

## Parallel metaheuristics [ a new class of algorithms /

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Electronic books

Monografía

Solving complex optimization problems with parallel metaheuristicsParallel 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

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**Contenido:** 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 Algorithms5.3 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 Algorithms7.5 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 Problem10.5 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

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