Session 4: Networking

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Moore’s Law: Prediction and Realization

John von Neumann: “Truth is much too complicated to allow anything but approximations.”

Gordon Moore: “If Al Gore invented the Internet, I invented the exponential”

Source: Intel
Long-Term Trend: CPU vs. GPU

![Graph showing the performance trend of CPUs and GPUs over time](image-url)

*Courtesy Naga Govindaraju*
Figure 5: McCalpin’s CPU Speed vs. Bandwidth
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- Using Layer 2 Ethernet for High-Throughput, Real-Time Applications
  
  Robert Blau / Mercury Computer Systems, Inc.

- Performance and Energy Comparison of Electrical and Hybrid Photonic Networks for CMPs
  
  Shoaib Kamil / University of California at Berkeley, Lawrence Berkeley National Laboratory
  Ankit Jain and Marghoob Mohiyuddin / University of California at Berkeley
  John Shalf / Lawrence Berkeley National Laboratory
  John Kubiakowicz / University of California at Berkeley
INVITED SPEAKER:

- Invited: A Real-Time Publish-Subscribe Control Plane for a COTM Node
  Darby Mitchell / MIT Lincoln Laboratory