SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
COLLEGE OF DESIGN AND ENGINEERING
Website: https://cde.nus.edu.sg/ece

Area: Integrated Circuits & Embedded Systems (ICES)

Host: Professor Massimo Alioto

Research Seminar

TOPIC	:	**The Artificial Intelligence of Things (AIoT): The Next Computing Revolution**
SPEAKER	:	**Professor Dennis Sylvester** **University of Michigan**
DATE	:	**Friday, 20 March 2026**
TIME	:	**2pm – 3pm**
VENUE	:	**Block E7, E7-03-09 - Seminar Room 4**

ABSTRACT

The Artificial Intelligence of Things (AIoT) is poised to be the next major computing paradigm, as predicted by Bell's Law of Computing Classes. Unlike current cloud-based AI, AIoT integrates substantial intelligence directly into endpoint devices. AIoT devices will be always-on, sub-Watt, affordable systems capable of independent multi-modal data collection, inference, and even self-training. This shift will drastically improve energy efficiency, security, responsiveness, and reduce network congestion. Developing AIoT hardware presents significant challenges, particularly regarding energy efficiency and memory constraints since current deep learning models are ill-suited for endpoint implementation. I will discuss various recent developments in multi-task capabilities, energy reduction strategies in AI hardware implementations, and co-design of sensor interfaces with machine learning accelerators. I will conclude the talk by looking at new applications including smart textiles and microrobotics.

BIOGRAPHY

Dennis Sylvester is the Peter and Evelyn Fuss Chair and Edward S. Davidson Collegiate Professor of Electrical and Computer Engineering at the University of Michigan, Ann Arbor. He has published over 550 articles in his research areas, which include the design of millimeter-scale computing systems and energy efficient near-threshold computing. He is past Editor-in-Chief of the IEEE Journal of Solid-State Circuits, holds 54 US patents, and serves as a consultant and technical advisory board member for various semiconductor firms as well as a frequent expert witness in IP litigation. He co-founded Ambiq, a publicly traded fabless semiconductor company developing ultra-low power mixed-signal solutions for compact wireless devices. He is a Fellow of the IEEE and the National Academy of Inventors, and received his PhD from the University of California, Berkeley.