Data-Centric Computing

Speaker :



Dr. Tei-Wei Kuo (CTO of Delta Electronics)

Abstract

Flash memory opens a window of opportunities to a new world of computing over 20 years ago. Since then, storage devices gain their momentum in performance, energy, and even access behaviors. With over 1000 times in performance improvement over storage in recent years, there is another wave of adventure in removing traditional I/O bottlenecks in computer designs. In this talk, I will present some solutions in neuromorphic computing which empower memory chips to own new capabilities in computing. In particular, I shall address challenges in in-memory computing in application co-designs and show how to utilize special characteristics of non-volatile memory in deep learning.

Speaker Bio

Prof. Kuo received his B.S.E. and Ph.D. degrees in Computer Science from National Taiwan University and University of Texas at Austin in 1986 and 1994, respectively. He is CTO of Delta Electronics (with a leave from his university since 2024.02) and Distinguished Professor of Department of Computer Science and Information Engineering of National Taiwan University, where he was Interim President (2017.10-2019.01) and Executive Vice President for Academics and Research (2016.08-2019.01). Prof. Kuo was Adjunct/Visiting Professor and Senior Advisor (Research) of Mohamed bin Zayed University of Artificial Intelligence, United Arab Emirates (2023.02-2024.01), and Lee Shau Kee Chair Professor of Information Engineering, Advisor to President (Information Technology), and Founding Dean of College of Engineering, City University of Hong Kong (2019.08-2022.07). His research interest includes embedded systems, non-volatile-memory software designs, neuromorphic computing, and real-time systems.

Dr. Kuo is Fellow of ACM, IEEE, and US National Academy of Inventors and a Member of European Academy of Sciences and Arts. He is Chair of ACM SIGAPP (since 2023) and Chair of ACM SIGBED Award Committee. Prof. Kuo received numerous awards and recognition, including Academic Award of Taiwan Ministry of Education (2023), Humboldt Research Award (Germany; 2021), Outstanding Technical Achievement and Leadership Award (2017) from IEEE TC on Real-Time Systems, Distinguished Leadership Award (2017) from IEEE TC on Cyber-Physical Systems, and Distinguished Research Award from Taiwan NSTC/MoST/NSC for 3 times. Prof. Kuo is the founding Editor-in-Chief of ACM Transactions on Cyber-Physical Systems (2015-2021) and a program committee member of many top conferences. He has over 350 technical papers published in international journals and conferences and received many best paper awards, including Best Paper Award from ACM/IEEE CODES+ISSS 2019 and 2022 and ACM HotStorage 2021. He is General Co-Chair of CPS-IoT Week (2024) and General Chair of ESWEEK (2025).

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2024/05/02
15:00~16:30

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