter or discussion expert. Simply reach out to Robert Alongi at the Boston Section at, ieeebostonsection@gmail.com.

Call for Course Speakers/Organizers

IEEE's core purpose is to foster technological innovation and excellence for the benefit of humanity. The IEEE Boston Section, its dedicated volunteers, and over 8,500 members are committed to fulfilling this core purpose to the local technology community through chapter meetings, conferences, continuing education short courses, and professional and educational activities.

Twice each year a committee of local IEEE volunteers meet to consider course topics for its continuing education program. This committee is comprised of practicing engineers in various technical disciplines. In an effort to expand these course topics for our members and the local technical community at large, the committee is publicizing this CALL FOR COURSE SPEAKERS AND ORGANIZERS.

The Boston Section is one of the largest and most technically divers sections of the IEEE. We have over 20 active chapters and affinity groups.
If you have an expertise that you feel might be of interest to our members, please submit that to our online course proposal form on the section's website (www.ieeeboston.org) and click on the course proposal link (direct course proposal form link is **http://ieeeboston.org/course-proposals/** . Alternatively, you may contact the IEEE Boston Section office at ieeebostonsection@gmail.com or 781 245 5405.

- **Honoraria can be considered for course lecturers**
- Applications oriented, practical focused courses are best (all courses should help attendees expand their knowledge based and help them do their job better after completing a course
- Courses should be no more than 2 full days, or 18 hours for a multi-evening course
- Your course will be publicized to over 10,000 local engineers
- You will be providing a valuable service to your profession
- Previous lecturers include: Dr. Eli Brookner, Dr. Steven Best, Colin Brench, to name a few.

2022 IEEE High perfomance Extreme Computing Conference (HPEC) Paper Award Winners

IEEE Boston is pleased to recognize the following 2022 IEEE HPEC paper awards. Please join us in congratulating these outstanding contributors.

Best Student Paper Award
Constructing Optimal Contraction Trees for Tensor Network Quantum Circuit Simulation
(https://doi.org/10.1109/HPEC55821.2022.9926353)
Cameron A Ibrahim, Danylo Lykov, Zichang He, Yuri Alexeev, Ilya Safro

Outstanding Student Paper Award
Distributed Hardware Accelerated Secure Joint Computation on the COPA Framework
(https://doi.org/10.1109/HPEC55821.2022.9926388)
Rushi Patel, Pouya Haghi, Shweta Jain, Andriy Kot, Venkata Krishnan, Mayank Varia, Martin Herbordt

Outstanding Student Paper Award
Optimizing Performance and Storage of Memory-Mapped Persistent Data Structures
(https://doi.org/10.1109/HPEC55821.2022.9926392)
Karim Youssef, Abdullah Al Raqibul Islam, Keita Iwabuchi, Wu-chun Feng, Roger Pearce

Outstanding Student Paper Award
Processing Particle Data Flows with SmartNICs
(https://doi.org/10.1109/HPEC55821.2022.9926325)
Jianshen Liu, Carlos Maltzahn, Matthew Curry, Craig Ulmer

Outstanding Student Paper Award
AutoPager: Auto-tuning Memory-Mapped I/O Parameters in Userspace
(https://doi.org/10.1109/HPEC55821.2022.9926409)
Karim Youssef , Niteya Shah, Maya B Gokhale, Roger Pearce, Wu-chun Feng

Outstanding Student Paper Award
HuGraph: Acceleration of GCN Training on Heterogeneous FPGA Clusters with Quantization
(https://doi.org/10.1109/HPEC55821.2022.9926312)
Letian Zhao, Qizhe Wu, Xiaotian Wang, Teng Tian, Wei Wu, Xi Jin

Best Paper Award
GraphBLAS on the Edge: Anonymized High Performance Streaming of Network Traffic
(https://doi.org/10.1109/HPEC55821.2022.9926332)
Michael S Jones, Jeremy Kepner, Daniel Andersen, Aydın Buluc, Chansup Byun, K Claffy, Timothy Davis, William Arcand, Jonathan Bernays, David Bestor, William Bergeron, Vijay Gadepally, Micheal Houle, Matthew Hubbell, Hayden Jananthan, Anna Klein, Chad Meiners, Lauren Milechin, Julie Mullen, Sandeep Pisharody, Andrew Prout, Albert Reuther, Antonio Rosa, Siddharth Samsi, Jon Sreekanth, Doug Stetson, Charles Yee, Peter Michaleas

Outstanding Paper Award
Resource-Constrained Optimizations For Synthetic Aperture Radar On-Board Image Processing
(https://doi.org/10.1109/HPEC55821.2022.9926327)
Maron Schlemon, Martin Schulz, Rolf Scheiber

Outstanding Paper Award
C2QA - Bosonic (
https://doi.org/10.1109/HPEC55821.2022.9926318)
Timothy Stavenger, Eleanor Crane, Kevin Smith, Christopher T Kang, Steven Girvin, Nathan Wiebe

Outstanding Paper Award
Analyzing Multi-trillion Edge Graphs on Large GPU Clusters: A Case Study with PageRank
(https://doi.org/10.1109/HPEC55821.2022.9926341)
Seunghwa Kang, Joseph Nke, Brad Rees

Outstanding Paper Award
Benchmarking Resource Usage for Efficient Distributed Deep Learning
(https://doi.org/10.1109/HPEC55821.2022.9926375)
Nathan C Frey, Baolin Li, Joseph P McDonald, Dan Zhao, Michael S Jones, David Bestor, Devesh Tiwari, Vijay Gadepally, Siddharth Samsi

Outstanding Paper Award
Distributed Out-of-Memory SVD on CPU/GPU Architectures
(https://doi.org/10.1109/HPEC55821.2022.9926288)
Ismael Boureima, Manish Bhattarai, Maksim E Eren, Nick Solovyev, Hirsto Djidjev, Boian Alexandrov

Graph Challenge Champion
Accelerating Sparse Deep Neural Network Inference Using GPU Tensor Cores
(https://doi.org/10.1109/HPEC55821.2022.9926300)
Yufei Sun, Long Zheng, Qinggang Wang, Xiangyu Ye, Yu Huang, Pengcheng Yao, Xiaofei Liao, Hai Jin

Graph Challenge Champion
Towards Fast GPU-based Sparse DNN Inference: A Hybrid Compute Model
(https://doi.org/10.1109/HPEC55821.2022.9926290)
Shaoxian Xu, Minkang Wu, Long Zheng, Zhiyuan Shao, Xiangyu Ye, Xiaofei Liao, Hai Jin

Graph Challenge Innovation Award
FAST: A Scalable Subgraph Matching Framework over Large Graphs
(https://doi.org/10.1109/HPEC55821.2022.9926298)
Jiezhong He, Zhouyang Liu, Yixin Chen, Hengyue Pan, Zhen Huang, Dongsheng Li

Graph Challenge Innovation Award
HTC: Hybrid Vertex-parallel and Edge-parallel Triangle Counting (https://doi.org/10.1109/HPEC55821.2022.9926383)
Li Zeng, Kang Yang, Haoran Cai, Jinhua Zhou, Rongqian Zhao, Xin Chen

Graph Challenge Innovation Award
Improved Distributed-Memory Triangle Counting by Exploiting the Graph Structure
(https://doi.org/10.1109/HPEC55821.2022.9926376)
Sayan Ghosh

Graph Challenge Innovation Award
Kalman Filter Driven Estimation of Community Structure in Time Varying Graphs
(https://doi.org/10.1109/HPEC55821.2022.9926358)
Lisa JK Durbeck, Peter Athanas

Graph Challenge Honorable Mention
Sparse Deep Neural Network Inference Using Different Programming Models
(https://doi.org/10.1109/HPEC55821.2022.9926362)
Hyungro Lee, Milan Jain, Sayan Ghosh

IEEE Boston Section Social Media Links:

Twitter: https://twitter.com/ieeeboston

Facebook: https://www.facebook.com/IEEEBoston

YouTube: https://www.youtube.com/user/IEEEBostonSection

LinkedIn: https://www.linkedin.com/groups/IEEE-Boston-Section-3763694/about

Entrepreneurs' Network – 7:00PM, Tuesday, January 3

Sales Techniques and Strategies for Startups

Location: Science and Technology Center, Lasell University, Newton, MA
Registration: https://bostonenet.org/events sales-techniques-and-strategies-for-startups/
Attendees will have the option to join us in-person at Lasell University, Newton, MA or online via Zoom.

The lifeblood of any organization is sales revenue. This is especially true for startups. In addition, sales can help your startup secure investment and scale to the next level.
If you are a founder or pondering a startup of your own, you will want to join Boston ENET on Tuesday, January 3, 2023, as startup experts address "Sales Techniques and Strategies for Startups" then network with fellow founders, investors, and entrepreneurs from The ENET Community!

As a startup founder, you are the first salesperson for your organization. What does that look like? The event kicks off with Terry Davis, a founder of a sales consulting firm which helps startups and small businesses navigate how to prospect, qualify leads, and generate sales for success. Terry will walk us through the first sales steps, including:

- Implementing Marketing Research and Branding into Sales
- Prospecting and Cold Calling to Build a Sales Pipeline
- Compensation for Sales Professionals
- Time Management and Discipline

After initial sales it is time to grow the business, you will need to build a sales team. Our next expert panelist will show you how. Jay Webb, a founder of a staffing agency specializing in helping startups scale their sales teams, will share his experience helping startups with strategies to build sales efforts and sales team, including:

- Hiring the First Salesperson
- Sales Processes with SOPs and Playbooks
- Scaling Sales and Go-To-Market Teams
- Determining Impactful and Sustainable Sales Compensation

And finally, our expert panel will conclude with an inspiring sales success story showcasing a startup that focuses on this event's topic: Sales! Successful startups often transcend their founders into a world of affluent opportunity, and Sarah Milby exemplifies just that. Sarah will share her journey of pursuing her passion, which enabled her to fulfill her dream of becoming a founder. This panel will display just how she managed to scale Valor Performance from the ground up; developing a thriving business that has gained national attention and distributing leadership coaching to some of the highest performing sales professionals in the world.

- From Solo to Scale: A Founder Start-up Success Story
- How Sales Experience Catalyzed the Formation of Valor
- Experience as an Athlete Translate into Startup Sustainability
- What Top Sales Leaders Discuss With Their Performance Coach

After each presentation, our expert panelists will answer your questions during what is anticipated to be lively Q&A session, moderated by Maureen Mansfield and Rob Durant, both who have extensive experience in sales and startups. Finally, these expert speakers will be available to meet you personally during the concluding networking session.

Book raffle at this event!
We will be giving away the book, Entering Startupland, to one lucky attendee. You must be in attendance in -person at this event to be entered into the raffle!
More information:
This is a hybrid event. You may choose to participate in-person or online.
In-person Participation (check-in begins at 6:00 PM):
LOCATION: Science & Technology Center, Lasell University, Newton, MA (google map: https://tinyurl.com/2t-wh785c) Conveniently located at the junction of Rte 90 and 95.
PARKING: Free parking is available.
REFRESHMENTS: Pizza will be served.

Online Participation:
Zoom links will be sent to all registrants after registration.
COST AND RESERVATIONS: This event is free for ENET members and $10 for non-members. Click here to learn how to become a member. To expedite sign-in for the event, we ask that everyone — members as well as non-members — pre-register. If you cannot pre-register, you are welcome to register in person at the door while seats are available.

Agenda
7:00 PM - Introduction, ENET Chairperson's announcements
7:10 PM - eMinute Pitch, up to 3 Startup pitches
7:25 PM - Expert Panel, 3 expert speakers on the night's topic
8:15 PM - Moderator Q & A speaker panel and Audience
8:30PM-9PM - Networking, panelists will be available afterward for responses to individual questions.

Speakers

Terry Davis, Business Development Director, Prime Marketing Experts
Terry Davis is a Business Development Director with Prime Marketing Experts, a full-service digital marketing agency that accelerates companies' growth. He provides advice to businesses on what business development and digital marketing services best attract, convert, and retain customers.

As a content writer, Terry provides well-researched, SEO-friendly copy. The content he produces for his clients focuses on providing readers with the information they need and a call to action to help his clients turn prospects into clients of their own. Terry also provides job search assistance. Because of his enduring partnerships with recruiters, coaches, human resource managers, and talent acquisition specialists, Terry helps his clients to design resumes that capitalize on opportunities in their field of interest.

Terry is a proud US Army veteran, and he also runs a martial arts facility that teaches discipline and self-defense to children and adults. https://www.primemarketingexperts.com/
https://www.linkedin.com/in/terry-davis-028776a2/

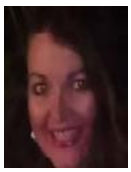
Jay Webb, Founder & CEO, j.David Group
Jay Webb is the Founder & CEO of the j.David Group, a search firm that helps start-up and growth-stage companies recruit and build their go-to-market teams. He's also the host of The GOATS of Growth podcast, where he interviews CEO's, Founders, Sales Leaders, and other members of the GTM about their approaches to vision, leadership, strategy, and execution. Jay is married with 2 kids and has a dog named Buster.
https://www.linkedin.com/in/jaydwebb/

Sarah Milby, Founder & CEO, Valor Performance
Sarah Milby is the Founder and CEO of Valor Performance, Inc. an enterprise software company that supports some of the highest performing global organizations in strategically igniting the best in every leader, manager and team. Delivered through its high-tech, high-touch digital platform, Valor provides the skills, analytics and coaching for professionals to stay on top of their game, even under pressure.

Prior to starting Valor, Sarah was an Entrepreneur in Residence (EIR) at F-Prime Capital Partners. She also launched Grokker's enterprise division as VP of Business Development and Partnerships, and lead health plan relationships for Castlight Health from start-up through its IPO in 2014. Sarah has a Yale University B.A., a Harvard Kennedy School of Government MPA, and a Stanford University Graduate School of Business MBA.

Sarah's experiences as a business leader and athlete gave her the inspiration and conviction to start Valor, dedicated to supporting and igniting the best in every leader, team and organization.
https://www.linkedin.com/in/sarahmilby/

Moderator



Maureen Mansfield, Founder, ~ Protect Your Passion ~ Vice-Chair Alliance Partners, ENET
Maureen Mansfield is an entrepreneur with a deep passion for all things innovative. Maureen is the Founder of ~ Protect Your Passion ~ always and is on a mission to educate entrepreneurs about protecting their passion from founding a

company, to scaling their startup, including intellectual property patent protection, through commercialization and exits. After sharing her startup story as an expert panelists at Boston ENET (ENET), Maureen was asked to volunteer and currently serves as Vice-Chair, Alliance Partners, with the IEEE Boston ENET.

With over 20 years of working with founders and business owners, ranging from small businesses to F50s, Maureen brings wisdom from business development (marketing and sales), contracts, and building proprietary systems to automate data that has helped companies to enjoy their most profitable year to date, including a coveted award by a F50 that created a new, profitable cost center nationwide and saved over $1 million to its bottom line annually.

Maureen holds several degrees from the University of Iowa and Harvard University, with selective admission into each program, along with scholarships and honors. Never forgetting her roots and those who have helped along the way, Maureen knows the value of giving back and has volunteered through her alumni, communities, and church, including the founding of two holiday charities that continue today. After being offered a full-scholarship for music, Maureen continues to play the alto saxophone, thanks to her mother who bought her that first saxophone.
https://linkedin.com/in/maureenmansfield7813692020

Co-organizer

Rob Durant, Founder, Flywheel Results LLC
Rob Durant "At my core, I am a teacher." A results-driven enablement leader with an exceptional track record, especially at fast-moving tech start-ups, my true nature is helping, mentoring, guiding. My company, Flywheel Results LLC, specializes in helping start-ups build new sales and go-to-market teams, establish impactful methodologies, and flourish through their hyper-growth phase. I can be seen weekly on The Digital Download, the longest running weekly business talk show on LinkedIn.
https://www.linkedin.com/in/robdurant/

Entrepreneurs' Network – 7:00PM, Tuesday, January 17

Market Sizing, Forecasting and Market Research for Innovative Products

Location: CIC, One Broadway, Cambridge, MA 02142
Registration: https://bostonenet.org/events/market-sizing-forecasting-and-market-research-for-innovative-products/
Attendees will have the option to join us in-person at CIC, One Broadway, Cambridge, MA 02142 or online via Zoom.
There are many reasons startups fail. Among the frequently cited reasons is the failure to research customer needs and conduct a competitive analysis to learn about the strengths and weaknesses of rival products. To avoid this, you need to conduct market research.

Market research helps you test your ideas. You can use it to find out if there is sufficient demand for your product and what your core product features should be like. You can also use it to gather information to make decisions on pricing, marketing strategies, product messaging, and more.

Conducting market research also helps you in fundraising. Investors need to know that there's a viable market for you to enter, meet demand and make money before they will decide to invest in your startup. The findings in market research will give them the evidence that they need to make that decision.

Our panelists will discuss
- Market research to validate a new idea before start building or implementing
- Commercial analysis in life sciences companies, forecasting and options for outsourcing
- Market research methods and tools
- Tips, stories and lessons learned from product launch experiences in tech and life sciences industries
- A Q & A session will follow the panel presentations.

More information:
This is a hybrid event. You may choose to participate in-person or online.
In-person Participation (check-in begins at 6:00 PM):
LOCATION: CIC, One Broadway, Cambridge, MA 01803 – a valid picture ID is required to enter the building!
TRANSPORTATION: Across the street from Kendall Square T station on the Red Line.
PARKING: Low flat rate parking available after 5pm
REFRESHMENTS: Pizza will be served.

Online Participation: Zoom links will be sent to all registrants after registration.

Cost and Reservation: This event is free for ENET members, $5 for CIC members and $10 for non-members. ENET members will also have the opportunity to view a recording of this webinar if you are unable to attend or wish to view it again. Click here to learn how to become a member.

To expedite sign-in for the event, we ask that everyone — members as well as non-members — pre-register. If you cannot pre-register, you are welcome to register in person at the door while seats are available.

Venue Sponsor
CIC believes in the entrepreneur. We recognize that invention propels innovation, density spurs collaboration, and a shared purpose drives a thriving community. CIC provides a home from which to work, allowing innovators to easily access resources and create substantive, positive global impact. Request to chat with a workspace expert about CIC's flexible workspace offering, or try out a complimentary, one-time day of coworking.

Agenda
7:00PM - Introduction, ENET Chairperson's announcements
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7:25PM - Expert Panel, up to 3 expert speakers on the night's topic
8:15PM - Moderator and Audience Q & A with the speakers
8:30PM -9:00PM - Networking, speakers will be available afterward for responses to individual questions.

Speakers

Ameeta Soni, President, Altek Consulting & Interim CMO, Technology Companies

Ameeta has held many roles with technology startups – marketer, founder, consultant, investor, board member, and advisor. She co-founded fitness app provider FitTrace and founded PLM software company Aanza, RFID technology services company Aanza AutoID Group, and management consulting firm Altek Consulting. She serves on Maroon Venture Partners Fund's investment committee and holds board roles with several portfolio companies. Ameeta was CMO at engage2learn, PlatformQ Health, and VFA (Fortive). Her interim CMO assignments include Assemble Systems (Autodesk), DocASAP (Optum), and Form.com. She is the past chair of the MIT Enterprise Forum Cambridge, a Charter Member at TiE Boston, and an advisor to several early-stage companies. She received her MBA from the University of Chicago.
https://www.linkedin.com/in/ameetasoni

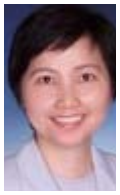
Arthur Hillier, CEO, Amasa Therapeutics; CEO, Antyllus Therapeutics; Commercial strategy consultant

Arthur Hiller is a Boston-based biopharma executive. Over the last decade, he has been CEO of two early stage companies in the areas of drug discovery and cardiovascular medical devices. He currently provides consulting and business advisory support, and serves in fractional senior executive operating and mentoring roles for a wide range of start-up and early stage companies in the Boston area. His career spans more than 35 years of experience across a wide range of functional areas and sectors of the life sciences and healthcare technology industry, where he has held executive positions in general management, marketing, sales, sales management, and business development at Millennium Pharmaceuticals, Inc., Merck and Co, and two other large, multinational pharmaceutical companies.
https://www.linkedin.com/in/arthurhiller/

Jose Malpartida, Chief Product Officer, Latino Tech Executive

Jose Malpartida is a seasoned technology executive with a track record of envisioning and executing forward-thinking products and experiences. He most recently served as CPO of Aura, a digital security and intelligent safety solutions company. Before that, Jose was CPO of Bond, an innovative personal security startup. Other product leadership roles include building international product management teams and launching new growth categories for Wayfair, as well as launching and scaling Amazon's Marketplace and Fulfillment by Amazon (FBA) businesses in Mexico. Jose received his MBA from Tuck School of Business at Dartmouth College.

Moderator



Millie Kwan, President, The WSI Touch; Chair, ENET

Millie is Founder and President of The WSI Touch, a digital marketing agency that has been serving small to medium-sized businesses in Greater Boston since 2009. Millie has over 20 years' experience in IT development, management, education and research. She received her Doctor of Business Administration degree from Boston University and M.S. in Computer Science from Washington University in St Louis. She has taught at Babson College, University of Hong Kong and Boston University. She has published research on knowledge management, process redesign and workflow management. In her early career, she specialized in the field of library automation and has led the implementation of various library systems for the University of Rhode Island, the HELIN Library Consortium of Rhode Island, and Washington University in St Louis.
https://linkedin.com/in/milliekwan

Co-organizer

Roger Frechette, PhD, Principal and Founder, NEPAssociates, LLC

Roger is a life sciences consultant/advisor, helping early-stage life science companies to succeed and to grow. His work with clients leverages an extensive global network and multi-disciplinary insights derived from >20 years of experience in the business of life sciences, calibrated with an extensive science background. His career has encompassed success as a business executive, project/alliance manager and entrepreneur, and as a scientist, including leadership of discovery/preclinical development teams resulting in two FDA approved therapeutics. Roger has been a volunteer with Boston ENET since 2014, in addition to supporting start-ups as a mentor with MassBio, and other Greater Boston Area entrepreneur support groups. He also a mentor with 12Ronnies, a global early-stage startup mentorship organization.
https://www.linkedin.com/in/rogerfrechette/

Computer Society, GBC/ACM and BostonCHI – 7:00PM, Thursday, January 19

Using Outcomes as a Spark for UX

Jared M. Spool, Maker of Awesomeness at Center Centre - UIE

Location: Online only this year via Zoom
Admission is free, but you must register at https://www.eventbrite.com/e/jared-spool-using-outcomes-as-a-spark-for-ux-tickets-480799874367?aff=ieee

What if you could generate excitement about delivering great user experiences without having to explain what UX is?

Imagine this: you're talking with your development and product partners about UX outcomes and they understand the value in starting with the end-in-mind. Not only do they understand, they are excited about what will happen in your users' and customers' lives because you've delivered a great UX - together.

In this session, you'll uncover the proven secrets behind sparking enthusiasm for delivering great UX. You'll discover how an outcome-driven approach is a game changer for UX leaders like yourself.

You'll explore how to:
... Identify the outcomes that best spark excitement amongst the developers, product managers, and stakeholders you work with every day.
... Scope your outcomes to push your team to take on challenges they've resisted in the past.
... Show what it means to be ready-to-ship through the lens of great user experiences.

About Jared Spool
Jared M. Spool is a Maker of Awesomeness at Center Centre - UIE. Center Centre is the school he started with Leslie Jensen-Inman to create industry-ready User Experience Designers. UIE is Center Centre's professional development arm, dedicated to understanding what it takes for organizations to produce competitively great products and services.

In the 43 years he's been in the tech field, Jared has worked with hundreds of organizations, written two books, published hundreds of articles and podcasts, and tours the world speaking to audiences everywhere. When he can, he does his laundry in Andover, Massachusetts.

For 23 years, Jared was the conference chair and keynote speaker at the now retired annual UI Conferences and UX Immersion Conferences; Jared still manages to squeeze in a fair amount of writing time. He is a co-author of Web Usability: A Designer's Guide and Web Anatomy: Interaction Design Frameworks that Work.
You'll find Jared's writing at uie.com. You can also follow his adventures on Twitter at @jmspool, where he tweets daily about UX design, design strategy, design education, and the wondrous customer service habits of the airline industry.

This is a joint event of GBC/ACM, the Boston Chapter of the IEEE Computer Society, and BostonCHI.

This meeting will be held online only due to the ongoing pandemic.

Up-to-date information about this and other talks is available online at https://ewh.ieee.org/r1/boston/computer/. You can sign up to receive updated status information about this talk and informational emails about future talks at https://mailman.mit.edu/mailman/listinfo/ieee-cs, our self-administered mailing list.

For more information contact Peter Mager (p.mager at computer.org)

IEEE and IEEE REGION 1 AWARDS Announced

2023 IEEE Technical Field Awards

IEEE Control Systems Award: To recognize outstanding contributions to control systems engineering, science, or technology.

Naomi Ehrich Leonard (Princeton/Central Jersey Section): "For contributions to applications and theory for control of nonlinear and multiagent systems."

IEEE Robotics and Automation Award: The award is presented for contributions in the field of robotics and automation.

Daniela Rus (Boston Section): "For pioneering contributions to the design, realization, and theoretical foundations of innovative distributed, networked autonomous systems."

IEEE Life Members Affinity Group Awards

Regional LMAG Achievement Awards

Michael A. Miller: Region 1 – North New Jersey LMAG, Chair

Life Members Individual Service Awards - This is the first year that the LMC has awarded the Global Life Members Individual Service Award and Regional Life Member Individual Service Awards to those Life Members who have provided exceptional and valuable service to the Life Member organization.

Lou Luceri: Region 1

Region 1 Awards:

The William Terry Distinguished Service Award: This award is intended to recognize those whose personal efforts have provided leadership, creativity, guidance, hard work and inspiration in a wide range of IEEE activities over a significant and sustained period of time.

Santosh K. Kurinec (Rochester) – For IEEE service, and outstanding research and teaching semiconductor technology and promoting semiconductor workforce generation

Technological Innovation (Academic): For distinguished development, advancement and pursuit of the IEEE's technical objectives

Hengyong Yu (Boston) – For pioneering contributions and international leadership in tomographic imaging, especially interior tomography and machine learning-based tomographic imaging

Wenliang Du (Syracuse) – For contributions in cybersecurity education

Oliver Kennedy (Buffalo) – For contributions to incremental view maintenance, understandable reproducible data science, and outreach efforts

Karthik Dantu (Buffalo) – For technical contributions to visual localization and mapping technologies for mobile systems and robotics

Technological Innovation (Industry or Government): For significant patents, discovery of new devices, development of applications or exemplary contributions to industry or government

Yuanqiu Luo (Princeton/Central Jersey) – For outstanding innovations on high-speed optical access system design and development, and leadership in driving international standards to promote broadband access worldwide

Yutaka Sugawara (Mid-Hudson) – For sustained contributions to architecture and design of world-class high performance computing systems

Outstanding Teaching in an IEEE Area of Interest (University or College): For outstanding contributions to education in an area of interest to the IEEE

Bina Ramamurthy (Buffalo) – For outstanding contributions to global education in the emerging area of blockchain technology

Outstanding Teaching in an IEEE Area of Interest (Pre-University or College): For improving communications between the IEEE and a student body; for support and service to a student body; for service and leadership to the student community

Chitra M. Venkatraman (North Jersey) – For significant contributions to employment networking, career development, women in engineering, and pre-university STEM education

Outstanding Support for the Mission of the IEEE, MGA, Region 1 and/or Section: For outstanding service to the IEEE at the Chapter, Section, Region, MGA and/or National level

Martin L. Cohen (Providence) – For outstanding and steadfast performance as Section Chair, Treasurer, and chair of numerous committees and events during two decades of service

Fatimah Shehadeh-Grant (New Jersey Coast) – For contributions in increasing STEM awareness among local pre-university students and promoting WIE initiatives

Michael Chirico (Buffalo) – For valued service and outstanding contributions to the IEEE Buffalo Section

Introduction to Quantum Software Development

Web-based Course with live Instructor!

Times & Dates: 6 - 8PM ET, March 7, 9, 14, 16, 21, 23, 28, 30

Speaker: Richard Preston, MITRE Corporation

Course Format: Live lectures interspersed with lab exercises in Visual Studio

MITRE | SOLVING PROBLEMS FOR A SAFER WORLD®

This course is organized by the MITRE Corporation and being offered as part of the IEEE Boston Section's professional development program.

Summary:
In recent years, there has been an enormous surge of interest in quantum computing. Government, academic, and commercial organizations have spent billions of dollars attempting to create reliable, general-purpose quantum computers. These systems leverage the unusual properties of quantum mechanics to perform computations that could never be performed on conventional computers in our lifetime. Such calculations have a wide range of applications, including:

- Breaking certain cryptographic algorithms
- Engineering new materials
- Simulating how systems behave in extreme environments
- Finding new medicines that target specific diseases
- Building secure transmission channels that cannot be eavesdropped

How do quantum computers accomplish these bold claims? How could we use this technology to tackle our most difficult challenges? And how do programmers like you access it? In this course, we will explore the answers to these questions and help you unlock the ability to write quantum software and simulate quantum algorithms. Students should bring some basic programming experience and an open mind as we delve into a new computing paradigm.

Format: Live virtual lectures with self-paced exercises.

Target Audience: Practicing software engineers.

Objective: Develop the practicable skills needed to implement and study quantum algorithms in software.

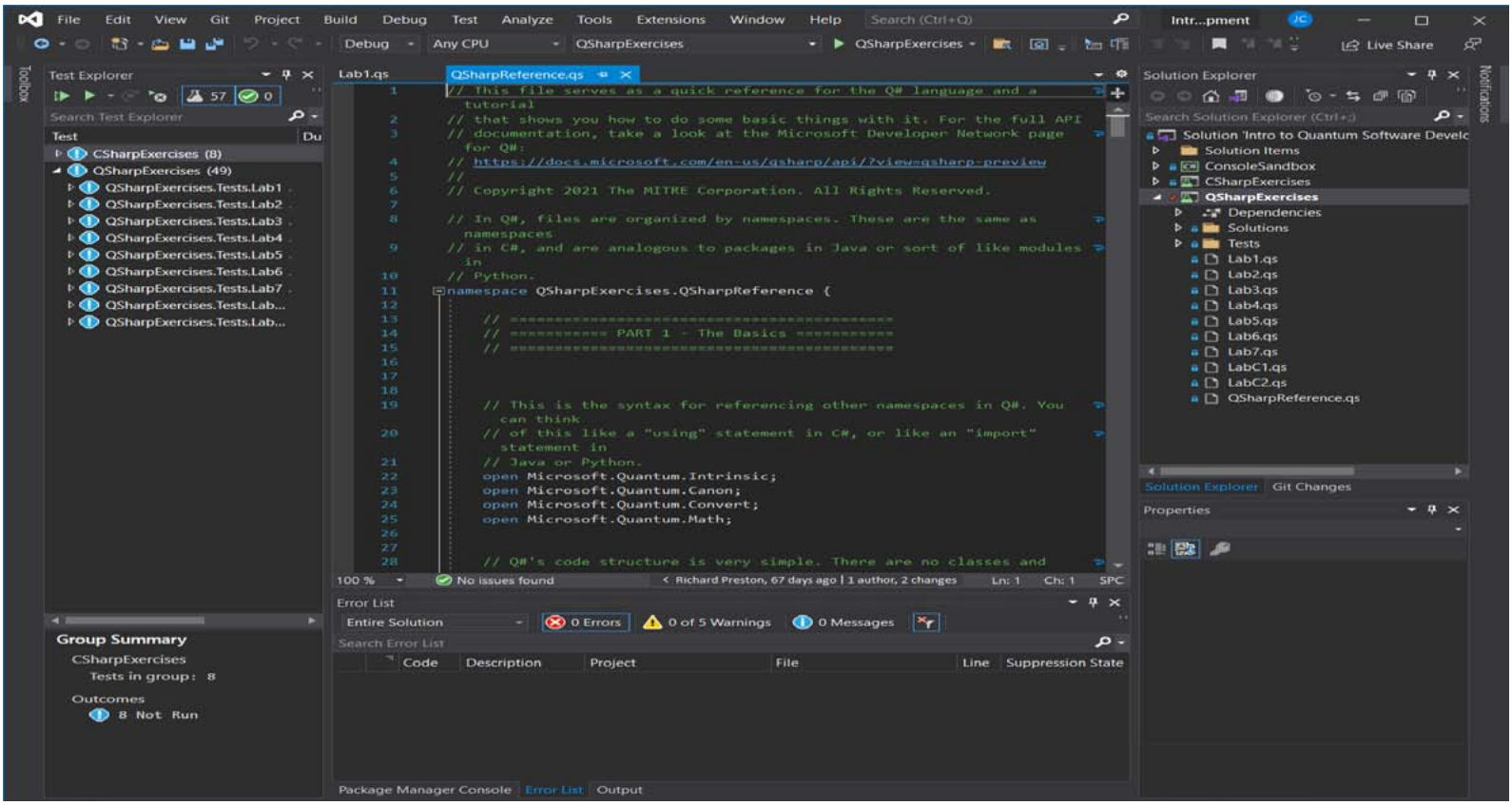
Prerequisites:
Students are assumed to have exposure to the following concepts:

- Complex numbers
- Vectors & Matrices
- Bra-ket and tensor notation
- Digital information
- Endianness
- Digital logic
- Low- and high-level programming
- Visual Studio

Learning materials covering the course prerequisites will be provided in advance. This way, students can fill in any gaps in their knowledge and everyone starts on the same page on day 1.

Outline:
The course consists of live lectures interspersed with lab exercises in Visual Studio. All the materials are available in the form of an online course guide, so students can learn at their own pace both during and outside of class time. To mitigate technical difficulties, each student is provided remote access to a virtual machine with a preconfigured environment. The following topics are covered:

- Qubits and quantum gates
- Multi-qubit systems
- Quantum circuits
- Quantum protocols
- Quantum algorithms
- Q# programming



The Visual Studio exercises are Q# operations that must be implemented correctly for a unit test to pass. This approach allows students to get immediate feedback on how well they understand a concept. We use the Discord platform as a course forum, where students can ask questions at any time and collaborate on solving the coding challenges.

Instructor Bio:

Richard Preston is a Network Analytics Group Leader in the Infrastructure and Networking Innovation Center at MITRE. He also serves as Co-Chair of MITRE's STEM Council, a group that supports STEM education initiatives across the company. He has been collaborating with Joe on quantum software research since 2019 and seeks to raise awareness and proficiency around this new technology.

Decision (Run/Cancel) Date for this Course is Wednesday, March 1, 2023

Payment by/on Feb 24
IEEE Members $250
Non-members $295

Payment After Feb 24
IEEE Members $270
Non-members $325

https://ieeeboston.org/event/ieeequantumsoftware/?instance_id=3387

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IEEE Boston Section is the largest, most active, and technically diverse section in the U.S.
Comprised of Engineers, scientists and professionals in the electrical and computer sciences and engineering industry

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Contact IEEE Boston Section at ieeebostonsection@gmail.com for more information on rates for Online Advertising

Call for Course Speakers/Organizers

IEEE's core purpose is to foster technological innovation and excellence for the benefit of humanity. The IEEE Boston Section, its dedicated volunteers, and over 8,500 members are committed to fulfilling this core purpose to the local technology community through chapter meetings, conferences, continuing education short courses, and professional and educational activities.

Twice each year a committee of local IEEE volunteers meet to consider course topics for its continuing education program. This committee is comprised of practicing engineers in various technical disciplines. In an effort to expand these course topics for our members and the local technical community at large, the committee is publicizing this CALL FOR COURSE SPEAKERS AND ORGANIZERS.

The Boston Section is one of the largest and most technically divers sections of the IEEE. We have over 20 active chapters and affinity groups.
If you have an expertise that you feel might be of interest to our members, please submit that to our online course proposal form on the section's website (www.ieeeboston.org) and click on the course proposal link (direct course proposal form link is **http://ieeeboston.org/course-proposals/** . Alternatively, you may contact the IEEE Boston Section office at ieeebostonsection@gmail.com or 781 245 5405.

- **Honoraria can be considered for course lecturers**
- Applications oriented, practical focused courses are best (all courses should help attendees expand their knowledge based and help them do their job better after completing a course
- Courses should be no more than 2 full days, or 18 hours for a multi-evening course
- Your course will be publicized to over 10,000 local engineers
- You will be providing a valuable service to your profession
- Previous lecturers include: Dr. Eli Brookner, Dr. Steven Best, Colin Brench, to name a few.

Digital Signal Processing (DSP) for Software Radio

Dates & Times: **Live Workshops: 6 - 7:30PM EST; Thursdays, Jan. 26, Feb. 2, 9, 16, 23**
First Video Release and orientation, 6 - 6:30PM January 19, 2023,
additional videos released weekly in advance of that week's live session!

Speaker: **Dan Boschen**

Location: **Zoom**

Last Notice Before Course Begins, Register Now!!!

Course Information will be distributed on Thursday, January 19, 2023 in advance of and in preparation for the first live workshop session.
Attendees will have access to the recorded session and exercises for two months (until April 23) after the last live session ends!

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.

Course Summary This course builds on the IEEE course "DSP for Wireless Communications" also taught by Dan Boschen, further detailing digital signal processing most applicable to practical real-world problems and applications in radio communication systems. Students need not have taken the prior course if they are familiar with fundamental DSP concepts such as the Laplace and Z transform and basic digital filter design principles.

This course brings together core DSP concepts to address signal processing challenges encountered in radios and modems for modern wireless communications. Specific areas covered include carrier and timing recovery, equalization, automatic gain control, and considerations to mitigate the effects of RF and channel distortions such as multipath, phase noise and amplitude/phase offsets.

Dan builds an intuitive understanding of the underlying mathematics through the use of graphics, visual demonstrations, and real-world applications for mixed signal (analog/digital) modern transceivers. This course is applicable to DSP algorithm development with a focus on meeting practical hardware development challenges, rather than a tutorial on implementations with DSP processors.

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 routinely taught by Dan titled "Python Applications for Digital Design and Signal Processing".

All set-up information for installation of all tools used will be provided prior to the start of class.

Target Audience: All engineers involved in or interested in signal processing for wireless communications. Students should have either taken the earlier course "DSP for Wireless Communications" or have been sufficiently exposed to basic signal processing concepts

if you are uncertain about your background or if you would like more information on the course.

Benefits of Attending/ Goals of Course:
Attendees will gain a strong intuitive understanding of the practical and common signal processing implementations found in modern radio and modem architectures and be able to apply these concepts directly to communications system design.

Topics / Schedule:
Class 1: DSP Review, Radio Architectures, Digital Mapping, Pulse Shaping, Eye Diagrams

Class 2: ADC Receiver, CORDIC Rotator, Digital Down Converters, Numerically Controlled Oscillators

Class 3: Digital Control Loops; Output Power Control, Automatic Gain Control

Class 4: Digital Control Loops; Carrier and Timing Recovery, Sigma Delta Converters

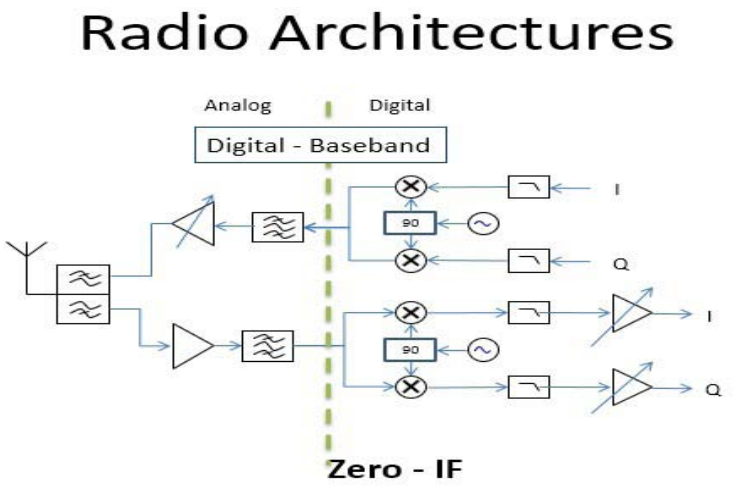
Class 5: RF Signal Impairments, Equalization and Compensation, Linear Feedback Shift Registers

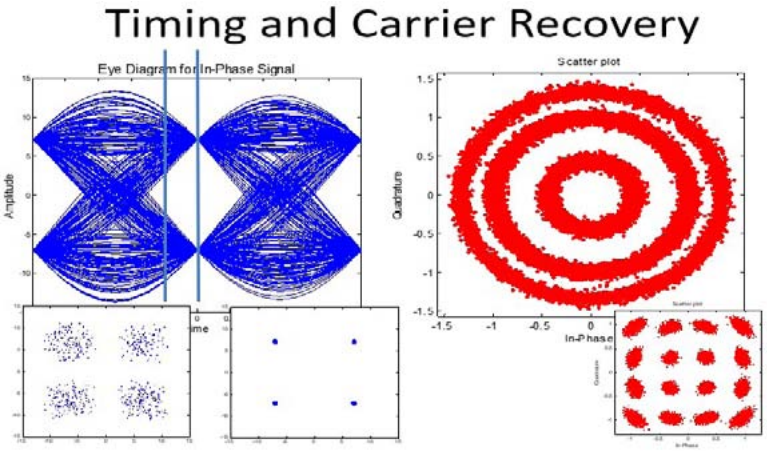
Speaker's Bio:
Dan Boschen has a MS in Communications and Signal Processing from Northeastern University, with over 25 years of experience in system and hardware design for radio transceivers and modems. He has held various positions at Signal Technologies, MITRE, Airvana and Hittite Microwave designing 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.

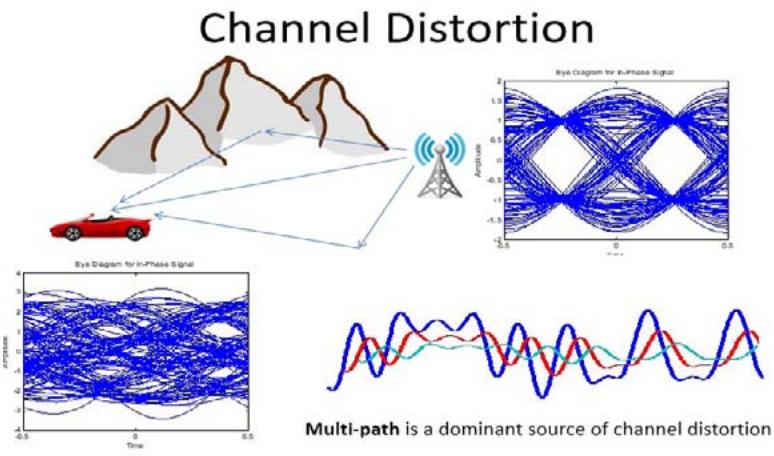
Decision (Run/Cancel) Date for this Course is Monday, January 16, 2023

IEEE Members	**$190**
Non-members	**$210**

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







https://ieeeboston.org/event/dsps radio/?instance_id=3302

Introduction to Practical Neural Networks and Deep Learning (Part I)

Web-based Course with live Instructor!

Times & Dates: 9AM - 12:30PM ET, Saturday, March 18, 2023 **(New Date!)**

Speaker: CL Kim

Course Format: Live Webinar, 3 hours of instruction!

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

Reference book: "Neural Networks and Deep Learning" by Michael Nielsen, http://neuralnetworksanddeeplearning.com/

This Part 1 and the planned Part 2, (to be confirmed) series of courses will teach many of the core concepts behind neural networks and deep learning.

More from the book introduction: We'll learn the core principles behind neural networks and deep learning by attacking a concrete problem: the problem of teaching a computer to recognize handwritten digits. …it can be solved pretty well using a simple neural network, with just a few tens of lines of code, and no special libraries."

"But you don't need to be a professional programmer."

The code provided is in Python, which even if you don't program in Python, should be easy to understand with just a little effort.

Benefits of attending the series:

* Learn the core principles behind neural networks and deep learning.
* 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 the theory, with worked-out proofs of fundamental equations of backpropagation for those interested.
* Run straightforward Python demo code example.

The demo Python program (updated from version provided in the book) can be downloaded from the speaker's GitHub account. The demo program is run in a Docker container that runs on your Mac, Windows, or Linux personal computer; we plan to provide instructions on doing that in advance of the class.

(That would be one good reason to register early if you plan to attend, in order that you can receive the straightforward instructions and leave yourself with plenty of time to prepare the Git and Docker software that are widely used among software professionals.)

Course Background and Content: This is a live instructor-led introductory course on Neural Networks and Deep Learning. It is planned to be a two-part series of courses. The first course is complete by itself and covers a feedforward neural network (but not convolutional neural network in Part 1). It will be a pre-requisite for the planned Part 2 second course. The class material is mostly from the highly-regarded and free online book "Neural Networks and Deep Learning" by Michael Nielsen, plus additional material such as some proofs of fundamental equations not provided in the book.

Outline:

Feedforward Neural Networks.
* Simple (Python) Network to classify a handwritten digit
* Learning with Stochastic Gradient Descent
* How the backpropagation algorithm works
* Improving the way neural networks learn:
    ** Cross-entropy cost function
    ** Softmax activation function and log-likelihood cost function
    ** Rectified Linear Unit
    ** Overfitting and Regularization:
        *** L2 regularization
        *** Dropout
        *** Artificially expanding data set

Pre-requisites: There is some heavier mathematics in learning the four fundamental equations behind backpropagation, so a basic familiarity with multivariable calculus and matrix algebra is expected, but nothing advanced is required. (The backpropagation equations can be also just accepted without bothering with the proofs since the provided Python code for the simple network just make use of the equations.) Basic familiarity with Python or similar computer language.

Speaker Background: CL Kim works in Software Engineering at CarGurus, Inc. He has graduate degrees in Business Administration and in Computer and Information Science from the University of Pennsylvania. He had previously taught for a few years the well-rated IEEE Boston Section class on introduction to the Android platform and API.

Decision (Run/Cancel) Date for this Course is Friday, March 10, 2023

Payment	on/by March 6	After March 6
IEEE Members	$95	$110
Non-members	$115	$130

https://ieeeboston.org/event/neuralnetworks/?instance_id=3285

Python Applications for Digital Design and Signal Processing

Dates & Times: **Live Workshops: 6:00 - 7:30PM EDT; Thursdays, April 6, 13, 20, 27**
First Video Release, March 30, 2023, 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, March 30, 2023 in advance of and in preparation for the first live workshop session.
Attendees will have access to the recorded session and exercises for two months (until June 27, 2023) after the last live session ends!

New Format with Pre-Recorded Videos: The course format has been updated to release 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 - 7pm on the dates listed below:

Class 1

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

Class 2

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

Class 3

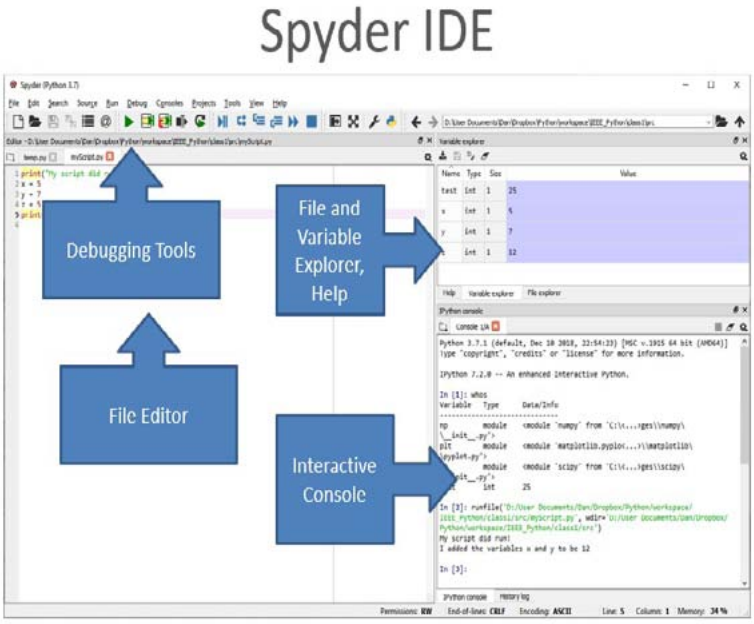
Topic 3: Signal processing simulation with popular packages including NumPy, SciPy, and Matplotlib.

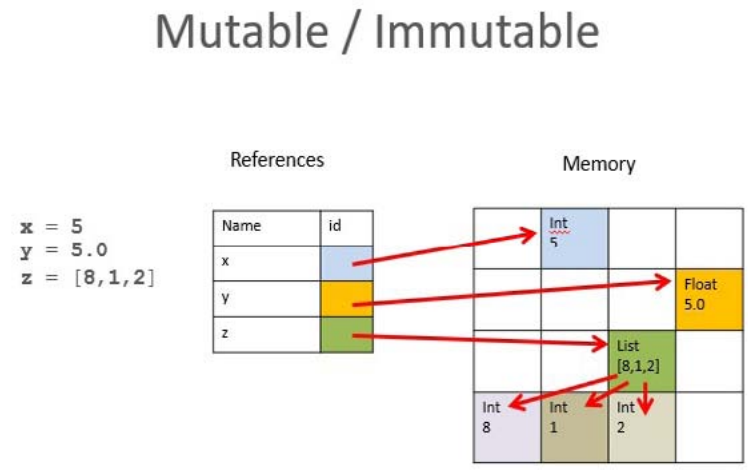
Class 4

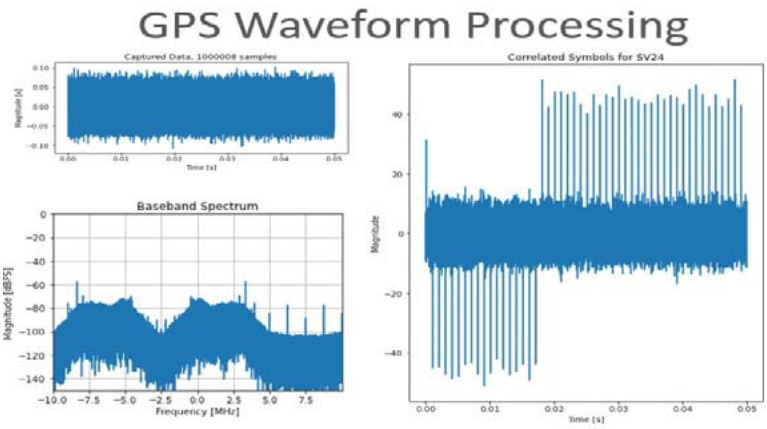
Topic 4: Bit/cycle accurate modelling and analysis using the design examples and simulation packages

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/dan-boschen/)







Decision (Run/Cancel) Date for this Course is Friday, March 24, 2023

Payment	On/by March 20	After March 20
IEEE Members	$180	$195
Non-members	$195	$215

https://ieeeboston.org/event/pythonapplications/?instance_id=3380