IEEE Spectrum

PROFILE THE INSTITUTE

Telecom Expert Honored By IEEE Standards Association › Stevens professor was recognized for standards governance management

BY WILLIE D. JONES

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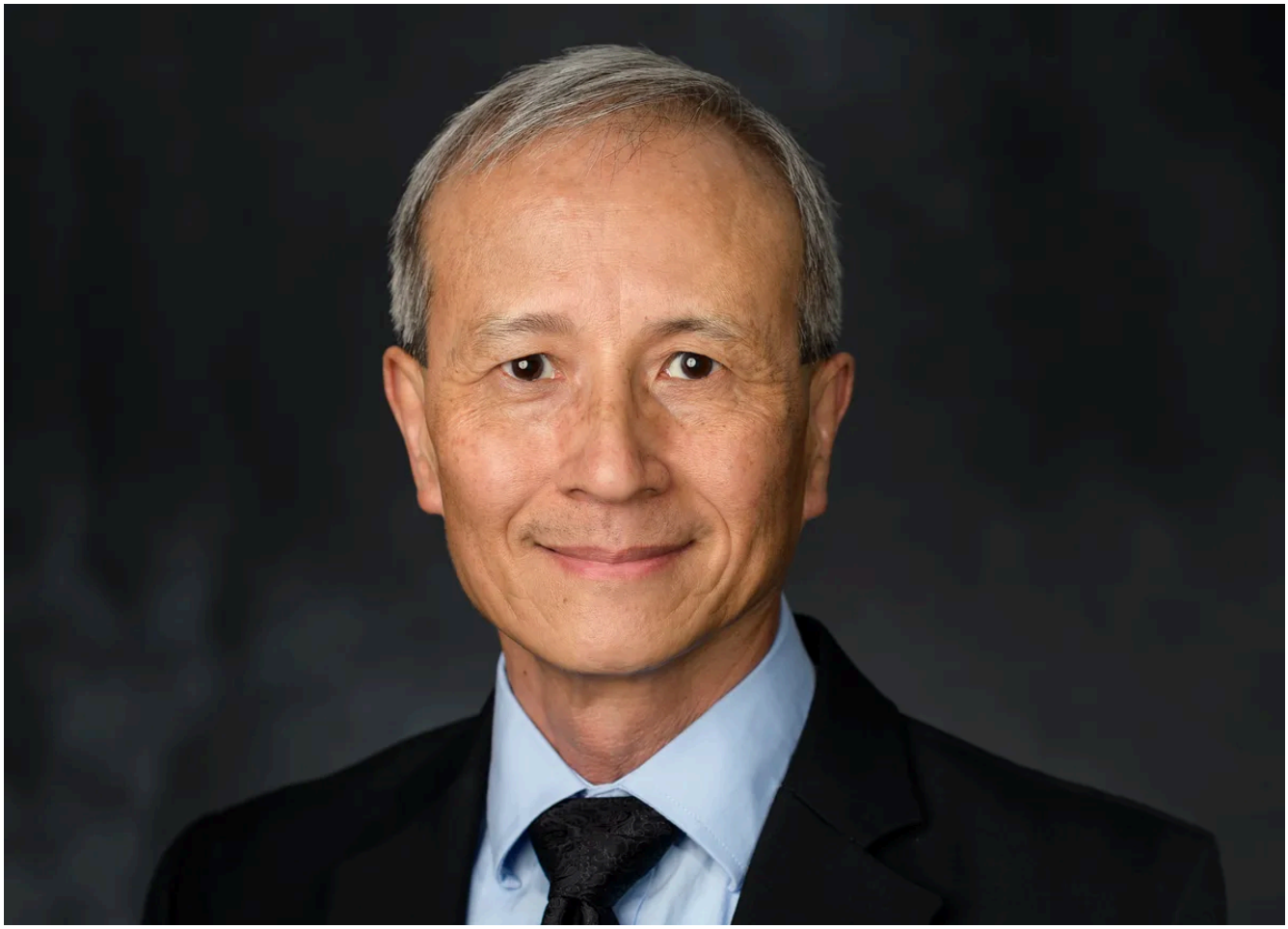
Willie Jones covers transportation for IEEE Spectrum and the history of technology for The Institute.



IEEE Life Senior Member Kevin Lu, an engineering professor at Stevens Institute of Technology, has been honored by the IEEE Standards Association for years of distinguished service. KEVIN LU

GROWING UP IN TAIPEI, TAIWAN, IN THE 1960S with limited access to television and other forms of entertainment, Kevin Lu amused himself by examining how machines worked. He became fascinated by heavy construction equipment and built miniature versions of the machinery out of scrap materials.

"We didn't have a lot at the time," Lu recalls. "TV was just becoming available to the average household, and there weren't many toys. So I made my own."

Kevin Lu

EMPLOYER:

Stevens Institute of Technology, in Hoboken, N.J.

TITLE:

Teaching Professor and Associate Chair for Undergraduate Studies in the Department of Electrical & Computer Engineering

MEMBER GRADE:

Life senior member

ALMA MATERS:

National Chiao Tung University in Hsinchu; Washington University, in St. Louis

That boy would grow up to publish pioneering work on optical networks, have a long career in telecommunications R&D, and teach students about the emerging Internet of Things.

Lu, an IEEE Life senior member, also has played a significant role in IEEE's global standards development program. He was honored last year with the IEEE Standards Board Distinguished Service Award for "superior IEEE SA governance leadership as the IEEE SA Standards Board audit committee chair and as the IEEE SA Industry Connections committee chair."

Now approaching retirement, Lu reflects on his career, which has gracefully threaded together engineering, teaching, and volunteerism, with no signs of slowing down.

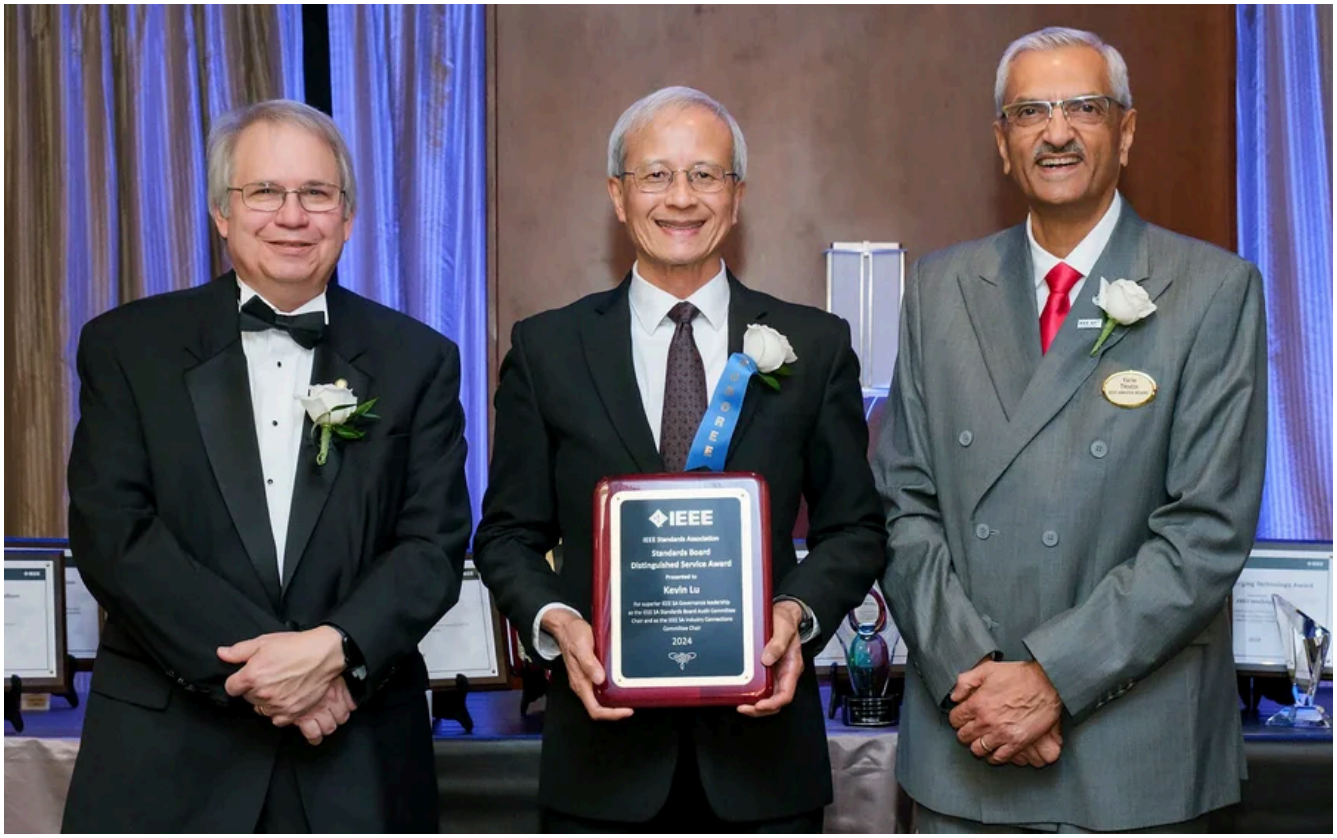
Switching from an interest in mechanics to electronics

Born in Taipei City, Lu was the youngest of four siblings. He says he was influenced by his family and circumstances. His father, a nontechnical administrative staff member at ChungHwa Telecom, the country's telephone company, kept the home filled with telecom newsletters. Lu says his brother performed bold chemistry experiments that sometimes ended with singed eyebrows or small explosions. Kevin gravitated toward mechanical projects, such as building scale models of cranes,

before eventually embracing electronics.

“My parents encouraged a career in engineering because they thought it would provide a good living,” he says.

He earned a bachelor’s degree in control engineering from the National Chiao Tung University in Hsinchu in 1979. He then attended Washington University in St. Louis, earning master’s and doctoral degrees in systems science and mathematics in 1981 and 1984.



Kevin Lu [center] shows off the plaque commemorating him being honored with the 2024 IEEE Standards Board Distinguished Service Award. He is flanked by James E. Matthews, president of the IEEE Standards Association, and Yatin Trivedi, a

member of the IEEE Standards Association Board of Governors. KEVIN LU

A long career with Bellcore

A chance meeting at the campus placement office led to a job interview with Bell Communications Research, known as Bellcore (formerly part of Bell Labs, now Nokia Bell Labs). He was hired and worked at the company's facility in Piscataway, N.J.

The timing couldn't have been better. In 1984 the U.S. telecommunications industry was undergoing a massive structural change, with AT&T's divestiture spawning new entities including Bellcore. His job was "member of the technical staff," which he took great pride in, he says, noting that "Nobel laureates held that same title at Bell Labs."

For the next 28 years, he contributed to projects that shaped the modern communications landscape. In 1990 he wrote the seminal paper "System and Cost Analyses of Broad-Band Fiber Loop Architectures," which was published in the *IEEE Journal on Selected Areas in Communications*. It advocated for passive optical networks—a concept that is now central to global fiber deployment.

The road from idea to implementation was long, Lu says.

“It wasn’t until 2009 that Verizon installed a unit in my home,” he says, laughing. “Fiber is expensive, so companies deployed wireless first to build up enough revenue.”

Bellcore eventually became Telcordia, which Ericsson acquired in 2012. Although Lu had risen through the ranks to become Telcordia’s chief scientist, he left during the Ericsson acquisition and joined Broadcom. There he worked on cellphone chips and contributed to mobile standards for the 3rd Generation Partnership Project (3GPP), a global consortium of telecommunications standards organizations that creates and maintains specifications for mobile systems.

After Broadcom exited the cellular baseband chip business, Lu left in 2013, for a job in academia.

An academic career at Stevens

In 2015 Lu joined the Stevens Institute of Technology, in Hoboken, N.J., as an adjunct professor in the electrical and computer engineering department. He became a full-time professor in 2018.

Now, he says, he sees academia as a continuation of—not a departure from—his life’s work.

“The decades I spent in that world give me insights students

won't get from textbooks," he says.

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"When students tell me they've discovered their path ... that's the most rewarding thing."

In May 2019 Stevens honored him with its Morton Distinguished Teaching Professor Award.

He encourages his students to embrace lifelong learning and develop soft skills alongside technical knowledge. He doesn't just teach engineering, he says; he works "to help students discover who they are and where they might thrive."

Although he recently announced his intention to retire, the school has persuaded him to remain, with the offer of a new role, to be formally announced before the next semester.

"I'll continue on for at least three more years," he says.

Involvement with standards development

Throughout his career, IEEE has remained a constant, he says. He joined in 1980 as a student member, drawn by the affordability of dues and publishing opportunities.

His early IEEE involvement was rooted in power systems—an

echo of his dissertation. His career in the telecom industry led him to become involved with the IEEE Communications Society and the IEEE Standards Association. He served as the society's director of standards development in 2012 and 2013. In that role, he chaired its Standards Development Board. He also served on the society's Standardization Programs Development Board for several years.

Lu now chairs the IEEE Standards Board's Industry Connections committee, which ensures that proposed Industry Connections activities are within the scope and purpose of IEEE. The committee, he says, is "a well-oiled machine." He has led the group since 2018, and although he has given a lot of thought to turning over the reins to a successor, he has stayed on as chair to ensure its continuity.

He also has served on the audit, patent, procedures, and new standards committees.

Even after decades of professional achievement, he says, he remains focused on learning, mentoring, and building bridges between generations of engineers.

What excites him most about the direction his career has taken, he says, is "when students tell me they've discovered their career path."

“That’s the most rewarding thing,” he says. “That’s when I know I’ve done my job. I take pride in seeing them embrace my philosophy of making lifelong learning a daily habit.”