

Table of Contents

Field Programmable Gate Array (FPGA) Circuits
E. Sanchez 1

Evolutionary Algorithms
M. Tomassini 19

Artificial Cellular Development in Optimization and Compilation
F. Gruau 48

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)
H. de Garis 76

Morphogenesis for Evolvable Systems
H. Kitano 99

Evolvable Hardware and Its Applications to Pattern Recognition and Fault-Tolerant Systems
T. Higuchi, M. Iwata, I. Kajitani, H. Iba, Y. Hirao, T. Furuya, B. Manderick 118

Unconstrained Evolution and Hard Consequences
A. Thompson, I. Harvey, P. Husbands 136

Embryonics: The Birth of Synthetic Life
P. Marchal, P. Nussbaum, C. Piguet, S. Durand, D. Mange, E. Sanchez, A. Stauffer, G. Tempesti 166

Embryonics: A New Family of Coarse-Grained Field Programmable Gate Array with Self-Repair and Self-Reproducing Properties
D. Mange, M. Goeke, D. Madon, A. Stauffer, G. Tempesti, S. Durand 197

Evolution and Mobile Autonomous Robotics
F. Mondada, D. Floreano 221

Development and Evolution of Hardware Behaviors
H. Hemmi, J. Mizoguchi, K. Shimohara 250