

# Handbook of Research on Methodologies and Applications of Supercomputing

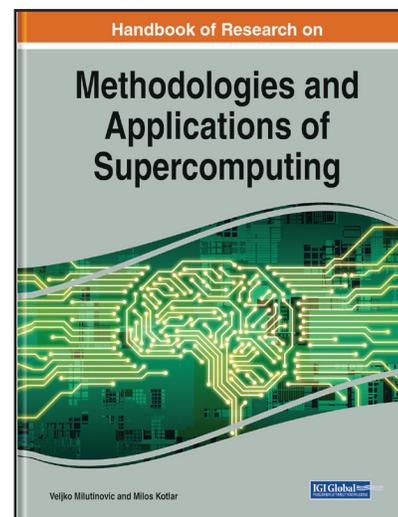
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## Description:

As computers continue to remain essential tools for the pursuit of physics, medicine, economics, social sciences, and more, supercomputers are proving that they can further extend and greatly enhance as-of-yet undiscovered knowledge and solve the world's most complex problems. As these instruments continue to lead to groundbreaking discoveries and breakthroughs, it is imperative that research remains up to date with the latest findings and uses.

The **Handbook of Research on Methodologies and Applications of Supercomputing** is a comprehensive and critical reference book that provides research on the latest advances of control flow and dataflow supercomputing and highlights selected emerging big data applications needing high acceleration and/or low power. Consequently, this book advocates the need for hybrid computing, where the control flow part represents the host architecture and dataflow part represents the acceleration architecture. These issues cover the initial eight chapters. The remaining eight chapters cover selected modern applications that are best implemented on a hybrid computer, in which the transactional parts (serial code) are implemented on the control flow part and the loops (parallel code) on the dataflow part. These final eight chapters cover two major application domains: scientific computing and computing for digital economy. This book offers applications in marketing, medicine, energy systems, and library library science, among others, and is an essential source for scientists, programmers, engineers, practitioners, researchers, academicians, and students interested in the latest findings and advancements in supercomputing.



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