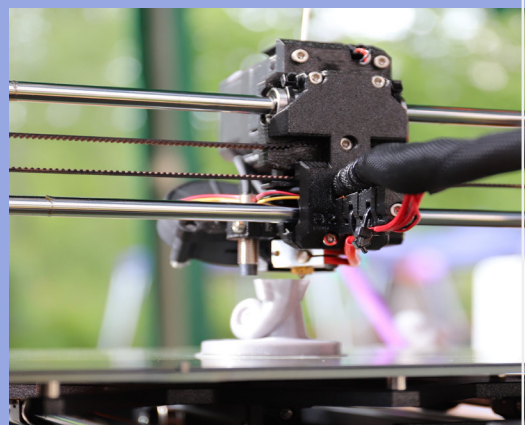




THE PULSE

OF LONG ISLAND



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Dear IEEE Long Island Section members,

Welcome to 2026! This is my first address to you as Section Chair in 2026 for *The Pulse*, and I'm energized about the possibilities ahead for our community of engineers, innovators, and technology leaders. I had the pleasure of representing our Section as Chair and voting member at the **IEEE R1/R2 Joint Training + Assembly Meeting** in February in Covington, Kentucky. This gathering brought together section leaders from across Regions 1 & 2 for strategic planning, governance decisions, and leadership training. The insights gained— from succession planning to operational best practices—will directly support our goals this year. Special thanks to Charles Rubenstein, R1/R2 Chair, and Kirit Dixit, our Area Chair, for their guidance and support as we begin this year. It's inspiring to see the collaborative spirit across regions, all united behind IEEE's mission to advance technology for humanity.

I'm pleased to share that we've scheduled our first in-person Executive Committee for 2026 at the Hilton Farmingdale —a great opportunity to reconnect as a leadership team and set the tone for a dynamic year ahead with bold vision from all attendees. This was also attended by Charles Rubenstein and his guidance was valuable for our meeting.

This is an extraordinary time to be an IEEE member. Artificial intelligence, quantum computing, and cybersecurity are reshaping every industry, and Long Island is at the heart of this transformation. Our Section is uniquely positioned to be your gateway to these emerging technologies—through hands-on workshops, technical symposia, and direct connections to the professionals driving change.

In 2026, we're launching our **Technology Leadership Initiative**: quarterly roundtables bringing you face-to-face with industry experts and government technology leaders from across the region. We're also deepening our university partnerships to create more pathways for students entering the profession and expanding our signature conferences and seminars. LI Section has been participating in industry conferences like the **NYC Cybersecurity Conference** attended by LI Section Treasurer Sandy Mazzola, and we are driving collaboration across the region for more to come like **IEEE LI RF/Microwave Symposium** on April 22, 2026 (Sai/Sandy/Tony). We are also going to integrate social media, drive online presence and make information more accessible across the LI Section.

Whether you're a seasoned professional, an early-career engineer, young professional, or a student just beginning your journey, there's a place for you here. Get involved and reach out. Attend an event. Volunteer with a chapter. Your participation is what makes our Section strong and helps drive IEEE mission. Reach out to me for any questions and looking forward to connecting with you.

Warm regards,



Udit Sharma

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IEEE



LONG ISLAND SECTION



The Pulse of Long Island is produced by the Long Island Section of the **Institute of Electrical & Electronics Engineers**.

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THE IEEE LONG ISLAND SECTION WEBSITE

The IEEE LI Section website is regularly updated to reflect recent section activity and upcoming events. Each Society and Affinity Group has a dedicated page that describes their function and includes contact information.

www.consult-li.com

CONSULTANT'S NETWORK OF LONG ISLAND

The Consultant's Network of Long Island maintains a referral service of engineering, computer, managerial and technical professionals.

membership@ieee.li

MEMBERSHIP DEVELOPMENT

For more information on membership with the LI Section of the IEEE, e-mail John Schmidt at: membership@ieee.li

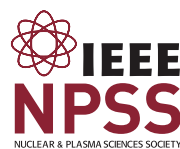


IEEE



LONG ISLAND SECTION

THE IEEE LONG ISLAND SECTION HAS 19 CHAPTERS. EACH CHAPTER IS A TECHNICAL SUBUNIT OF THE LI SECTION, ASSOCIATED WITH AN IEEE SOCIETY. THE CHAPTERS, AS WELL AS THE SECTION, ARE ALWAYS WELCOMING VOLUNTEERS. IF YOU WOULD LIKE TO HELP WITH ANY OF THE CHAPTER'S STEERING GROUPS, PLEASE CONTACT THE RELEVANT CHAPTER CHAIR, VICE CHAIR, OR ONE OF THE SECTION OFFICERS.

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The 4th ANNUAL MICROMOUSE COMPETITION of LONG ISLAND

Dr. Andrew R. Sass, Event Coordinator

The 4th Annual Micromouse of Long Island Competition was held at NYIT, Anna Rubin Hall, in Old Westbury on May 8, 2026.

PARTICIPATING SCHOOLS:

- CUNY, NYIT, OW
- NEW YORK INSTITUTE OF TECHNOLOGY, NY
- COLLEGE OF NEW JERSEY
- FITCHBERG STATE
- STONY BROOK UNIVERSITY
- RUTGERS UNIVERSITY
- HOFSTRA UNIVERSITY
- STEVENS UNIVERSITY
- MAYFLOWER ACADEMY (NJ public secondary school)

The above schools fielded 14 teams made up of more than 70 students. Teams participated in 6 events including the Micromouse 16 X16 Maze.

Top honors in the 16 X 16 Maze went to Stevens University with a 20 second solution run as well as multiple successful runs with returns to start. SBU and Rutgers also posted successful solutions.

Several teams participated in the inaugural "*Micromouse: The Great Cheese Hunt*" with top honors going to Stevens and SBU. In this event, autonomous robot "mice" found an IR beacon in an 8 X 8 Maze and returned to start.

Schools gave technical presentations to a team of Judges whose backgrounds represented Industry, University, and Finance. Top honors went to SBU and Rutgers.

Grants from the H. Beecher Greenman Family Foundation Charitable Donations from 2025 and 2026 were awarded in the form of an individual financial award to an outstanding student-competitor from Stevens and team awards of practice Mazes to four schools; SBU, Rutgers, NYIT, and Fitchberg State.

Heartfelt thanks to all Volunteer Judges whose participation was invaluable to the success of the competition.



IEEE LONG ISLAND AT THE 2026 IEEE YOUNG PROFESSIONALS SUMMIT

*Artificial intelligence, humanitarian technology, professional growth,
and regional collaboration across IEEE Regions 1 and 2*

By Alexander Impastato, Francesco Pira and Brian Taccuri



SUMMIT SUMMARY

The 2026 IEEE Young Professionals Summit in Boston brought together engineers, volunteers, researchers, and industry leaders for a concentrated weekend of technical learning, leadership development, networking, and humanitarian technology. Members of IEEE Long Island attended sessions on AI career development, autonomous vehicles, language models, applied machine learning, energy sustainability, Women in Engineering, YP engagement, and the Tech4Good pitch competition. The summit reinforced that Young Professionals should help build the future of engineering responsibly.

A SUMMIT BUILT AROUND CONNECTION AND FORWARD MOTION

The IEEE Young Professionals Summit was more than a weekend conference, it was a gathering point for engineers who are early enough in their careers to be actively building their professional identity. Technology does not move by itself, it moves through people, teams, institutions, communities, standards. As engineers we must be willing to keep learning when an industry changes. Attending the summit as a representative of the IEEE Long Island Section, that meant treating the event as both a learning opportunity and a responsibility. Listening for ideas that could be applied to Long Island Section, especially for Young Professional engagement, the Summit provided tools for technical growth, transportation systems, artificial intelligence, and community-focused engineering work.

The technical theme of the summit was artificial intelligence. AI appeared in career planning, autonomous vehicles, language models, research workflows, energy systems, and humanitarian technology. The summit highlighted that AI is not a single subject, it is a broad engineering force that affects how we design systems. It is how we validate risk and how we train the next generation of professionals to keep technology aligned with human needs. The event was a hub for IEEE volunteer spirit. The presence of IEEE Region 1,

IEEE Region 2, IEEE Young Professionals, Women in Engineering, the Boston Section, and multiple technical societies gave the summit a regional and cross-disciplinary character. It was a space full of people comparing maps from different paths of a common engineering frontier.

SATURDAY TECHNICAL AND PROFESSIONAL SESSIONS

OPENING REMARKS: AI, Careers, and the Responsibility to Stay Current

The opening remarks set the tone for the day. The strongest message from the opening session was that engineering careers are being reshaped by artificial intelligence at a speed that requires active preparation. AI is not just arriving as a new software category. It is changing expectations for analysis, design, automation, communication, documentation, and decision support across many branches of engineering. The session focused on IEEE career opportunities connected to AI and the need for engineers to pursue work that remains relevant as AI becomes more capable. Centering on the message that engineers should not wait passively while tools, roles, and workflows change; but rather, Engineers need to understand the technology well enough to guide it. We need question it, apply it safely, and remain valuable in environments where AI-assisted work becomes normal.

As a signal design engineer, I connected that message to the transportation and infrastructure world. Safety-critical engineering depends on discipline, verification, and traceability. AI may help engineers analyze information, detect patterns, or improve productivity, but it also introduces new questions about reliability, explainability, and professional judgment. The opening session enlightened me to think that AI not as a replacement for engineering responsibility, but as another force to learn and govern with care.



IEEE INDUSTRY AI LABS: CONNECTING YOUNG PROFESSIONALS TO SKILLS, TOOLS, AND OPPORTUNITY

The session on IEEE Industry AI Labs focused on how Young Professionals can connect their career development to AI skills, tools, and industry opportunities. The presentation stood out because it treated career development as something that can be mapped, explored, and supported through IEEE resources. This talk highlighted that IEEE is developing or promoting AI-based software support to help individuals map out career paths. This matters because many Young Professionals are not lacking ambition, but lack a clear path through a very crowded technical landscape. AI, machine learning, cybersecurity, controls, power systems, robotics, communications, and infrastructure all compete for attention. A career-mapping tool can help convert scattered interests into a more deliberate plan.

The talk also highlighted the importance for Young Engineers to travel, attend summits, and connect with IEEE members across regions and countries. My own IEEE involvement has grown through presentations, and networking. Technical knowledge is important, but professional momentum often comes from being in rooms where people share work, look for collaborators, and encourage others to step into leadership. For IEEE Long Island, this session suggested a practical takeaway—YP programs should not only host events, they should help members see how participation connects to career direction. A good YP event can expose someone to a skill. With a better YP ecosystem, we can help members turn their skill into a project, a presentation, or a mentorship.

AI FOR AUTONOMOUS VEHICLES: FROM FOUNDATION MODELS TO SAFETY ASSURANCE

This session focused on AI as autonomous vehicles as a foundation model for safety assurance. This relevant sessions for anyone interested in transportation, robotics, automation, or safety-critical systems. The presentation tied together the capability of modern AI models with the practical engineering requirement that autonomous systems must be validated before they can be trusted in public environments. The five stages of automation, Waymo-related concepts, and block-diagram thinking around autonomous vehicle systems were discussed. This session expored automous vehcles as a system concepts: sensing, perception, planning, decision-making, control, verification, and safety assurance.

As engineers, this structure is exactly what we need when working with complex systems. With a block-diagram view, the system becomes discussable, testable, and accountable. Without, AI can become an ambiguous fog. Safety assurance portion is important to especially transportation. It is not enough for a system to work most of the time. Engineers need to question what happens during edge cases, degraded conditions, uncertainty, sensor failure, unusual user behavior, and conflicting inputs. Those questions not only apply in autonomous vehicles, they also echo through rail signaling and control systems. As pertaining my own field, the future of AI in transportation will depend heavily on how well engineers can combine innovation with evidence-based safety cases. The session also showed why Young Professionals should pay attention to autonomous systems even if they do not directly work in automotive engineering. The same concepts appear in robotics, industrial control, smart infrastructure, and even decision-support tools. The names change, but the engineering pattern remains the same.

LUNCH AND SPONSOR SPOTLIGHTS: SEEING IEEE AS A NETWORK OF SOCIETIES

Technical conferences are remembered for the talks, but sponsor and society spotlights reveal the infrastructure behind the engineering community. They show who is building, funding, researching, organizing, and supporting the work that makes future projects possible.



Alexander Impasato representing IEEE Long Island Section at the Region 1 and Region 2



Networking with fellow Young Professionals at the 2026 IEEE Young Professionals Boston summit

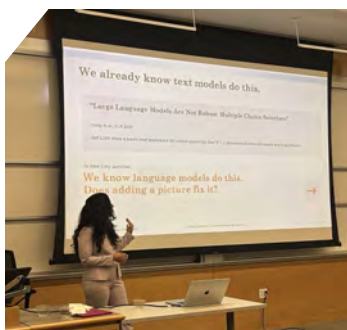
One of the sponsor highlights included the IEEE Aerospace and Electronic Systems Society stood out because aerospace and electronic systems overlap with so many areas in modern engineering: ensing, navigation, communications, embedded systems, reliability, defense, transportation, and complex system integration. Even when a society name sounds specialized, the technical themes often reach far beyond one industry. As a Young Professional, these spotlights are useful because they widen the map. A student or early-career engineer may join IEEE through a local Section, but the deeper IEEE ecosystem includes technical societies, standards groups, humanitarian programs, publications, conferences, and regional committees. Experiencing these layers in person helped reinforce that IEEE is not one hallway, but rather a large building. The challenge is learning which doors connect to your goals.

LOOKING INSIDE AI LANGUAGE MODELS: INSPECTING AND STEERING AI AS IT RUNS

The session ofocused on inspecting and steering AI. This was one of the most conceptually important talks of the summit because it moved beyond the surface-level question of what a model can output. Instead, it raised the deeper engineering question: how do we understand what is happening inside a model while it is producing an answer?

Referencing vision-language model flowcharts, model development and training, and GitHub link, the common theme during this session was transparency. As AI tools become more common in engineering workflows, it is not enough to be impressed by a polished response. Engineers need ways to inspect behavior, trace reasoning patterns, identify failure modes, and steer systems toward more reliable outputs. This matters because AI models can appear confident even when they are wrong. For engineers, this can be dangerous. A model that produces a plausible but incorrect conclusion can mislead a user unless the workflow includes verification, constraints, audit trails, or human review. Inspecting and steering models is therefore not an academic luxury, it is part of the path toward responsible adoption.

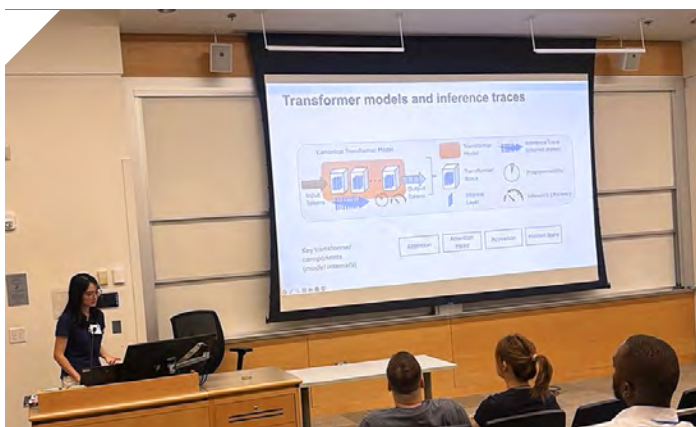
The talk connected strongly to professional development. Young Professionals entering the workforce now will likely use AI tools throughout their careers. The engineers who understand only how to prompt a model may gain short-term productivity. The engineers who understand how models fail, how they can be inspected, and how they can be integrated into controlled workflows will be better prepared to lead AI-enabled teams.



A language-model session questioning visual for autonomous driving & information changes model behavior or robustness



A technical session explored vision-language-action concepts system reasoning.



A technical session discussed transformer models, inference traces, and methods for observing internal model behavior.

APPLIED AI RESEARCH: BUILDING AND TRAINING MODELS WITH PYTORCH

This AI research talk brought the conversation closer to hands-on implementation and focused on using PyTorch to train an AI model from scratch. This is important because it discussed AI as a finished product to AI as an engineering process. A model is not just something downloaded or prompted, it can be designed, trained, evaluated, adjusted, and improved. For many engineers, especially those outside traditional software or machine learning roles, AI can feel like a sealed box. A practical session on PyTorch helps break that seal. A training a model forces the engineer to think about data, architecture, loss functions, optimization, validation, and performance. Those steps reveal that AI is not a single button, but chain of design choices, and every design choice affects behavior.

This session also reinforced the value of learning by building. Reading about AI provides vocabulary, but implementation builds intuition. Even a small model can teach an engineer how training behaves, why overfitting matters, why data quality matters, and why model outputs need to be evaluated carefully. For Young Professionals, that kind of practical exposure can make the difference between following the AI conversation and contributing to it.

I was enlightened how an IEEE local event could be a more hands-on with technical learning. A short workshop like PyTorch, model training, or AI verification would be valuable for students and young engineers because it would give members something concrete to build while also opening the door to discussions about ethics, safety, energy use, and real-world applications.

AI AND THE ENERGY TRANSITION: THE COST OF INTELLIGENCE

The session on AI applications in energy transition widened awareness from what AI can do versus what AI consumes. Energy consumption related to AI usage and the growing movement to conserve energy used in AI cautioned me to reflect on that every new capability has an infrastructure cost, and AI is no exception. The presentation treated AI as both a tool for energy systems and a load on energy systems. On one side, AI can help with forecasting, optimization, grid planning, asset management, and climate-related decision support. On the other, AI models and data centers require electricity, cooling, hardware, and continued maintenance. That creates a responsibility for engineers to ask not only whether AI works, but whether it is efficient, scalable, and justified for the problem being solved. This topic is important for Young Professionals because our generation will inherit the systems being built now. If AI infrastructure expands without attention to energy efficiency, sustainability, and responsible deployment, future engineers will be left managing the consequences. The session made it clear that sustainability cannot be added at the end of the design process like a decorative label, it has to be considered while the system is being imagined.

For IEEE, the energy-transition discussion also connected technical innovation as it pertains to public responsibility. Engineering has always had to balance progress with safety, cost, access, and environmental impact. AI simply adds another layer to that balancing act. The question is not whether engineers should use AI. The better question is how to use it in a way that serves society without creating avoidable strain on the systems society depends on. This session reminded me that powerful tools are not automatically good tools. They become good when engineers apply judgment, measure tradeoffs, and design with consequences in mind.

SUNDAY LEADERSHIP, ENGAGEMENT, AND THE PITCH COMPETITION

WIE Keynote: *Amplifying Human Potential for an AI-Powered Future*, Sunday's Women in Engineering keynote "Amplifying Human Potential for an AI-Powered Future" posed the question of how technology can expand what people are able to do when it is designed and applied responsibly. The WIE keynote emphasized that engineering culture is shaped not only by technical skill, but by who is invited into the conversation. AI will influence hiring, health-care, infrastructure, education, public services, and communication. That means a narrow group of voices cannot be the only group shaping the future. Diversity in engineering is not a side issue. It is a technical strength because different experiences help reveal risks, blind spots, and use cases that may be missed.

This keynote explored a broader summit theme: AI should be treated as a tool for human advancement, not a substitute for human responsibility. The engineers who build and deploy AI systems need technical fluency, but they also need empathy, communication, and awareness of real community needs.

YP PANEL: WHAT WORKS IN YOUNG PROFESSIONAL ENGAGEMENT

The YP engagement panel was one of the most useful sessions from a Section perspective. Technical learning is one part of IEEE involvement, but engagement is what keeps a local professional community alive. A Section can have strong officers, good intentions, and access to talented members, but if young engineers do not feel invited, useful, or connected, participation fades. The panel focused on what

works in Young Professional engagement. My main takeaway was that successful engagement needs to be intentional. People are more likely to stay involved when they understand the value of the event, feel welcomed by the group, and can see a path from attendance to contribution. Networking for its own sake is helpful, but networking connected to projects, talks, mentorship, and leadership opportunities is stronger. Directly pertaining to IEEE Long Island, Young Professionals often balance demanding jobs, graduate school, certification exams, commuting, family responsibilities, and financial pressure. Events have to respect that reality and should be worth the drive, the evening, and the mental bandwidth.

The summit gave me ideas for how local Young Professional activity can be structured around technical development, practical career value, and a sense of belonging. The panel also gave me clarity that an engagement is personal. A member may come to an IEEE event for the topic, but they often return because someone remembered their name, asked about their work, introduced them to another member, or encouraged them to present. That kind of professional hospitality is very powerful.

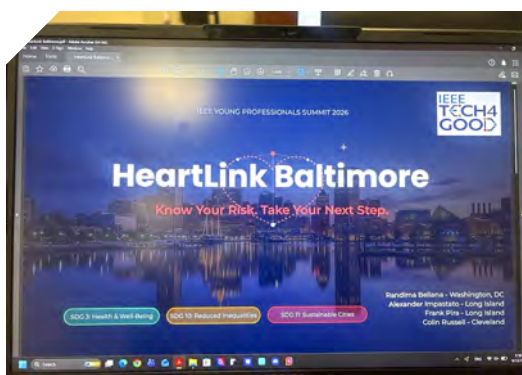
PITCH COMPETITION: TURNING LOCAL PROBLEMS INTO ENGINEERING DISCOVERY

The pitch competition shifted the summit from listening to creating. Teams were asked to understand local problems and prepare a short problem pitch. The assignment was not to rush into a complete solution. It was to clarify the problem, identify what had already been tried, align the effort to an IEEE program such as Tech4Good or EPICS, and define reasonable next steps.

To engineers, this type of structure is valuable because we often want to solve problems immediately. The competition forced the opposite discipline: slow down, understand the people affected, validate the gap, and then design. In humanitarian technology, that order matters. A technically impressive idea can fail if it does not fit the community, the workflow, the constraints, or the trust environment. The competition format also created strong teamwork. In a short period of time, teams had to organize thoughts, divide responsibilities, choose a problem area, prepare a concise message, and present it clearly to judges. It was a compressed version of real engineering work: uncertain inputs, limited time, multiple viewpoints, and the need to communicate a practical path forward.

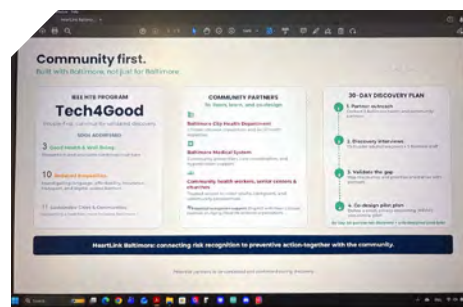
HEARTLINK BALTIMORE: KNOW YOUR RISK. TAKE YOUR NEXT STEP.

My team developed a pitch titled "HeartLink Baltimore: Know Your Risk. Take Your Next Step." The project focused on cardiovascular-risk recognition and the gap between receiving health information and taking preventive action. The team included Randima Bellana from Washington, DC, Alexander Impastato from Long Island, Frank Pira from Long Island, and Colin Russell from Cleveland.

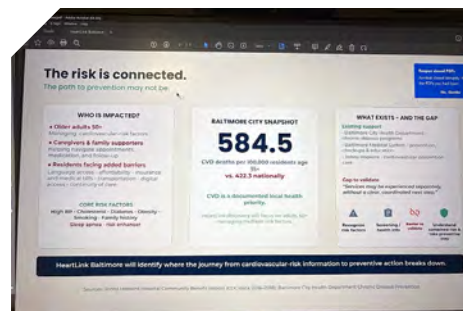


HeartLink Baltimore pitch cover: "Know Your Risk. Take Your Next Step"

The core idea was simple but important: risk information does not automatically become preventive action. A person may know they have high blood pressure, cholesterol concerns, diabetes risk, obesity, sleep apnea, or other risk factors, but still struggle to navigate the next step. The barrier may be language, affordability, insurance, transportation, digital access, medical bills, appointment navigation, or fragmented care. The Baltimore focus gave the problem a local anchor, and our pitch deck identified a cardiovascular disease in Baltimore, including a slide noting 584.5 CVD deaths per 100,000 residents age 35 and older, compared with 422.3 nationally. The purpose of using that statistic was not to reduce the community to a number. It was to show that cardiovascular prevention is a real local priority and that a discovery process could help identify where the journey from risk recognition to action breaks down.



The HeartLink Baltimore concept proposed a community-first discovery plan aligned with Tech4Good and humanitarian technology.



The pitch identified cardiovascular-risk factors, affected groups, and gaps between risk recognition and preventive action.

We aligned the project with IEEE Humanitarian Technologies and Tech4Good, as well as the UN Sustainable Development Goals of Good Health and Well-Being, Reduced Inequalities, and Sustainable Cities and Communities. That alignment helped frame the pitch as more than a health-awareness campaign and the goal was to explore a people-first, community-validated discovery process that could support equitable cardiovascular prevention.

A major part of the pitch was the phrase "built with Baltimore, not just for Baltimore." That principle guided the community-first approach. Instead of designing a tool in isolation, the project proposed outreach to potential partners such as the Baltimore City Health Department, Baltimore Medical System, community health workers, senior centers, churches, and local organizations with trusted access to older adults and caregivers.

The proposed 30-day discovery plan had four steps. First, contact health and community partners. Second, conduct discovery interviews with older adults, caregivers, and frontline staff. Third, validate the gap by mapping the journey and prioritizing one barrier with partners. Fourth, co-design a small, privacy-respecting, non-clinical pilot brief. The plan intentionally avoided overpromising. It focused on listening, validating, and co-designing before building.

This experience was one of the most meaningful parts of the summit because it connected engineering to public need. It reminded me that not every engineering contribution begins with a circuit, codebase, or calculation. Sometimes it begins with asking better questions, identifying where a system fails people, and creating a structured way for technology professionals and community partners to work together. HeartLink Baltimore also showed the value of interdisciplinary teamwork within IEEE. Team members brought different locations, perspectives, and strengths. That made the pitch stronger. The problem was not owned by one person, and the proposed next step was not built around one assumption. It was a collaborative attempt to turn a real community challenge into a responsible discovery plan.

NETWORKING, REGIONAL COLLABORATION, AND BRINGING LESSONS HOME

Some of the most important moments at the summit happened between sessions. The official program provided the structure, but the hallway conversations, team discussions, group photos, and informal introductions gave the event its energy. I met and reconnected with IEEE members from different Sections and Regions, each bringing a different view of what Young Professionals can do inside IEEE.

Those interactions matter because IEEE is built on networks of volunteers. A local Section becomes stronger when its members are connected beyond their own geography. Region 1 and Region 2 being represented together under the "Better Together" theme made that point visible. The engineering challenges ahead are too large for isolated groups. AI, sustainability, transportation, health-care access, and workforce development all require collaboration across technical and regional boundaries.

First, AI should be a continuing topic for local technical programming, not a one-time trend event. Second, Young Professional engagement should connect technical learning with career growth and volunteer pathways. Third, humanitarian technology projects can help engineers apply skills to community problems while learning how to listen before building. Fourth, regional relationships can help local members find speakers, mentors, collaborators, and future opportunities.

The summit strengthened my motivation to keep representing Long Island in IEEE spaces. I came back contacts, project ideas, and a clearer sense that Young Professionals have a real role to play. We are not waiting at the edge of the profession. We are already in it, and IEEE gives us a place to grow into that responsibility.

The Boston summit reminded me that engineering leadership is not only about titles. It is about showing up, learning carefully, asking useful questions, documenting what matters, and bringing value back to the people who trusted you to represent them. That is what I tried to do at this summit, and that is what I hope to continue doing through IEEE Long Island.



IEEE Long Island Section Representation at 2026 IEEE Young Professionals Summit in Boston .



IEEE networking during the Young Professionals summit with Region 1 and Region 2 participants.

FIVE KEY TAKEAWAYS

FIRST: Humanitarian technology starts with listening. The HeartLink Baltimore pitch reinforced that community discovery, partner outreach, and barrier validation should come before a technical solution is proposed.

SECOND: Regional collaboration creates momentum. The presence of IEEE Region 1, IEEE Region 2, IEEE Young Professionals, WIE, technical societies, and local Sections showed how much stronger IEEE becomes when its parts work together.

THIRD: Safety-critical thinking still matters. Autonomous vehicles and AI systems require verification, transparency, and safety assurance. Innovation is strongest when paired with disciplined engineering judgment.

FOURTH: AI belongs in local professional development. The summit showed AI appearing in career planning, vehicles, language models, energy systems, and humanitarian technology. Local IEEE programming can help members understand both the capabilities and limitations of these tools.

FIFTH: Young Professional engagement needs a pathway. Events should help members move from attendance to contribution through workshops, talks, mentorship, project teams, and leadership opportunities.

RECOMMENDED READING:

THE MICROSOFT AI INSIDER'S PLAYBOOK

Your Guide to Cloud Strategy and Digital Transformation

Krishna C. Mukherjee

ABOUT THE BOOK

Most books on Microsoft AI explain what the tools do. This book explains why they were built that way and how to use that knowledge to your advantage.

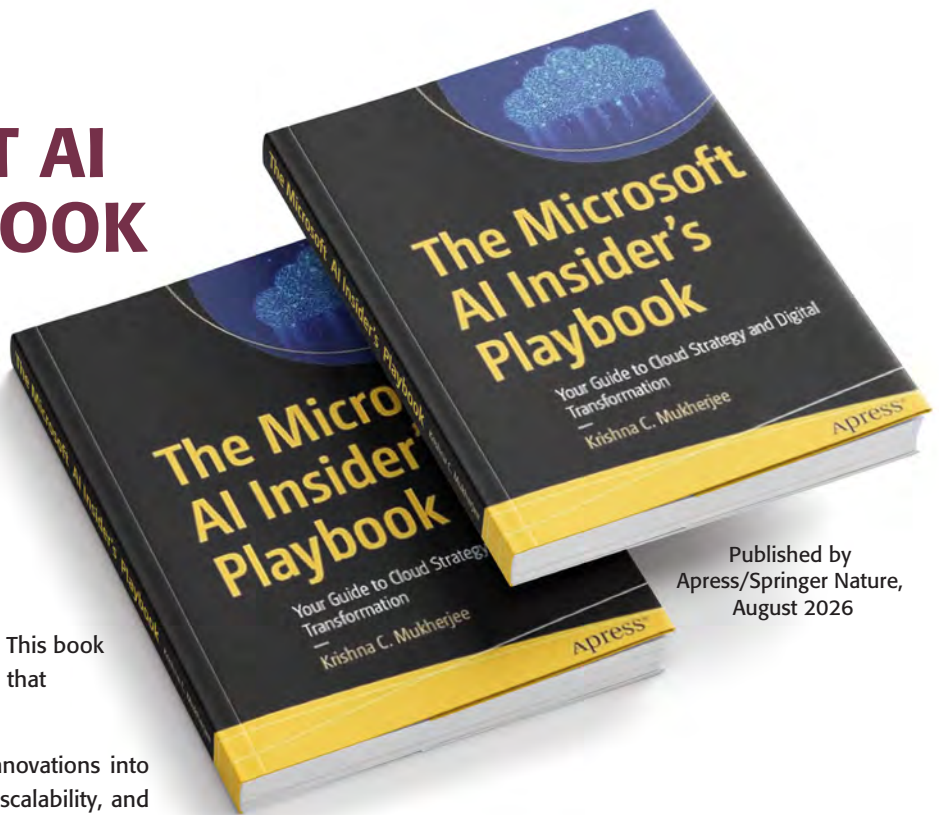
The book traces the evolution of Microsoft's early innovations into today's intelligent enterprise, showing how usability, scalability, and automation shaped the modern platform. That history is not nostalgia; it is the argument. The design decisions behind Windows and Office, along with the engineering disciplines that made intelligent features work within the hardware constraints of their time, help explain why today's Azure and Copilot ecosystem operates as it does.

The book then moves from history to practice. It covers Agile delivery and efficient process design; Azure, SaaS, and strategic cloud-AI architecture; Azure AI Services; the Copilot ecosystem; and the Power Platform. Each topic is grounded in practical patterns, case studies, and lessons drawn from finance, health care, retail, and legal services.

Readers learn how to architect and implement Azure AI Services, now part of Foundry Tools, including Azure OpenAI Service, Speech, Language, Vision, and Document Intelligence. These technologies are used to build enterprise-grade conversational AI systems and virtual assistants. The book provides reference patterns for data pipelines, retrieval-augmented applications, model serving, and SaaS integration, with explicit attention to trade-offs involving latency, reliability, quality, and cost.

It also explains how to map business processes, assess data readiness, quantify potential impact, and develop a staged roadmap from proof of concept to production. Governance is treated as an engineering responsibility rather than an afterthought, with coverage of security, privacy, compliance, monitoring, drift detection, incident response, and cost control.

These foundations apply directly to agentic systems: grounded retrieval that ensures actions are based on governed data, tool interfaces with stable contracts, least-privilege identity extended to non-human actors, and monitoring and rollback capabilities that make it safe to expand autonomy. These architectural considerations determine whether an agent can be trusted to act rather than merely answer questions.



Published by
Apress/Springer Nature,
August 2026

The result is a clear, experience-driven guide to building modern cloud-AI systems that connects Microsoft's platform decisions with the systems readers are creating today.

The book is written for enterprise and cloud architects, Azure practitioners, and data and machine learning leaders responsible for planning or executing AI-driven digital transformation. It will be published by Apress, an imprint of Springer Nature, in August 2026. [Pre-orders are now open.](#)

ABOUT THE AUTHOR

Krishna C. Mukherjee is a pioneering Microsoft technologist whose teams shipped the intelligent assistance features now used by hundreds of millions of people, including AutoCorrect, AutoFormat, and the spelling and grammar checkers in Microsoft Office. He architected the Intelligent Filing Manager, an AI-driven compliance system published at IEEE ICSMC in 1999, and led the creation of the Bloomberg Valuation Service, applying predictive analytics to millions of financial instruments across asset classes. His career spans mainframes, personal computing, and the current era of cloud computing and AI, with a consistent focus on turning advanced capabilities into practical enterprise tools.



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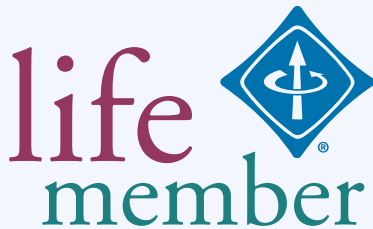
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Being elevated to senior member recognizes people who have moved beyond entry-level work in their careers. It also encourages them to engage more broadly with engineers and other technical professionals in companies and universities outside their own. To be eligible for senior member status, members must have worked in a professional capacity in a technical field for at least 10 years. Educational experience is partially credited toward that time. Nominees must also have professional references from three IEEE senior members, Fellows, or honorary members. If you're interested in elevation, you don't have to wait to be nominated—you can nominate yourself.

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The Section is inviting you to record your stories and histories in our monthly publication, the *Long Island Pulse*. An article of approximately 300 – 350 words is recommended.

LET US HEAR FROM YOU.

Send your article to: pulse@ieee.li
Life Member Chair: life@ieee.li

The **IEEE Long Island Section** has held meetings with many of our Life Members and Senior Engineers, in recent months. Your stories and histories in engineering are interesting, inspiring and should be recorded for future generations. You have served your profession for many years, many have served our country in the military, many as engineers fighting the Cold War. The many contributions are the legacy to this new digital age, space age, environmental age and beyond.

WANTED: IEEE LIFE MEMBER NEEDED TO VOLUNTEER TO SUBMIT A MONTHLY HISTORY ARTICLE FOR THE PULSE

The **PULSE** is seeking a IEEE LI Life Member to write the *Long Island Electrical & Electronic History* monthly article for the **Pulse**. If interested contact pulse@ieee.li

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