

# **Studies in Computational Intelligence**

Volume 580

## **Series editor**

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### *About this Series*

The series “Studies in Computational Intelligence” (SCI) publishes new developments and advances in the various areas of computational intelligence—quickly and with a high quality. The intent is to cover the theory, applications, and design methods of computational intelligence, as embedded in the fields of engineering, computer science, physics and life sciences, as well as the methodologies behind them. The series contains monographs, lecture notes and edited volumes in computational intelligence spanning the areas of neural networks, connectionist systems, genetic algorithms, evolutionary computation, artificial intelligence, cellular automata, self-organizing systems, soft computing, fuzzy systems, and hybrid intelligent systems. Of particular value to both the contributors and the readership are the short publication timeframe and the world-wide distribution, which enable both wide and rapid dissemination of research output.

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Stefka Fidanova  
Editor

# Recent Advances in Computational Optimization

Results of the Workshop  
on Computational Optimization  
WCO 2013

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# Preface

Many real-world problems arising in engineering, economics, medicine, and other domains can be formulated as optimization tasks. Everyday we solve optimization problems. Optimization occurs in the minimizing time and cost or the maximization of the profit, quality, and efficiency. Such problems are frequently characterized by nonconvex, nondifferentiable, discontinuous, noisy or dynamic objective functions and constraints that ask for adequate computational methods.

This volume is a result of vivid and fruitful discussions held during the Workshop on Computational Optimization. The participants agree that the relevance of the conference topic and the quality of the contributions have clearly suggested that a more comprehensive collection of extended contributions devoted to the area would be very welcome and would certainly contribute to a wider exposure and proliferation of the field and ideas.

The volume includes important real problems like parameter settings for controlling processes in bioreactor, resource-constrained project scheduling, problems arising in transport services, error correcting codes, optimal system performance, energy consumption, and so on. Some of them can be solved applying traditional numerical methods, but others needs a huge amount of computational resources. Therefore, for them it is more appropriate to develop algorithms based on some metaheuristic method like evolutionary computation, ant colony optimization, constrain programming, etc.

April 2014

Stefka Fidanova

# Organization

Workshop on Computational Optimization (WCO 2013) is organized in the framework of Federated Conference on Computer Science and Information Systems FedCSIS—2013.

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# Contents

<b>A Three-Stage Heuristic for the Capacitated Vehicle Routing Problem with Time Windows</b> . . . . .	1
Hakim Akeb, Adel Bouchakhchoukha and Mhand Hifi	
<b>Fuzzy Bicriteria Optimization Approach to Distribution Network Design</b> . . . . .	21
Santiago García-Carbajal, Antonio Palacio, Belarmino Adenso-Díaz and Sebastián Lozano	
<b>Robustness Tools in Dynamic Dial-a-Ride Problems</b> . . . . .	35
Samuel Deleplanque and Alain Quilliot	
<b>Multiple Shooting SQP Algorithm for Optimal Control of DAE Systems with Inconsistent Initial Conditions</b> . . . . .	53
Paweł Drąg and Krystyn Styczeń	
<b>A Constructive Algorithm for Partial Latin Square Extension Problem that Solves Hardest Instances Effectively</b> . . . . .	67
Kazuya Haraguchi	
<b>Branch and Price for Preemptive and Non Preemptive RCPSPP Based on Interval Orders on Precedence Graphs</b> . . . . .	85
Aziz Moukrim, Alain Quilliot and H������ Toussaint	
<b>Population Size Influence on the Genetic and Ant Algorithms Performance in Case of Cultivation Process Modeling</b> . . . . .	107
Olympia Roeva, Stefka Fidanova and Marcin Paprzycki	
<b>A Hybrid Approach to Modeling, Solving and Optimization of the Constrained Decision Problems</b> . . . . .	121
Paweł Sitek and Jarosław Wikarek	



**Biased Random Key Genetic Algorithm for Multi-user  
Earth Observation Scheduling . . . . . 143**  
Panwadee Tangpattanakul, Nicolas Jozefowicz and Pierre Lopez

**Efficient and Scalable Pareto Front Generation for Energy  
and Makespan in Heterogeneous Computing Systems . . . . . 161**  
Kyle M. Tarplee, Ryan Frieze, Anthony A. Maciejewski  
and Howard Jay Siegel

**Measuring Performance of a Hybrid Optimization Algorithm  
on a Set of Benchmark Functions. . . . . 181**  
Ezgi Deniz Ulker and Ali Haydar

**Author Index . . . . . 193**