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ABSTRACT

Memory Technology as a Key Enabler for Future Computing Systems

Roughly 300 billion gigabytes of semiconductor memory were produced last year (2018) -- 40GB for every person on the planet -- with projections to double every two years for the foreseeable future. As the user demand for large amounts of instantly accessible data continues to increase, memory is becoming both a solution and a bottleneck, spurring the industry to re-define how memory is used in systems and to innovate for new types of memory. This paper will explore the scaling roadmap for NAND and DRAM memories, the introduction of new emerging memories to supplement NAND and DRAM, and opportunities for changes in system architectures to exploit the inherent capabilities of memory.

BIO

Greg Atwood is a Sr. Fellow in the Micron Technology Development Group focused on new memory concepts. He has been working on memory technologies for 40 years including the industry's first commercially available Flash, MLC Flash, Phase Change Memory, and 3DXPoint programs. His interests span from memory cell material physics through optimal memory implementation in systems. Greg holds a master's degree in physics from Purdue University and has over 60 patents + publications.