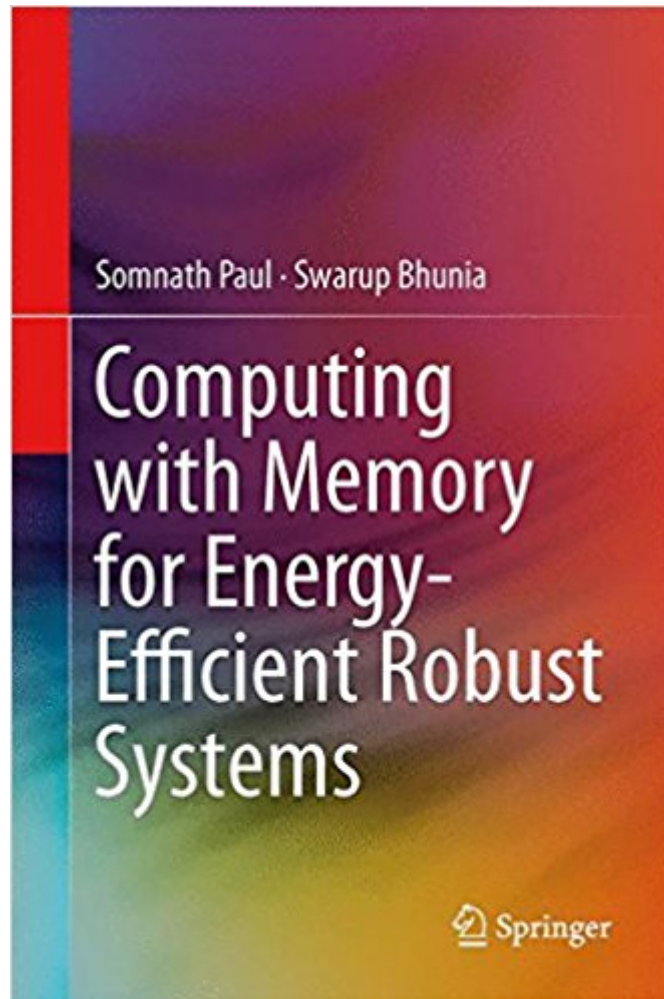


The book was found

Computing With Memory For Energy-Efficient Robust Systems



Synopsis

This book analyzes energy and reliability as major challenges faced by designers of computing frameworks in the nanometer technology regime. The authors describe the existing solutions to address these challenges and then reveal a new reconfigurable computing platform, which leverages high-density nanoscale memory for both data storage and computation to maximize the energy-efficiency and reliability. The energy and reliability benefits of this new paradigm are illustrated and the design challenges are discussed. Various hardware and software aspects of this exciting computing paradigm are described, particularly with respect to hardware-software co-designed frameworks, where the hardware unit can be reconfigured to mimic diverse application behavior. Finally, the energy-efficiency of the paradigm described is compared with other, well-known reconfigurable computing platforms.

Book Information

Hardcover: 210 pages

Publisher: Springer; 2014 edition (September 7, 2013)

Language: English

ISBN-10: 1461477972

ISBN-13: 978-1461477976

Product Dimensions: 6.1 x 0.7 x 9.2 inches

Shipping Weight: 1.2 pounds (View shipping rates and policies)

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With traditional CMOS scaling reaching unprecedented levels, alternative CPU architectures must be explored, and their pros and cons enumerated with respect to existing alternatives. This well-written book will enable researchers and practitioners in the field of High Performance Computer Architecture to delve deep into the topic, and will provide extremely useful in being a guiding light for further research in this field.

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