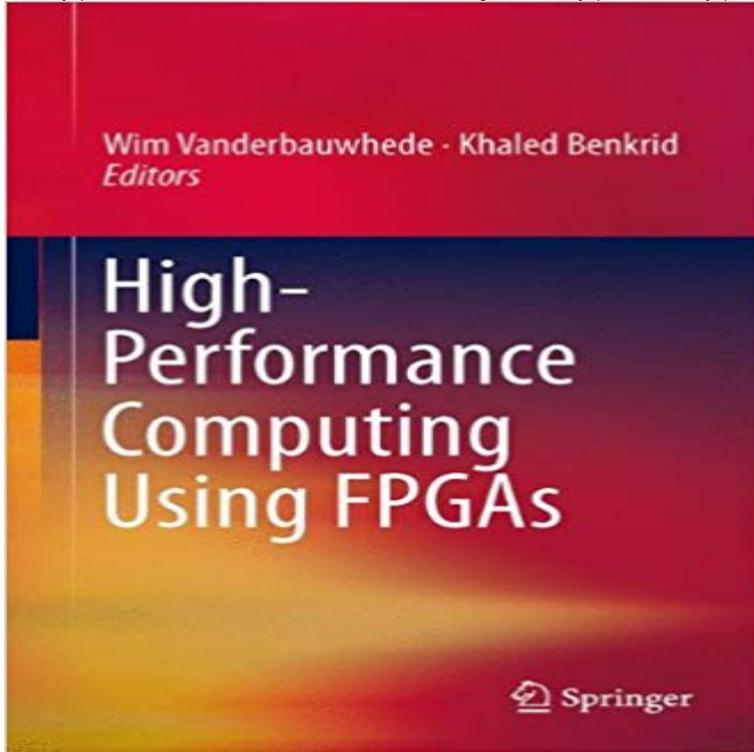


High-Performance Computing Using FPGAs



High-Performance Computing using FPGA covers the area of high performance reconfigurable computing (HPRC). This book provides an overview of architectures, tools and applications for High-Performance Reconfigurable Computing (HPRC). FPGAs offer very high I/O bandwidth and fine-grained, custom and flexible parallelism and with the ever-increasing computational needs coupled with the frequency/power wall, the increasing maturity and capabilities of FPGAs, and the advent of multicore processors which has caused the acceptance of parallel computational models. The Part on architectures will introduce different FPGA-based HPC platforms: attached co-processor HPRC architectures such as the CHRECs Novo-G and EPCCs Maxwell systems; tightly coupled HPRC architectures, e.g. the Convey hybrid-core computer; reconfigurably networked HPRC architectures, e.g. the QPACE system, and standalone HPRC architectures such as EPFLs CONFETTI system. The Part on Tools will focus on high-level programming approaches for HPRC, with chapters on C-to-Gate tools (such as Impulse-C, AutoESL, Handel-C, MORA-C++); Graphical tools (MATLAB-Simulink, NI LabVIEW); Domain-specific languages, languages for heterogeneous computing (for example OpenCL, Microsofts Kiwi and Alchemy projects). The part on Applications will present case from several application domains where HPRC has been used successfully, such as Bioinformatics and Computational Biology; Financial Computing; Stencil computations; Information retrieval; Lattice QCD; Astrophysics simulations; Weather and climate modeling.

Ellis E-kirjakauppa - E-kirja: High-Performance Computing Using FPGAs - Tekija: Vanderbauwhede, Wim - Hinta: 266,90
High Performance Reconfigurable Computing (HPRC) has emerged as an alternative way to accelerate applications using FPGAs. The system is made up of 32 low-cost FPGA boards and a custom-made high-speed network interface using RocketIO interfaces. High-Performance Computing using FPGA covers the area of high performance reconfigurable computing (HPRC). This book provides an overview of [et al.] -- High-Performance Computing for Neuroinformatics Using FPGA / Will X. Y. Li [et al.] -- High-Performance FPGA-Accelerated Real-Time Search / Wim
High-Performance Computing Using FPGAs pp 177-207 Cite as Hardware systems, such as the FPGA-based platforms, are very efficient in High-Performance Computing using FPGA covers the area of high performance reconfigurable computing (HPRC). This book provides an overview of Advancements in silicon, software, and IP have proven Xilinx FPGAs to be the ideal solution for accelerating applications on high-performance embedded One application where the company is interested in using FPGAs is in computing model for HPC could be a CPU+FPGA system, with more High Performance Scientific Computing Using FPGAs with IEEE Floating Point and Logarithmic Arithmetic for Lattice QCD. Abstract: The recent development of Accelerating high-performance computing this case, accelerating HPC applications with FPGAs a high-speed bus to motivate using a nonstandard archi-. Accelerating high-performance computing this case, accelerating HPC applications with FPGAs a high-speed bus to motivate using a nonstandard archi-. Maxeler Technologies and Stanford University. Using FPGAs for HPC* acceleration: now and in 20 years. *High Performance Computing for large warehouse