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| Descrizione fisica | 1 online resource (XIV, 156 p. 68 illus., 60 illus. in color.) |
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| Disciplina | 006.32 |
| Soggetti | Computational intelligence |
| | Artificial intelligence |
| | Neural networks (Computer science) |
| | Computer simulation |
| | Computational Intelligence |
| | Artificial Intelligence |
| | Mathematical Models of Cognitive Processes and Neural Networks |
| | Computer Modelling |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | Part I: Evolutionary algorithms -- Introduction to Evolutionary Single-objective Optimisation -- Particle Swarm Optimisation -- Ant Colony Optimization -- Genetic Algorithm -- Biogeography-Based Optimization -- Part II: Evolutionary Neural Networks -- Evolutionary Feedforward Neural Networks -- Evolutionary Multi-Layer Perceptron -- Evolutionary Radial Basis Function Networks -- Evolutionary Deep Neural Networks. |
| Sommario/riassunto | This book introduces readers to the fundamentals of artificial neural networks, with a special emphasis on evolutionary algorithms. At first, the book offers a literature review of several well-regarded evolutionary algorithms, including particle swarm and ant colony optimization, genetic algorithms and biogeography-based optimization. It then proposes evolutionary version of several types of neural networks such as feed forward neural networks, radial basis function networks, as well as recurrent neural networks and multi-later perceptron. Most of the |

challenges that have to be addressed when training artificial neural networks using evolutionary algorithms are discussed in detail. The book also demonstrates the application of the proposed algorithms for several purposes such as classification, clustering, approximation, and prediction problems. It provides a tutorial on how to design, adapt, and evaluate artificial neural networks as well, and includes source codes for most of the proposed techniques as supplementary materials. .