

1. Record Nr.	UNINA9911020136803321
Titolo	Parallel metaheuristics : a new class of algorithms // edited by Enrique Alba
Pubbl/distr/stampa	Hoboken, NJ, : John Wiley, 2005
ISBN	9786610277568 9781280277566 1280277564 9780470315408 0470315407 9780471739388 0471739383 9780471739371 0471739375
Descrizione fisica	1 online resource (574 p.)
Collana	Wiley series on parallel and distributed computing
Altri autori (Persone)	AlbaEnrique
Disciplina	519.6
Soggetti	Mathematical optimization Parallel algorithms Operations research
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	PARALLEL METAHEURISTICS A New Class of Algorithms; Contents; Foreword; Preface; Contributors; Part I INTRODUCTION TO METAHEURISTICS AND PARALLELISM; 1 An Introduction to Metaheuristic Techniques; 1.1 Introduction; 1.2 Trajectory Methods; 1.3 Population-Based Methods; 1.4 Decentralized Metaheuristics; 1.5 Hybridization of Metaheuristics; 1.6 Conclusions; References; 2 Measuring the Performance of Parallel Metaheuristics; 2.1 Introduction; 2.2 Parallel Performance Measures; 2.3 How to Report Results; 2.4 Illustrating the Influence of Measures; 2.5 Conclusions; References 3 New Technologies in Parallelism3.1 Introduction; 3.2 Parallel Computer Architectures: An Overview; 3.3 Shared-Memory and Distributed-Memory Programming; 3.4 Shared-Memory Tools; 3.5

Distributed-Memory Tools; 3.6 Which of Them?; 3.7 Summary; References; 4 Metaheuristics and Parallelism; 4.1 Introduction; 4.2 Parallel LSMS; 4.3 Case Studies of Parallel LSMS; 4.4 Parallel Evolutionary Algorithms; 4.5 Case Studies of Parallel EAs; 4.6 Other Models; 4.7 Conclusions; References; Part II PARALLEL METAHEURISTIC MODELS; 5 Parallel Genetic Algorithms; 5.1 Introduction 5.2 Panmictic Genetic Algorithms 5.3 Structured Genetic Algorithms; 5.4 Parallel Genetic Algorithms; 5.5 Experimental Results; 5.6 Summary; References; 6 Parallel Genetic Programming; 6.1 Introduction to GP; 6.2 Models of Parallel and Distributed GP; 6.3 Problems; 6.4 Real-Life Applications; 6.5 Placement and Routing in FPGA; 6.6 Data Classification Using Cellular Genetic Programming; 6.7 Concluding Discussion; References; 7 Parallel Evolution Strategies; 7.1 Introduction; 7.2 Deployment Scenarios of Parallel Evolutionary Algorithms; 7.3 Sequential Evolutionary Algorithms 7.4 Parallel Evolutionary Algorithms 7.5 Conclusions; References; 8 Parallel Ant Colony Algorithms; 8.1 Introduction; 8.2 Ant Colony Optimization; 8.3 Parallel ACO; 8.4 Hardware Parallelization of ACO; 8.5 Other Ant Colony Approaches; References; 9 Parallel Estimation of Distribution Algorithms; 9.1 Introduction; 9.2 Levels of Parallelism in EDA; 9.3 Parallel Models for EDAs; 9.4 A Classification of Parallel EDAs; 9.5 Conclusions; References; 10 Parallel Scatter Search; 10.1 Introduction; 10.2 Scatter Search; 10.3 Parallel Scatter Search 10.4 Application of Scatter Search to the p-Median Problem 10.5 Application of Scatter Search to Feature Subset Selection; 10.6 Computational Experiments; 10.7 Conclusions; References; 11 Parallel Variable Neighborhood Search; 11.1 Introduction; 11.2 The VNS Metaheuristic; 11.3 The Parallelizations; 11.4 Application of VNS for the p-median; 11.5 Computational Experiments; 11.6 Conclusions; References; 12 Parallel Simulated Annealing; 12.1 Introduction; 12.2 Simulated Annealing; 12.3 Parallel Simulated Annealing; 12.4 A Case Study; 12.5 Summary; References; 13 Parallel Tabu Search 13.1 Introduction

Sommario/riassunto

Solving complex optimization problems with parallel metaheuristics
Parallel Metaheuristics brings together an international group of experts in parallelism and metaheuristics to provide a much-needed synthesis of these two fields. Readers discover how metaheuristic techniques can provide useful and practical solutions for a wide range of problems and application domains, with an emphasis on the fields of telecommunications and bioinformatics. This volume fills a long-existing gap, allowing researchers and practitioners to develop efficient metaheuristic algorithms to find solutions.
