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Evolutionary Multi-Criterion Optimization

First International Conference, EMO 2001
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Preface

Multi-criterion optimization deals with multiple, often conflicting objectives which naturally arise in a real-world scenario. The field of multiple criteria decision making (MCDM) is well established, investigated by many researchers and scientists, and widely applied in practice. Unlike in single-objective optimization, a multi-criterion optimization problem gives rise to a number of optimal solutions, known as Pareto-optimal solutions, of which none can be said to be better than the others with respect to all objectives. Thus, one of the primary goals in multi-criterion optimization is to find or to approximate the set of Pareto-optimal solutions. Since evolutionary algorithms work with a population of solutions, they have been used in multi-criterion optimization for more than a decade. To date, there exist a number of evolutionary approaches and application case studies, demonstrating the usefulness and efficiency of evolutionary multi-criterion optimization (EMO). Due to the growing interest in EMO, the general chairs envisaged organizing this first-ever international conference covering all aspects of the intersection of evolutionary computation and classical MCDM. The aim was to promote and share research activities in this promising field.

The first international conference on evolutionary multi-criterion optimization (EMO 2001) was held in Zürich at the Swiss Federal Institute of Technology (ETH) on March 7–9, 2001. This event included two keynote speeches, one delivered by Ralph E. Steuer on current state-of-the-art methodology and the other delivered by Ian C. Parmee on real-world applications of evolutionary techniques. Furthermore, two extended tutorials were presented, one on classical multiple criteria decision making methodologies by Kaisa Miettinen and another one on evolutionary algorithms by Carlos A. Coello Coello.

In response to the call for papers, 87 papers from 27 countries were submitted, each of which was independently reviewed by at least three members of the program committee. This volume presents a selection of 45 of the refereed papers, together with contributions based on the invited talks and tutorials.

We would like to express our appreciation to the keynote speakers who accepted our invitation, to the tutorial organizers, to all authors who submitted papers to EMO 2001, and to Marco Laumanns and Monica Fricker for their invaluable help in organizing the conference.

March 2001 Eckart Zitzler, Kalyanmoy Deb, Lothar Thiele,
Carlos A. Coello Coello, and David Corne

Organization

EMO 2001 took place from March 7th to 9th, 2001 at the Swiss Federal Institute of Technology (ETH) Zürich, Switzerland, and was organized in cooperation with ACM/SIGART, IEEE Neural Network Council, and the International Society for Genetic and Evolutionary Computation (ISGEC).

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Table of Contents

Tutorials

Some Methods for Nonlinear Multi-objective Optimization 1
Kaisa Miettinen

A Short Tutorial on Evolutionary Multiobjective Optimization 21
Carlos A. Coello Coello

Invited Talks

An Overview in Graphs of Multiple Objective Programming 41
Ralph E. Steuer

Poor-Definition, Uncertainty and Human Factors – Satisfying Multiple Objectives in Real-World Decision-Making Environments 52
I. C. Parmee

Algorithm Improvements

Controlled Elitist Non-dominated Sorting Genetic Algorithms for Better Convergence 67
Kalyanmoy Deb, Tushar Goel

Specification of Genetic Search Directions in Cellular Multi-objective Genetic Algorithms 82
Tadahiko Murata, Hisao Ishibuchi, Mitsuo Gen

Adapting Weighted Aggregation for Multiobjective Evolution Strategies .. 96
Yaochu Jin, Tatsuya Okabe, Bernhard Sendhoff

Incrementing Multi-objective Evolutionary Algorithms: Performance Studies and Comparisons 111
K. C. Tan, T. H. Lee, E. F. Khor

A Micro-Genetic Algorithm for Multiobjective Optimization 126
Carlos A. Coello Coello, Gregorio Toscano Pulido

Evolutionary Algorithms for Multicriteria Optimization with Selecting a Representative Subset of Pareto Optimal Solutions 141
Andrzej Osyczka, Stanislaw Krenich

Multi-objective Optimisation Based on Relation *Favour* 154
Nicole Drechsler, Rolf Drechsler, Bernd Becker

Performance Assessment and Comparison

Comparison of Evolutionary and Deterministic Multiobjective Algorithms for Dose Optimization in Brachytherapy 167
Natasa Milickovic, Michael Lahanas, Dimos Baltas, Nikolaos Zamboglou

On The Effects of Archiving, Elitism, and Density Based Selection in Evolutionary Multi-objective Optimization 181
Marco Laumanns, Eckart Zitzler, Lothar Thiele

Global Multiobjective Optimization with Evolutionary Algorithms: Selection Mechanisms and Mutation Control 197
Thomas Hanne

Inferential Performance Assessment of Stochastic Optimisers and the Attainment Function 213
Viviane Grunert da Fonseca, Carlos M. Fonseca, Andreia O. Hall

A Statistical Comparison of Multiobjective Evolutionary Algorithms Including the MOMGA-II 226
Jesse B. Zydallis, David A. Van Veldhuizen, Gary B. Lamont

Performance of Multiple Objective Evolutionary Algorithms on Distribution System Design Problem – Computational Experiment 241
Andrzej Jaszkiewicz, Maciej Hapke, Paweł Kominek

Constraint Handling and Problem Decomposition

An Infeasibility Objective for Use in Constrained Pareto Optimization 256
Jonathan Wright, Heather Loosemore

Reducing Local Optima in Single-Objective Problems by Multi-objectivization 269
Joshua D. Knowles, Richard A. Watson, David W. Corne

Constrained Test Problems for Multi-objective Evolutionary Optimization 284
Kalyanmoy Deb, Amrit Pratap, T. Meyarivan

Constraint Method-Based Evolutionary Algorithm (CMEA) for Multiobjective Optimization 299
S. Ranji Ranjithan, S. Kishan Chetan, Harish K. Dakshina

Uncertainty and Noise

Pareto-Front Exploration with Uncertain Objectives 314
Jürgen Teich

Evolutionary Multi-objective Ranking with Uncertainty and Noise 329
Evan J. Hughes

Hybrid and Alternative Methods

Tabu-Based Exploratory Evolutionary Algorithm for Effective Multi-objective Optimization 344
E. F. Khor, K. C. Tan, T. H. Lee

Bi-Criterion Optimization with Multi Colony Ant Algorithms 359
Steffen Iredi, Daniel Merkle, Martin Middendorf

Multicriteria Evolutionary Algorithm with Tabu Search for Task Assignment 373
Jerzy Balicki, Zygmunt Kitowski

A Hybrid Multi-objective Evolutionary Approach to Engineering Shape Design 385
Kalyanmoy Deb, Tushar Goel

Fuzzy Evolutionary Hybrid Metaheuristic for Network Topology Design . . . 400
Habib Youssef, Sadiq M. Sait, Salman A. Khan

A Hybrid Evolutionary Approach for Multicriteria Optimization Problems: Application to the Flow Shop 416
El-Ghazali Talbi, Malek Rahoual, Mohamed Hakim Mabed, Clarisse Dhaenens

The Supported Solutions Used as a Genetic Information in a Population Heuristics 429
Xavier Gandibleux, Hiroyuki Morita, Naoki Katoh

Scheduling

Multi-objective Flow-Shop: Preliminary Results 443
C. Brizuela, N. Sannomiya, Y. Zhao

Pareto-Optimal Solutions for Multi-objective Production Scheduling Problems 458
Tapan P. Bagchi

Comparison of Multiple Objective Genetic Algorithms for Parallel Machine Scheduling Problems 472
W. Matthew Carlyle, Bosun Kim, John W. Fowler, Esma S. Gel

Applications

A Bi-Criterion Approach for the Airlines Crew Rostering Problem 486
Walid El Moudani, Carlos Alberto Nunes Cosenza, Marc de Coligny, Félix Mora-Camino

Halftone Image Generation with Improved Multiobjective Genetic Algorithm 501
Hernán E. Aguirre, Kiyoshi Tanaka, Tatsuo Sugimura, Shinjiro Oshita

Microchannel Optimization Using Multiobjective Evolution Strategies 516
Ivo F. Sbalzarini, Sibylle Müller, Petros Koumoutsakos

Multi-objective Optimisation of Cancer Chemotherapy Using Evolutionary Algorithms 531
Andrei Petrovski, John McCall

Application of Multi Objective Evolutionary Algorithms to Analogue Filter Tuning 546
Mark Thompson

Multiobjective Design Optimization of Real-Life Devices in Electrical Engineering: A Cost-Effective Evolutionary Approach 560
P. Di Barba, M. Farina, A. Savini

Application of Multiobjective Evolutionary Algorithms for Dose Optimization Problems in Brachytherapy 574
Michael Lahanas, Natasa Milickovic, Dimos Baltas, Nikolaos Zamboglou

Multiobjective Optimization in Linguistic Rule Extraction from Numerical Data 588
Hisao Ishibuchi, Tomoharu Nakashima, Tadahiko Murata

Determining the Color-Efficiency Pareto Optimal Surface for Filtered Light Sources 603
Neil H. Eklund, Mark J. Embrechts

Multi-objective Design Space Exploration of Road Trains with Evolutionary Algorithms 612
Nando Laumanns, Marco Laumanns, Dirk Neunzig

Multiobjective Optimization of Mixed Variable Design Problems 624
Johan Andersson, Petter Krus

Aerodynamic Shape Optimization of Supersonic Wings by Adaptive Range Multiobjective Genetic Algorithms 639
Daisuke Sasaki, Masashi Morikawa, Shigeru Obayashi, Kazuhiro Nakahashi

Accurate, Transparent, and Compact Fuzzy Models for Function Approximation and Dynamic Modeling through Multi-objective Evolutionary Optimization 653
Fernando Jiménez, Antonio F. Gómez-Skarmeta, Hans Roubos, Robert Babuška

Multi-objective Evolutionary Design of Fuzzy Autopilot Controller 668
Anna L. Blumel, Evan J. Hughes, Brian A. White

The Niched Pareto Genetic Algorithm 2 Applied to the Design of Groundwater Remediation Systems 681
Mark Erickson, Alex Mayer, Jeffrey Horn

MOLeCS: Using Multiobjective Evolutionary Algorithms for Learning 696
Ester Bernadó i Mansilla, Josep M. Garrell i Guiu

Author Index **711**