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Units using Python -- Enhancing a GPU-based wave propagation application through loop tiling and loop fission optimizations -- Acceleration of high dimensional quantum simulator QuantumSkynet -- Multi-objective analysis of power consumption and quality of service in datacenters for effective demand response -- Enhancing the sparse matrix storage using reordering techniques -- Towards Fault Tolerance and Resilience in the Sequential Codelet Model -- Artificial Intelligence using HPC Scale -- Parallel-distributed implementation of the Lipizzaner framework for multiobjective coevolutionary training of Generative Adversarial Networks -- Provenance-based Dynamic Fine-Tuning of Cross-Silo Federated Learning -- High Performance Computing Applications -- A GPU Numerical Implementation of a 2D SimplifiedWildfire Spreading Model -- Towards a Multi-GPU Implementation of a Seismic Application -- What does a Nation-Wide Digital Nervous System use of an Operating System? -- The Impact of CUDA Execution Configuration Parameters on the Performance and Energy of a Seismic Application -- High-Performance Computing for Astrophysical Simulations and Astroparticle Observations -- Parallel Hybrid-Heterogeneous Single Value Decomposition Factorization -- Improvement of the Simulation of The Degradation of Reinforced Concrete in Saltwater Environments Using Directives.

Sommario/riassunto

This book constitutes the refereed revised selected papers of the 10th Latin American Conference on High Performance Computing, CARLA 2023, held in Cartagena, Colombia, during September 18–22, 2023. The 14 full papers included in this book were carefully reviewed and selected from 26 submissions. They were organized in topical sections as follows: High Performance Computing (HPC), Artificial Intelligence using HPC Scale and High Performance Computing Applications.