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Descrizione fisica	1 online resource (VIII, 247 p. 315 illus., 24 illus. in color.)
Collana	Programming and Software Engineering, , 2945-9168 ; ; 11497
Disciplina	621.395 004
Soggetti	Logic design Compilers (Computer programs) Computer programming Computer arithmetic and logic units Artificial intelligence Computer systems Logic Design Compilers and Interpreters Programming Techniques Arithmetic and Logic Structures Artificial Intelligence Computer System Implementation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Invited Talk -- Concurrent Quantum Strategies -- Theory and Foundation -- A Birkhoff Connection between Quantum Circuits and Linear Classical Reversible Circuits -- Inversion, Iteration, and the Art of Dual Wielding -- Reversibility vs local creation/destruction -- Characterizing Compatible View Updates in Syntactic Bidirectionalization -- Programming Languages -- Sized Types for low-level Quantum Metaprogramming -- Reversible Imperative Parallel Programs and Debugging -- Circuit Synthesis -- Efficient Realization of

Toffoli and NCV Circuits for IBM QX Architectures -- Automatically Translating Quantum Programs from a Subset of Common Gates to an Adiabatic Representation -- An Efficient Method for Quantum Circuit Placement Problem on a 2-D Grid -- Evaluation of Circuit Synthesis -- Evaluating the Flexibility of A* for Mapping Quantum Circuits -- Evaluating ESOP Optimization Methods in Quantum Compilation Flows -- Applications and Implementations -- Implementing NChooseK on IBM Q Quantum Computers -- Reversible Carry-Lookahead Addition With Few Ancillae -- Controlling Reversibility in Reversing Petri Nets with Application to Wireless Communications.

Sommario/riassunto

This book constitutes the refereed proceedings of the 11th International Conference on Reversible Computation, RC 2019, held in Lausanne, Switzerland, in June 2019. The 12 full papers and two short papers included in this volume were carefully reviewed and selected from 22 submissions. One invited talk is also included. The papers are organized in the following topical sections: theory and foundation; programming languages; circuit synthesis; evaluation of circuit synthesis; and applications and implementations.