

Preface

Numerical and computational methods for solving (multiobjective) optimization, game theory, and machine learning problems are actively researched in recent years. During the last decades, various schools of deterministic and stochastic algorithm research have emerged. In order to solve problems in practice reliably and efficiently, there is a need for work across methodological boundaries.

This book comprises nine selected works on this topic. The work is by participants of the EVOLVE 2013 conference held in July 2013 at Leiden University, The Netherlands, from various fields of science such as computer science, mathematics, and engineering. This book's chapters are peer-reviewed by an international review panel. They provide extended versions of selected papers from the contributions to the conference.

This resulting book includes original work by the authors and covers important topics in both theory and applications, for instance, the role of diversity in optimization, statistical approaches to combinatorial optimization, computational game theory, and cell mapping techniques for numerical landscape exploration. Applications focus on aspects such as robustness, handling multiple objectives, and complex search spaces in engineering design and computational biology.

We wish our readers interesting insights from this book and inspirations for their own research and work on problem solving.

On behalf of the editors
Michael Emmerich and André Deutz
Conference Logo



EVOLVE – A Bridge between Probability, Set Oriented
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