

- ▼ IoT application development for connected car
- ▼ data processing and management
- ▼ cybersecurity in IoT and connected car.

The bootcamp organization has been timely. With the integration of advanced sensors, smartphones, cloud systems, and mobile Internet, the connected cars are becoming a part of the growing IoT ecosystem. The global market of IoT-based connected cars is expected to reach US\$46 billion by 2020. This boot-

camp successfully brought together IoT experts from academia and industry to discuss current challenges, upcoming trends, standardization, and business model innovations in the IoT and connected car. Tom Coughlin (vice president of the FD Committee) and Bob Frankston (IEEE CE Society Distinguished Lecturer), gave two keynote speeches. I provided a presentation of automotive ecosystem 3.0 and conducted a hands-on training on how vehicular data can be exchanged with the IoT ecosystem for

applications such as navigation and vehicular resource management.

Finally, I'd like to thank CE Society President Sharon Peng for her continuous support of the FD-IoT team and such workshops. We are aiming to organize two more FD-IoT workshops in the United Kingdom and Hong Kong. For more information regarding our upcoming events, please contact me at skd@future-tech-lab.com.

—Soumya Kanti Datta

CE Society Distinguished Member Kees Immink Receives the IEEE Medal of Honor

An IEEE Life Fellow and frequent participant in IEEE Consumer Electronics (CE) Society activities, Kees Schouhamer Immink was the recipient of the 2017 IEEE Medal of Honor, the highest award from the IEEE. Immink received the Medal of Honor “for pioneering contributions to video, audio, and data recording technology, including compact disk, DVD, and Blu-ray” at the 2017 IEEE Honors Ceremony on 25 May 2017 at the Palace Hotel in San Francisco, California (Figure 1).

The IEEE Awards Booklet provided additional details on Immink’s contributions [1]:

Regarded as the most prolific contributor to the world’s consumer electronics of the late 20th century, Kees Schouhamer Immink fueled the “big bang” of digital electronics with pioneering coding techniques that have provided the foundation for all generations of optical storage media, from the compact disk (CD) to the Blu-ray disk (BD). A multitasking pioneer in technical areas ranging



FIGURE 1. (From left) Jim Jefferies (IEEE president-elect), Kees Immink (Medal of Honor recipient), and Karen Bartleson (IEEE president and CEO) at the IEEE Honors Ceremony in San Francisco, California.

from coding theory and practice to electronics, mechanics, and optics, Immink has inspired generations of theorists and engineers and has made a lasting impact on how we handle data. Immink established the area of constrained codes as an important subfield of information and coding theory, and his myriad practical coding

constructions have accelerated the development of digital data storage technology. Immink’s eight-to-fourteen modulation (EFM) technique for digital recordings improved playing time and was more robust to dust, fingerprints, and disk damage such as scratches, leading to the creation of the CD. The introduction of the CD

in 1982 marked the beginning of the change from analog to digital sound technology. It quickly revived a sluggish music industry and essentially replaced the traditional music delivery methods of vinyl records and cassette tapes. This optical storage technology also provided low-cost, high-capacity, flexible data storage exceeding what computer hard drives could accommodate at that time.

Building on his EFM technology, Immink developed an advanced channel coding method called EFMPlus, which was integral to the design of the DVD. Offering higher storage capacity than the CD, but at the same dimensions, the DVD is able to store any kind of digital data from computer software to video programs. On its introduction in 1995, the DVD became the fastest adopted CE product and generated billions of dollars for the film industry. While the DVD was quickly replacing traditional video cassettes, Immink was already working on further advancements to his original invention by developing an even higher-density optical disk format. This work evolved into the BD, which can handle high-definition content suitable for feature films and video games. Figure 2 is the image of Immink from the 2017 IEEE Awards Booklet.

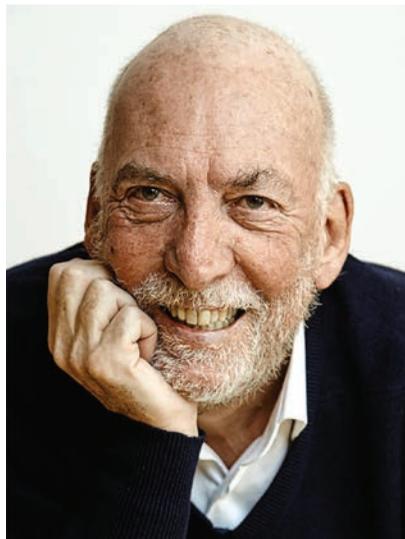


FIGURE 2. Kees Immink.

Immink was also among the first engineers to conduct experiments with optical recordable and erasable media, bringing the mini disk, CD-R, DVD-R, and BD-R formats into the homes of consumers. He also added to broadcast-quality recording products for consumers with his contributions to the digital video camcorder.

With approximately 500 billion CDs, DVDs, and BDs estimated to be in use today, Immink's inventions have impacted people all over the world. As recognition of Immink's role in the

digital media revolution, his honors include an Emmy award from the U.S. National Academy of Arts and Sciences, induction into the Consumer Electronics Hall of Fame, and knighthood by Queen Beatrix of The Netherlands. An IEEE Life Fellow, a foreign member of the U.S. National Academy of Engineering, and a recipient of the 1999 IEEE Edison Medal, Immink is president of Turing Machines, Inc., Rotterdam, The Netherlands.

Sponsored by the IEEE Foundation, the IEEE Medal of Honor was established in 1917 and is the highest IEEE award. It is presented when a candidate is identified as having made a clearly exceptional contribution to the science and technology of concern to the IEEE. The award consists of a gold medal, a bronze replica, a certificate, and honorarium. In a given year, if the Medal of Honor Recipient is not an IEEE Member, that recipient will be automatically recommended to the IEEE Board of Directors for IEEE Honorary Membership.

—Tom Coughlin

REFERENCE

[1] 2017 IEEE Awards. [Online]. Available: <http://online.qmag.com/IEEEAwards17?pg=9&mode=2#pg19&mode2>

Visions of the Future

Cosponsored and hosted on 15 2017 May by the Massachusetts Institute of Technology (MIT) IEEE Consumer Electronics (CE) Society Student Chapter, the Visions of the Future program of the Boston Chapter of

the IEEE CE Society consisted of presentations by three members of the Student Chapter who shared their visions of the CE future, followed by a researcher from the MIT Media Lab on current visionary work. A panel of two CE Society Chapter leaders and Massachusetts General Hospital medical device physician/inventors served to critique the students and manage questions from the audience.

After introductory remarks from Wei Low, chair of the Voltage group of the MIT Chapter, and from L. Dennis Shapiro, chair of the Boston Chapter, the panel was introduced. The group consisted of Anthony Vetro, IEEE Fellow, past president of the CE Society and deputy director and multimedia group manager, Mitsubishi Electric Research Labs, Cambridge, Massachusetts; Nathaniel Sims, M.D., of

Digital Object Identifier 10.1109/MCE.2017.2715620
Date of publication: 22 September 2017