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| Soggetti | Computer engineering |
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| Nota di contenuto | Architecture, Networks, and Storage. Accelerating MPI All-to-All Communication with Online Compression on Modern GPU Clusters -- NVIDIA's Quantum InfiniBand Network Congestion Control Technology and Its Impact on Application Performance -- LLM: Realizing Low-Latency Memory by Exploiting Embedded Silicon Photonics for Irregular Workloads -- SU3_Bench on a Programmable Integrated Unified Memory Architecture (PIUMA) and How that Differs from Standard NUMA CPUs -- Machine Learning, AI, and Emerging Technologies -- "Hey CAI" - Conversational AI Enabled User Interface for HPC Tools -- Hy-Fi: Hybrid Five-Dimensional Parallel DNN Training on High-Performance GPU Clusters -- HPC Algorithms and Applications -- |

Efficient Application of Hanging-Node Constraints for Matrix-Free High-Order FEM Computations on CPU and GPU -- Dynamic Task Fusion for a Block-Structured Finite Volume Solver over a Dynamically Adaptive Mesh with Local Time Stepping -- Accelerating Simulated Quantum Annealing with GPU and Tensor Cores -- m-Cubes: An Efficient and Portable Implementation of Multi-dimensional Integration for GPUs -- Performance Modeling, Evaluation, and Analysis -- Comparative Evaluation of Call Graph Generation by Profiling Tools -- MAPredict: Static Analysis Driven Memory Access Prediction Framework for Modern CPUs -- Rapid Execution Time Estimation for Heterogeneous Memory Systems Through Differential Tracing -- Understanding Distributed Deep Learning Performance by Correlating HPC and Machine Learning Measurements -- A Motivating Case Study on Code Variant Selection by Reinforcement Learning -- Programming Environments and System Software -- Remote OpenMP Offloading -- Hybrid Parallel ILU Preconditioner in Linear Solver Library GaspiLS -- A Subset of the CERN Virtual Machine File System: Fast Delivering of Complex Software Stacks for Supercomputing Resources. .

| Sommario/riassunto | This book constitutes the refereed proceedings of the 37th International Conference on High Performance Computing, ISC High Performance 2022, held in Hamburg, Germany, during May 29 – June 2, 2022. The 18 full papers presented were carefully reviewed and selected from 53 submissions. The papers are categorized into the following topical sub-headings: Architecture, Networks, and Storage; Machine Learning, AI, Emerging Technologies; HPC Algorithms and Applications; Performance Modeling, Evaluation and Analysis; and Programming Environments and Systems Software. |