

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: Prof Massimo Alioto

Research Seminar

TOPIC	:	End-to-end Open-Source Platforms in the era of Domain-Specific Design Automation
SPEAKER	:	Prof Luca Benini
DATE	:	Friday, 8 May 2026
TIME	:	3 PM-4 PM
VENUE	:	E5-02-32 SEMINAR ROOM

ABSTRACT

Modern computing workloads, from generative AI to digital twins to fully homomorphic encryption, require sustained energy efficiency improvements, which cannot be matched simply by technology evolution. To tackle the challenge, we need to aggressively optimize computing platforms by leveraging specialization across all levels of the design hierarchy and by pushing into domain-specific design automation tools and methodologies. In this talk, I will give concrete examples of deep domain specialization, emphasizing the strategic importance of an end-to-end (models, software, instruction set architecture, digital IPs, EDA tools) open-platform approach to achieve the ultimate efficiency, while promoting a healthy innovation ecosystem.

BIOGRAPHY

Luca Benini holds the chair of digital Circuits and systems at ETHZ and is a Full Professor at the Università di Bologna. He received a PhD from Stanford University. His research interests are in energy-efficient parallel computing systems, smart sensing micro-systems, and machine learning hardware. He is a Fellow of the IEEE, of the ACM, a member of the Academia Europaea, and of the Italian Academy of Engineering and Technology. He is the recipient of several awards, including the 2023 IEEE CS E.J. McCluskey Award and the 2024 IEEE CS Open-Source Hardware Contribution Award.

