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Titolo	Approximate Computing Techniques : From Component- to Application-Level / / edited by Alberto Bosio, Daniel Ménard, Olivier Sentieys
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Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (541 pages)
Collana	Engineering Series
Disciplina	004 004.25
Soggetti	Electronic circuits Cooperating objects (Computer systems) Microprocessors Computer architecture Electronic Circuits and Systems Cyber-Physical Systems Processor Architectures
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 and index.
Nota di contenuto	General introduction Motivations -- Number representations -- Data level approximation -- Dynamic precision scaling -- Hardware level approximation -- Inexact operators -- Computation level approximation - algorithmic level -- Analysis of approximation effect on application quality -- Techniques for finite precision arithmetic -- Compilers and Programming Languages for Approximate Computing -- Design space exploration -- Word-length optimization for fixed-point and floating-point -- HLS of approximate accelerators -- Approximate Computing for IoT Applications -- Approximating Safety-Critical Applications -- Approximate Computing for HPC Applications.
Sommario/riassunto	This book serves as a single-source reference to the latest advances in Approximate Computing (AxC), a promising technique for increasing performance or reducing the cost and power consumption of a computing system. The authors discuss the different AxC design and

validation techniques, and their integration. They also describe real AxC applications, spanning from mobile to high performance computing and also safety-critical applications. Provides a single-source reference to the state-of-the art of approximate computing (AxC); Presents a global picture of the approximate computing paradigm, at various levels of abstraction; Discusses real AxC applications, such as Approximate Computing for IoT, high performance computing and safety-critical applications.