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Titolo	Application of Evolutionary Algorithms for Multi-objective Optimization in VLSI and Embedded Systems [[electronic resource] /] / edited by M.C. Bhuvanewari
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Descrizione fisica	1 online resource (181 p.)
Disciplina	006.3 621.39/5
Soggetti	Electronic circuits Computational intelligence Mathematical optimization Circuits and Systems Computational Intelligence Optimization
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Introduction to Multi-Objective Evolutionary Algorithms -- Hardware/Software Partitioning for Embedded Systems -- Circuit Partitioning for VLSI Layout -- Design of Operational Amplifier -- Design Space Exploration for Scheduling and Allocation in High Level Synthesis of Datapaths -- Design Space Exploration of Datapath (Architecture) in High Level Synthesis for Computation Intensive Applications -- Design Flow from Algorithm to RTL using Evolutionary Exploration Approach -- Crosstalk Delay Fault Test Generation -- Scheduling in Heterogeneous Distributed Systems. .
Sommario/riassunto	This book describes how evolutionary algorithms (EA), including genetic algorithms (GA) and particle swarm optimization (PSO) can be utilized for solving multi-objective optimization problems in the area of embedded and VLSI system design. Many complex engineering optimization problems can be modelled as multi-objective formulations. This book provides an introduction to multi-objective

optimization using meta-heuristic algorithms, GA and PSO, and how they can be applied to problems like hardware/software partitioning in embedded systems, circuit partitioning in VLSI, design of operational amplifiers in analog VLSI, design space exploration in high-level synthesis, delay fault testing in VLSI testing, and scheduling in heterogeneous distributed systems. It is shown how, in each case, the various aspects of the EA, namely its representation, and operators like crossover, mutation, etc. can be separately formulated to solve these problems. This book is intended for design engineers and researchers in the field of VLSI and embedded system design. The book introduces multi-objective GA and PSO in a simple and easily understandable way that will appeal to introductory readers.
