

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

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Recent Advances in Computational Optimization
Results of the Workshop on Computational Optimization
WCO 2013

Fidanova, S. (Ed.)

2015, X, 193 p. 63 illus., 16 illus. in color., Hardcover

ISBN: 978-3-319-12630-2