

1. Record Nr.	UNINA9910143633503321
Titolo	Evolvable Systems: From Biology to Hardware [[electronic resource] ] : Third International Conference, ICES 2000, Edinburgh, Scotland, UK, April 17-19, 2000 Proceedings // edited by Julian F. Miller, Adrian Thompson, Peter Thomson, Terence C. Fogarty
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2000
ISBN	3-540-46406-9
Edizione	[1st ed. 2000.]
Descrizione fisica	1 online resource (X, 290 p.)
Collana	Lecture Notes in Computer Science, , 0302-9743 ; ; 1801
Disciplina	005.1
Soggetti	Artificial intelligence Computer engineering Computer hardware Computers Bioinformatics Computational biology Artificial Intelligence Computer Engineering Computer Hardware Computation by Abstract Devices Computer Appl. in Life Sciences
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Automatic Synthesis, Placement, and Routing of an Amplifier Circuit by Means of Genetic Programming -- Immunotronics : Hardware Fault Tolerance Inspired by the Immune System -- Ant Colony System for the Design of Combinational Logic Circuits -- Evolving Cellular Automata for Self-Testing Hardware -- Dynamic Optimisation of Non-linear Feed-Forward Circuits -- From the Sea to the Sidewalk: The Evolution of Hexapod Walking Gaits by a Genetic Algorithm -- Experiments in Evolvable Filter Design using Pulse Based Programmable Analogue VLSI Models -- The Intrinsic Evolution of Virtex Devices Through Internet

Reconfigurable Logic -- Evolution of Controllers from a High-Level Simulator to a High DOF Robot -- The Evolution of 3-d C.A. to Perform a Collective Behavior Task -- Initial Evaluation of an Evolvable Microwave Circuit -- Towards an Artificial Pinna for a Narrow-Band Biomimetic Sonarhead -- Towards a Silicon Primordial Soup: A Fast Approach to Hardware Evolution with a VLSI Transistor Array -- Understanding Inherent Qualities of Evolved Circuits: Evolutionary History as a Predictor of Fault Tolerance -- Comparison between Three Heuristic Algorithms to Repair a Large-Scale MIMD Computer -- A Hardware Implementation of an Embryonic Architecture Using Virtex® FPGAs -- Everything on the Chip: A Hardware-Based Self-Contained Spatially-Structured Genetic Algorithm for Signal Processing -- Evolutionary Techniques in Physical Robotics -- Biology Meets Electronics: the Path to a Bio-Inspired FPGA -- The Design and Implementation of Custom Architectures for Evolvable Hardware Using Off-the-Shelf Programmable Devices -- Mixtrinsic Evolution -- Evolution of Robustness in an Electronics Design -- Circuit Evolution and Visualisation -- Evolutionary Robots with Fast Adaptive Behavior in New Environments -- The Advantages of Landscape Neutrality in Digital Circuit Evolution -- Genetic Algorithm-Based Design Methodology for Pattern Recognition Hardware -- A Flexible Model of a CMOS Field Programmable Transistor Array Targeted for Hardware Evolution.

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Sommario/riassunto

This book constitutes the refereed proceedings of the Third International Conference on Evolvable Systems: From Biology to Hardware, ICES 2000, held in Edinburgh, Scotland, UK, in April 2000. The 27 revised full papers presented were carefully reviewed and selected for inclusion in the proceedings. Among the topics covered are evaluation of digital systems, evolution of analog systems, embryonic electronics, bio-inspired systems, artificial neural networks, adaptive robotics, adaptive hardware platforms, molecular computing, reconfigurable systems, immune systems, and self-repair.

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