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Nota di contenuto	Architecture, Networks, and Storage -- CPU Architecture Modelling and Co-design -- Illuminating the I/O Optimization Path of Scientific Applications -- Efficient Large Scale DLRM Implementation on Heterogeneous Memory Systems -- HPC Algorithms & Applications -- Efficient GPU Offloading with OpenMP for a Hyperbolic Finite Volume Solver on Dynamically Adaptive Meshes -- Shallow Water DG Simulations on FPGAs: Design and Comparison of a Novel Code Generation Pipeline -- Massively Parallel Genetic Optimization through Asynchronous Propagation of Populations -- Steering Customized AI Architectures for HPC Scientific Applications -- GPU-based Low-precision Detection Approach for Massive MIMO Systems -- A Mixed Precision Randomized Preconditioner for the LSQR Solver on GPUs -- Ready for the Frontier: Preparing Applications for the World's First Exascale System -- End-to-end Differentiable Reactive Molecular Dynamics Simulations using JAX -- Machine Learning, AI, & Quantum Computing -- Allegro-Legato: Scalable, Fast, and Robust Neural-

Network Quantum Molecular Dynamics via Sharpness-Aware Minimization -- Quantum Annealing vs. QAOA: 127 Qubit Higher-Order Ising Problems on NISQ Computers -- Quantum Circuit Simulation by SGEMM Emulation on Tensor Cores and Automatic Precision Selection -- Performance Modeling, Evaluation, & Analysis -- A study on the performance implications of AArch64 Atomics -- Analyzing Resource Utilization in an HPC System: A Case Study of NERSC's Perlmutter -- Overcoming Weak Scaling Challenges in Tree-based Nearest Neighbor Time Series Mining -- Porting numerical integration codes from CUDA to oneAPI: a case study -- Performance Evaluation of a Next-Generation SX-Aurora TSUBASA Vector Supercomputer -- Programming Environments & Systems Software -- Expression Isolation of Compiler-Induced Numerical Inconsistencies in Heterogeneous Code -- SAI: AI-Enabled Speech Assistant Interface for Science Gateways in HPC.

Sommario/riassunto

This book constitutes the proceedings of the 38th International Conference on High Performance Computing, ISC High Performance 2023, which took place in Hamburg, Germany, in May 2023. The 21 papers presented in this volume were carefully reviewed and selected from 78 submissions. They were organized in topical sections as follows: Architecture, Networks, and Storage; HPC Algorithms & Applications; Machine Learning, AI, & Quantum Computing; Performance Modeling, Evaluation, & Analysis; and Programming Environments & Systems Software.
