

Session 27: IEDM Panel

Tuesday, December 10, 8:00 p.m.

Continental 1-5

Rest in Peace Moore's Law, Long Live AI

Moderator: Vijay Narayanan, IBM Research

The traditional benefits of Dennard Scaling, the engine behind Moore's law, is facing considerable headwinds with significant increase in process complexity and patterning cost with each successive logic node. At the same time, the demand for compute and memory resources needed for ingesting, processing and extracting actionable intelligence from large volumes of structured and unstructured data is growing exponentially. This is fueling research and development in novel compute technologies and heterogeneous integration techniques.

We assemble a team of industry and academic panelists who will discuss and debate the future of computing and the role of hardware. Will CMOS technology become commoditized and differentiation occur mostly in circuit design, algorithm and architecture development? Will special purpose co-processor adoption rate accelerate beyond CPUs and GPUs ? What is the role of heterogeneous integration in the AI Hardware Ecosystem? Will the traditional memory hierarchy be upended by the arrival of non-volatile memory? Will Analog Accelerators using non-volatile memory elements drive the future semiconductor roadmap as scaling slows, enabling exponential improvements in compute efficiency and performance? These are many of the questions that are on all of our minds and we look forward to having an engaging dialogue with the experts on the panel.

Panelists:

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| Vivek De | Intel |
| Wilfried Haensch | IBM Research |
| Mike Henry | Mythic |
| Ron Ho | Facebook |
| Seongjun Park | Samsung |
| Dimitri Strukov | University of California, Santa Barbara |
| Douglas Yu | TSMC |