UNIVERSITY OF SOUTH FLORIDA

Major Research Area Paper Presentation

Memristor based System Modeling
and Synthesis: A Survey
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For the Ph.D. degree in Computer Science and Engineering

Von Neumann architecture suffers from memory wall problem due to bandwidth mismatch between slower memory and faster CPU. To overcome memory wall problem, non von- Neumann architecture is being actively considered where storage and computing can be performed in the same location. This computing inside memory, a.k.a in-memory computing is a key enabler of today's data-driven computing.

Emerging non-volatile resistive memory technology such as memristor can enable such non von-Neumann computing paradigm. To enable in-memory computing, we explore the potential use of memristor in system modeling. We also explore different memristor based logic synthesis approaches and lastly look into some memory-intensive applications that can be efficiently implemented through the memristive system.

Thursday, April 25, 2019
12:15 PM
ENB 313

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