1. Record Nr. UNINA9910254330003321

Titolo	Nature-Inspired Computing and Optimization : Theory and Applications / / edited by Srikanta Patnaik, Xin-She Yang, Kazumi Nakamatsu
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2017
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (XXI, 494 p. 191 illus., 43 illus. in color.)
Collana	Modeling and Optimization in Science and Technologies, , 2196-7326 ; ; 10
Disciplina	006.3
Soggetti	Computational intelligence Mathematical optimization Artificial intelligence Computer simulation Engineering economy Computational Intelligence Optimization Artificial Intelligence Simulation and Modeling Engineering Economics, Organization, Logistics, Marketing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	From the content: The Nature of Nature: Why Nature Inspired Algorithms Work -- Improved Bat Algorithm in Noise-Free and Noisy Environments -- Multi-objective Ant Colony Optimisation in Wireless Sensor Networks.le.
Sommario/riassunto	The book provides readers with a snapshot of the state of the art in the field of nature-inspired computing and its application in optimization. The approach is mainly practice-oriented: each bio-inspired technique or algorithm is introduced together with one of its possible applications. Applications cover a wide range of real-world optimization problems: from feature selection and image enhancement to scheduling and dynamic resource management, from wireless sensor networks and wiring network diagnosis to sports training planning and

gene expression, from topology control and morphological filters to nutritional meal design and antenna array design. There are a few theoretical chapters comparing different existing techniques, exploring the advantages of nature-inspired computing over other methods, and investigating the mixing time of genetic algorithms. The book also introduces a wide range of algorithms, including the ant colony optimization, the bat algorithm, genetic algorithms, the collision-based optimization algorithm, the flower pollination algorithm, multi-agent systems and particle swarm optimization. This timely book is intended as a practice-oriented reference guide for students, researchers and professionals.