1. Record Nr. UNINA9910299735003321

Autore	Pintea Camelia-Mihaela
Titolo	Advances in bio-inspired computing for combinatorial optimization problems / / Camelia-Mihaela Pintea
Pubbl/distr/stampa	Berlin ; ; Heidleberg, : Springer-Verlag, 2014
ISBN	3-642-40179-1
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (x, 188 pages) : illustrations (some color)
Collana	Intelligent systems reference library ; ; 57
Disciplina	006.3
Soggetti	Biologically-inspired computing Combinatorial optimization
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	"ISSN: 1868-4394."
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Part I Biological Computing and Optimization -- Part II Ant Algorithms -- Part III Bio-inspired Multi-Agent Systems -- Part IV Applications with Bio-inspired Algorithms -- Part V Conclusions and Remarks.
Sommario/riassunto	"Advances in Bio-inspired Combinatorial Optimization Problems" illustrates several recent bio-inspired efficient algorithms for solving NP-hard problems. Theoretical bio-inspired concepts and models, in particular for agents, ants and virtual robots are described. Large-scale optimization problems, for example: the Generalized Traveling Salesman Problem and the Railway Traveling Salesman Problem, are solved and their results are discussed. Some of the main concepts and models described in this book are: inner rule to guide ant search - a recent model in ant optimization, heterogeneous sensitive ants; virtual sensitive robots; ant-based techniques for static and dynamic routing problems; stigmergic collaborative agents and learning sensitive agents. This monograph is useful for researchers, students and all people interested in the recent natural computing frameworks. The reader is presumed to have knowledge of combinatorial optimization, graph theory, algorithms and programming. The book should furthermore allow readers to acquire ideas, concepts and models to use and develop new software for solving complex real-life problems.