

UNIVERSITY OF SOUTH FLORIDA

Major Research Area Paper Presentation

Processing-in-Memory (PIM) for Internet-of-Things (IoT) Edge Computing
by

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

Traditional computing systems are not designed to handle huge data efficiently with sequential and/or pipelined architectures. They incur high performance and energy costs with the mobility of large data between the processor and memory system. This motivates researchers to come up with novel ideas in order to design a sustainable and optimized processor and memory system. In this presentation, we will review and analyze the Processing-in-memory computing (PIM) architectures, state-of-the-art emerging memory technologies, and applications related to image processing such as edge detection algorithms and other block-based algorithms in the context of IoT edge computing. We will also outline proposed research directions on three major problems to be addressed with CMOS VLSI based in-memory computing architectures and emerging memory technologies. First, we will describe the preliminary design and implementation of CMOS VLSI based PIM architecture for edge detection algorithm. Second, we will discuss and analyze block-based algorithms for the design and implementation of a VLSI based in-memory architecture. Third, we will discuss the emerging memory technologies for designing the architectures for image processing tasks.

Friday, April 9th, 2021

12:00 PM

Online, [Microsoft Teams](#)

Please email rajeevjoshi@usf.edu for more information

THE PUBLIC IS INVITED

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