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Titolo	Towards Evolvable Hardware [[electronic resource]] : The Evolutionary Engineering Approach // edited by Eduardo Sanchez, Marco Tomassini
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Collana	Lecture Notes in Computer Science, , 0302-9743 ; ; 1062
Disciplina	004.2/2
Soggetti	Computers Computer hardware Logic design Microprocessors Computer simulation Artificial intelligence Theory of Computation Computer Hardware Logic Design Register-Transfer-Level Implementation Simulation and Modeling Artificial Intelligence
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Nota di contenuto	Field programmable gate array (FPGA) circuits -- Evolutionary algorithms -- Artificial cellular development in optimization and compilation -- CAM-Brain the evolutionary engineering of a billion neuron artificial brain by 2001 which grows/evolves at electronic speeds inside a cellular automata machine (CAM) -- Morphogenesis for evolvable systems -- Evolvable Hardware and its application to pattern recognition and fault-tolerant systems -- Unconstrained evolution and hard consequences -- Embryonics: The birth of synthetic life -- Embryonics: A new family of coarse-grained field-programmable gate array with self-repair and self-reproducing properties -- Evolution and

mobile autonomous robotics -- Development and evolution of hardware behaviors.

Sommario/riassunto

Evolutionary computing, inspired by the biological world, is one of the emergent technologies of our time. Being essentially a software activity, it has been successfully applied, e.g. for optimization and machine learning in various areas. The tremendous increase in computational power and, more recently, the appearance of a new generation of programmable logic devices allow for a new approach to designing computing machines inspired by biological models: it is now possible to make the hardware itself evolve. This book is based on a workshop on evolvable hardware, held in Lausanne, Switzerland, in October 1995. It reports the state of the art of research in this field and presents two introductory chapters, written with the novice reader in mind.
