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Editors

Approximate Circuits

Methodologies and CAD

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Approximate Circuits

Methodologies and CAD

- Presents an overview of the approximate arithmetic building blocks that can be used for designing power/performance efficient computing units
- Discusses effective memory approximation techniques to employ in conventional, i.e., DRAM and SRAM, as well as emerging, i.e., PCM and STT-RAM, memory technologies, for improving performance, power, and/or energy efficiency of the memory for error resilient applications
- Includes an overview of hardware or software/hardware approximation techniques that operate across entire computing devices, including processors, graphical processors, and accelerators that can form a SoC with processors

This book provides readers with a comprehensive, state-of-the-art overview of approximate computing, enabling the design trade-off of accuracy for achieving better power/performance efficiencies, through the simplification of underlying computing resources. The authors describe in detail various efforts to generate approximate hardware systems, while still providing an overview of support techniques at other computing layers. The book is organized by techniques for various hardware components, from basic building blocks to general circuits and systems.

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