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Nota di contenuto	High Level Synthesis -- High-Level Synthesis of Digital Circuits from Template Haskell and SDF-AP 1 H. H. -- Implementing Synthetic Aperture Radar Backprojection in Chisel – A Field Report.-EasyHBM: Simple and Fast HBM Access for FPGAs using High-Level Synthesis -- Memory Systems -- TREAM: A Tool for Evaluating Error Resilience of Tree-based Models using Approximate Memory.-Split'n'Cover: ISO 26262 Hardware Safety Analysis with SystemC -- Tagged Geometric History Length Access Interval Prediction for Tightly Coupled Memory Systems -- Processor Architecture.-NanoController: A Minimal and Flexible Processor Architecture for UltraLow-Power -- ControlPULP: A RISC-V Power Controller for HPC Processors with Parallel Control-Law Computation Acceleration -- Embedded Software Systems and beyond. -CASA: An Approach for exposing and documenting Concurrency-

related Software Properties -- High-Level Simulation of Embedded Software Vulnerabilities to EM SideChannel Attacks -- Deep Learning Optimization I.-A Design Space Exploration Methodology for Enabling Tensor Train Decomposition in Edge Devices -- Study of DNN-based Ragweed Detection from Drones -- PULP-TrainLib: Enabling On-Device Training for RISC-V Multi-Core MCUs through Performance-Driven Autotuning.-Extra-functional Property Estimation -- The Impact of Dynamic Storage Allocation on CPython Execution Time, Memory Footprint and Energy Consumption: An Empirical Study -- Application runtime estimation for AURIX embedded MCU using deep learning.-A Hybrid Performance Prediction Approach for Fully-Connected Artificial Neural Networks on Multi-Core Platforms -- Deep Learning Optimization I -- A Smart HW-Accelerator for Non-Uniform Linear Interpolation of MLActivation Functions.-Hardware-Aware Evolutionary Filter Pruning -- Innovative Architectures and tools for Security -- Obfuscating the Hierarchy of a Digital IP.-On the effectiveness of true random number generators implemented on FPGAs -- Power and Energy -- SIDAM: A Design Space Exploration Framework for Multi-Sensor Embedded Systems Powered by Energy Harvesting -- A Data-Driven Approach to Lightweight DVFS-Aware Counter-Based Power Modeling for Heterogeneous Platforms.

Sommario/riassunto

This book constitutes the proceedings of the 22st International Conference on Embedded Computer Systems: Architectures, Modeling, and Simulation, SAMOS 2021, which took place in July 2022 in Samos, Greece. The 21 full papers presented in this volume were carefully reviewed and selected from 44 submissions. The papers are organized in topics as follows: High level synthesis; memory systems; processor architecture; embedded software systems and beyond; deep learning optimization; extra-functional property estimation; innovative architectures and tools for security; european research projects on digital systems, services, and platforms.