

UNIVERSITY OF SOUTH FLORIDA

Major Research Area Paper Presentation

Emerging Memory Technologies for Search and Security

by

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For the Ph.D. degree in Computer Science & Engineering

As we approach the end of Dennard scaling for CMOS technology, emerging non-volatile memory technologies have become attractive alternatives for VLSI design. In this work we investigate the emerging memory technologies for associative memory and hardware security. We propose Magnetic Tunnel Junction based Ternary Content Addressable Memory which has fewer transistors and zero leakage compared to other TCAMs in the literature. Aside from this, we leverage the manufacturing and switching variability in Resistive RAM to design a strong arbiter PUF architecture. Proposed arbiter PUF is validated for uniformity, reliability and uniqueness. The implementation of proposed arbiter PUF incurs minimal design changes to a conventional RRAM memory architecture.

25th July 2016, 2 PM - 3PM

Location: ENB 313

THE PUBLIC IS INVITED

Examining Committee

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