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Collana	Programming and Software Engineering ; ; 9720
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Soggetti	Logic design Computer logic Programming languages (Electronic computers) Quantum computers Computers Algorithms Logic Design Logics and Meanings of Programs Programming Languages, Compilers, Interpreters Quantum Computing Computation by Abstract Devices Algorithm Analysis and Problem Complexity
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Nota di contenuto	Process Calculi -- Rigid Families for the Reversible pi-calculus -- A calculus for local reversibility -- Static VS Dynamic Reversibility in CCS -- Reversing Single Sessions -- Reversible Models -- Reversible causal graph dynamics -- Boosting Reversible Pushdown Machines By Preprocessing -- Reversible Computation vs. Reversibility in Petri Nets -- Programming Languages -- Energy Efficient Language and Compiler for (Partially) Reversible Algorithms -- Mixing Hardware and Software Reversibility for Speculative Parallel Discrete Event Simulation -- Quaglia -- Elements of a Reversible Object-Oriented Language --

Initial Ideas for Automatic Design and Verification of Control Logic in Reversible HDLs -- Quantum Computing -- Design and Fabrication of CSWAP Gate Based on Nanoelectromechanical Systems -- Design of p-valued Deutsch quantum gates with multiple control signals and mixed polarity -- Using pi-DDsforNearestNeighborOptimizationofQuantumCircuits -- Quantum Programming -- Circular CNOT Circuits: Definition, Analysis and Application to Fault-Tolerant Quantum Circuits -- Towards Quantum Programs Verification: From Quipper Circuits to QPMC -- Circuit Theory -- Application of Permutation Group Theory in Reversible Logic Synthesis -- Strongly Universal Reversible Gate Sets -- Enumeration of reversible functions and its application to circuit complexity -- A finite alternation result for reversible Boolean circuits -- Syntheses -- Generating reversible circuits from higher-order functional programs -- A fast symbolic transformation based algorithm for reversible logic synthesis.-Checking Reversibility of Boolean Functions. .

Sommario/riassunto

This book constitutes the refereed proceedings of the 8th International Conference on Reversible Computation, RC 2016, held in Bologna, Italy, in July 2016. The 18 full and 5 short papers included in this volume were carefully reviewed and selected from 38 submissions. The papers are organized in topical sections named: process calculi; reversible models; programming languages; quantum computing; quantum programming; circuit theory; and syntheses. .