

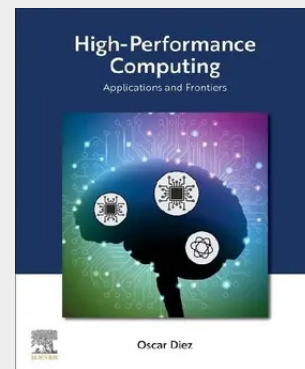
High-Performance Computing

Applications and Frontiers

High-Performance Computing: Applications and Frontiers serves as an essential, up-to-date guide for those seeking to master the rapidly evolving field of HPC. Building on foundational concepts, this volume delves into specialized tools and emerging technologies shaping modern research and industry, such as parallel and distributed systems, GPU programming, quantum computing, and cloud-based solutions. Designed for advanced students, researchers, and professionals, it prepares readers to tackle real-world challenges by combining theoretical insights with practical expertise, offering a clear roadmap for navigating both established and cutting-edge HPC landscapes. The book further distinguishes itself by exploring domain-specific applications, machine learning, and the future trajectory of high-performance computing. Key topics include containerization, AI-powered HPC, hybrid and multi-cloud strategies, as well as recent advancements in GPU and quantum technologies. With its blend of theory and hands-on examples, this book is a versatile reference that meets the growing demand for a comprehensive resource in today's data-driven world.

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