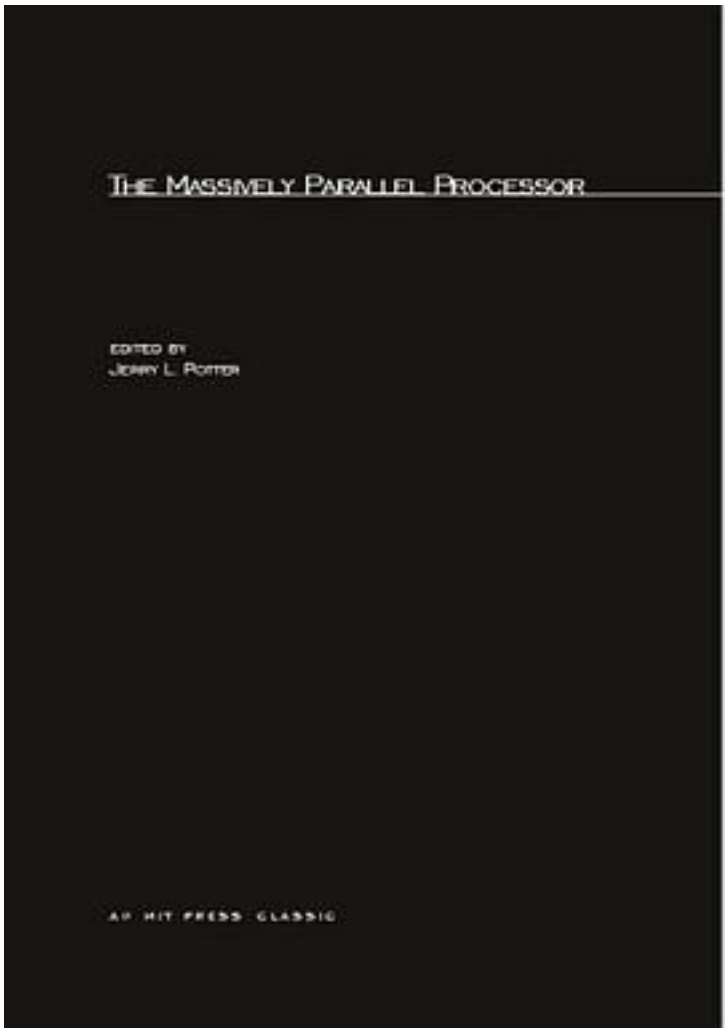
The Massively Parallel Processor (Scientific Computation)



The Massively Parallel Processor (Scientific Computation)_下载链接1_

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The development of parallel processing, with the attendant technology of advanced software engineering, VLSI circuits, and artificial intelligence, now allows high-performance computer systems to reach the speeds necessary to meet the challenge of future complex scientific and commercial applications. This collection of articles documents the design of one such computer, a single instruction multiple data stream (SIMD) class supercomputer with 16,834 processing units capable of over 6 billion 8 bit operations per second. It provides a complete description of the Massively Parallel Processor (MPP), including discussions of hardware and software with special emphasis on applications, algorithms, and programming.This system with its massively parallel hardware and advanced software is on the cutting edge of parallel processing research, making possible AI, database, and image processing applications that were once thought to be inconceivable. The massively parallel processor represents the first step toward the large-scale parallelism needed in the computers of tomorrow. Orginally built for a variety of image-processing tasks, it is fully programmable and applicable to any problem with sizeable data demands.Contents: "History of the MPP," D. Schaefer; "Data Structures for Implementing the Classy Algorithm on the MPP," R. White; "Inversion of Positive Definite Matrices on the MPP," R. White; "LANDSAT-4 Thematic Mapper Data Processing with the MPP," R. O. Faiss; "Fluid Dynamics Modeling," E. J. Gallopoulas; "Database Management," E. Davis; "List Based Processing on the MPP," J. L. Potter; "The Massively Parallel Processor System Overvew," K. E. Batcher; "Array Unit," K. E. Batcher; "Array Control Unit," K. E. Batcher; "Staging Memory," K. E. Batcher; "PE Design," J. Burkley; "Programming the MPP," J. L. Potter; "Parallel Pascal and the MPP," A. P Reeves; "MPP System Software," K. E. Batcher; "MPP Program Development and Simulation," E. J. Gallopoulas.

作者介绍:

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