Contents

Evolutionary Optimisation

Maximum Likelihood Estimation Based on Random Subspace EDA: Application to Extrasolar Planet Detection ........................................... 3
Bin Liu and Ke-Jia Chen

Evolutionary Game Network Reconstruction by Memetic Algorithm with $l_{1/2}$ Regularization ........................................... 15
Kai Wu and Jing Liu

A Simple Brain Storm Optimization Algorithm via Visualizing Confidence Intervals ........................................... 27
YingYing Cao, Wei Chen, Shi Cheng, Yifei Sun, Qunfeng Liu, Yun Li, and Yuhui Shi

Simulated Annealing with a Time-Slot Heuristic for Ready-Mix Concrete Delivery ........................................... 39
Muhammad Sulaman, Xinye Cai, Mustafa Misir, and Zhun Fan

A Sequential Learnable Evolutionary Algorithm with a Novel Knowledge Base Generation Method ........................................... 51
Yang Lou and Shiu Yin Yuen

Using Parallel Strategies to Speed up Pareto Local Search ........................................... 62
Jialong Shi, Qingfu Zhang, Bilel Derbel, Arnaud Liefooghe, and Sébastien Verel

Differential Evolution Based Hyper-heuristic for the Flexible Job-Shop Scheduling Problem with Fuzzy Processing Time ........................................... 75
Jian Lin, Dike Luo, Xiaodong Li, Kaizhou Gao, and Yanan Liu

ACO-iRBA: A Hybrid Approach to TSPN with Overlapping Neighborhoods ........................................... 87
Yuanlong Qin and Bo Yuan

An Evolutionary Algorithm with a New Coding Scheme for Multi-objective Portfolio Optimization ........................................... 97
Yi Chen, Aimin Zhou, Rongfang Zhou, Peng He, Yong Zhao, and Lihua Dong

Exact Approaches for the Travelling Thief Problem ........................................... 110
Junhua Wu, Markus Wagner, Sergey Polyakovskiy, and Frank Neumann
On the Use of Dynamic Reference Points in HypE
Jingda Deng, Qingfu Zhang, and Hui Li

Multi-Factorial Evolutionary Algorithm Based on M2M Decomposition
Jiajie Mo, Zhun Fan, Wenji Li, Yi Fang, Yugen You, and Xinye Cai

An Efficient Local Search Algorithm for Minimum Weighted Vertex Cover on Massive Graphs
Yuanjie Li, Shaowei Cai, and Wenyong Hou

Interactive Genetic Algorithm with Group Intelligence Articulated Possibilistic Condition Preference Model
Xiaoyan Sun, Lixia Zhu, Lin Bao, Lian Liu, and Xin Nie

GP-Based Approach to Comprehensive Quality-Aware Automated Semantic Web Service Composition
Chen Wang, Hui Ma, Aaron Chen, and Sven Hartmann

Matrix Factorization Based Benchmark Set Analysis: A Case Study on HyFlex
Mustafa Misir

Learning to Describe Collective Search Behavior of Evolutionary Algorithms in Solution Space
Lei Liu, Chengshan Pang, Weiming Liu, and Bin Li

Evolutionary Multiobjective Optimisation

A Hierarchical Decomposition-Based Evolutionary Many-Objective Algorithm
Fangqing Gu and Hai-Lin Liu

Adjusting Parallel Coordinates for Investigating Multi-objective Search
Liangli Zhen, Miqing Li, Ran Cheng, Dezhong Peng, and Xin Yao

An Elite Archive-Based MOEA/D Algorithm
Qingling Zhu, Qiu Zhen Lin, and Jianyong Chen

A Constraint Partitioning Method Based on Minimax Strategy for Constrained Multiobjective Optimization Problems
Xueqiang Li, Shen Fu, and Han Huang

A Fast Objective Reduction Algorithm Based on Dominance Structure for Many Objective Optimization
Fangqing Gu, Hai-Lin Liu, and Yiu-Ming Cheung
A Memetic Algorithm Based on Decomposition and Extended Search for Multi-Objective Capacitated Arc Routing Problem
Ronghua Shang, Yijing Yuan, Bingqi Du, and Licheng Jiao

Improvement of Reference Points for Decomposition Based Multi-objective Evolutionary Algorithms
Hemant Kumar Singh and Xin Yao

Multi-Objective Evolutionary Optimization for Autonomous Intersection Management
Kazi Shah Nawaz Ripon, Jostein Solaas, and Håkon Dissen

Study of an Adaptive Control of Aggregate Functions in MOEA/D
Shinya Watanabe and Takanori Sato

Use of Inverted Triangular Weight Vectors in Decomposition-Based Many-Objective Algorithms
Ken Doi, Ryo Imada, Yusuke Nojima, and Hisao Ishibuchi

Surrogate Model Assisted Multi-objective Differential Evolution Algorithm for Performance Optimization at Software Architecture Level*
Du Xin, Ni Youcong, Wu Xiaobin, Ye Peng, and Xin Yao

Normalized Ranking Based Particle Swarm Optimizer for Many Objective Optimization
Shi Cheng, Xiujuan Lei, Junfeng Chen, Jiqiang Feng, and Yuhui Shi

Evolutionary Machine Learning
A Study on Pre-training Deep Neural Networks Using Particle Swarm Optimisation
Angus Kenny and Xiaodong Li

Simple Linkage Identification Using Genetic Clustering
Kei Ohnishi and Chang Wook Ahn

Learning of Sparse Fuzzy Cognitive Maps Using Evolutionary Algorithm with Lasso Initialization
Kai Wu and Jing Liu

A Bayesian Restarting Approach to Algorithm Selection
Yaodong He, Shiu Yin Yuen, and Yang Lou

Evolutionary Learning Based Iterated Local Search for Google Machine Reassignment Problems
Ayad Turky, Nasser R. Sabar, Abdul Sattar, and Andy Song
Qi Chen, Mengjie Zhang, and Bing Xue

Constrained Dimensionally Aware Genetic Programming for Evolving Interpretable Dispatching Rules in Dynamic Job Shop Scheduling.  
Yi Mei, Su Nguyen, and Mengjie Zhang

Visualisation and Optimisation of Learning Classifier Systems for Multiple Domain Learning  
Yi Liu, Bing Xue, and Will N. Browne

Adaptive Memetic Algorithm Based Evolutionary Multi-tasking Single-Objective Optimization  
Qunjian Chen, Xiaoliang Ma, Yiwen Sun, and Zexuan Zhu

Effective Policy Gradient Search for Reinforcement Learning Through NEAT Based Feature Extraction  
Yiming Peng, Gang Chen, Mengjie Zhang, and Yi Mei

Generalized Hybrid Evolutionary Algorithm Framework with a Mutation Operator Requiring no Adaptation  
Yong Wee Foo, Cindy Goh, Lipton Chan, Lin Li, and Yun Li

A Multitree Genetic Programming Representation for Automatically Evolving Texture Image Descriptors  
Harith Al-Sahaf, Bing Xue, and Mengjie Zhang

Theoretical Developments

Running-Time Analysis of Particle Swarm Optimization with a Single Particle Based on Average Gain  
Wu Hongyue, Huang Han, Yang Shuling, and Zhang Yushan

Evolutionary Computation Theory for Remote Sensing Image Clustering: A Survey  
Yuting Wan, Yanfei Zhong, Ailong Ma, and Liangpei Zhang

Feature Selection and Dimensionality Reduction

New Representations in Genetic Programming for Feature Construction in k-Means Clustering  
Andrew Lensen, Bing Xue, and Mengjie Zhang

Transductive Transfer Learning in Genetic Programming for Document Classification  
Wenlong Fu, Bing Xue, Mengjie Zhang, and Xiaoying Gao
Automatic Feature Construction for Network Intrusion Detection . . . . . . . . . . 569
   Binh Tran, Stjepan Picek, and Bing Xue

A Feature Subset Evaluation Method Based
on Multi-objective Optimization . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 581
   Mengmeng Li, Zhigang Shang, and Caitong Yue

A Hybrid GA-GP Method for Feature Reduction in Classification . . . . . . . . 591
   Hoai Bach Nguyen, Bing Xue, and Peter Andreae

Kernel Construction and Feature Subset Selection in Support
Vector Machines . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 605
   Shinichi Yamada and Kourosh Neshatian

KW-Race and Fast KW-Race: Racing-Based Frameworks for Tuning
Parameters of Evolutionary Algorithms on Black-Box
Optimization Problems . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 617
   Mang Wang, Xin Tong, and Bin Li

Dynamic and Uncertain Environments

A Probabilistic Learning Algorithm for the Shortest Path Problem . . . . . . 631
   Yiya Diao, Changhe Li, Yebin Ma, Junchen Wang, and Xingang Zhou

A First-Order Difference Model-Based Evolutionary Dynamic
Multiobjective Optimization . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 644
   Leilei Cao, Lihong Xu, Erik D. Goodman, and Hui Li

A Construction Graph-Based Evolutionary Algorithm for Traveling
Salesman Problem . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 656
   Gang Li, Zhi feng Hao, Hang Wei, and Han Huang

Real-world Applications

Bi-objective Water Cycle Algorithm for Solving Remanufacturing
Rescheduling Problem . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 671
   Kaizhou Gao, Pelyong Duan, Rong Su, and Junqing Li

A New Method for Constructing Ensemble Classifier in Privacy-Preserving
Distributed Environment . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 684
   Yan Shao, Zhanjun Li, and Ming Li

Greedy Based Pareto Local Search for Bi-objective Robust Airport Gate
Assignment Problem . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 694
   Wenxue Sun, Xinye Cai, Chao Xia, Muhammad Sulaman, Mustafa Misir,
   and Zhun Fan
Multi-neighbourhood Great Deluge for Google Machine Reassignment Problem ................................................................. 706
   Ayad Turky, Nasser R. Sabar, Abdul Sattar, and Andy Song

Evolutionary Optimization of Airport Security Inspection Allocation .............. 716
   Zheng-Jie Fan and Yu-Jun Zheng

Evolving Directional Changes Trading Strategies with a New Event-Based Indicator ................................................................. 727
   Michael Kampouridis, Adesola Adegboye, and Colin Johnson

Constrained Differential Evolution for Cost and Energy Efficiency Optimization in 5G Wireless Networks ......................................................... 739
   Rawaa Dawoud AL-Dabbagh and Ahmed Jasim Jabur

Evolutionary Computation to Determine Product Builds in Open Pit Mining ................................................................. 751
   Adam Ghandar

An Evolutionary Vulnerability Detection Method for HFSWR Ship Tracking Algorithm ................................................................. 763
   Pengju Zhang, Kun Wang, Ling Zhang, Zexiao Xie, and Liqin Zhou

Genetic Programming for Lifetime Maximization in Wireless Sensor Networks with a Mobile Sink ................................................................. 774
   Ying Li, Zhixing Huang, Jinghui Zhong, and Liang Feng

Unsupervised Change Detection for Remote Sensing Images Based on Principal Component Analysis and Differential Evolution ................................. 786
   Mi Song, Yanfei Zhong, Ailong Ma, and Liangpei Zhang

Parallel Particle Swarm Optimization for Community Detection in Large-Scale Networks ................................................................. 797
   Shanfeng Wang, Maoguo Gong, Yue Wu, and Xiaolei Qin

Multi-objective Memetic Algorithm Based on Three-Dimensional Request Prediction for Dynamic Pickup-and-Delivery Problem with Time Windows ................................................................. 810
   Yanming Yang, Xiaoliang Ma, Yiwren Sun, and Zexuan Zhu

Optimization of Spectrum-Energy Efficiency in Heterogeneous Communication Network ................................................................. 821
   Fangqing Gu, Ziquan Liu, Yiu-ming Cheung, and Hai-Lin Liu

Large Scale WSN Deployment Based on an Improved Cooperative Co-evolution PSO with Global Differential Grouping ................................................................. 833
   Yazhen Zhang and Wei Fang
Adaptive Systems

Learning Fuzzy Cognitive Maps Using a Genetic Algorithm with Decision-Making Trial and Evaluation ........................................ 845

Xumiao Zou and Jing Liu

Dynamic and Adaptive Threshold for DNN Compression from Scratch .... 858

Chunhui Jiang, Guiying Li, and Chao Qian

Cooperative Design of Two Level Fuzzy Logic Controllers for Medium Access Control in Wireless Body Area Networks ...................... 870

Seyed Mohammad Nekooei, Gang Chen, and Ramesh Rayudu

Statistical Analysis of Social Coding in GitHub Hypernetwork ............. 883

Li Kuang, Feng Wang, Heng Zhang, and Yuanxiang Li

Swarm Intelligence

Sparse Restricted Boltzmann Machine Based on Multiobjective Optimization .................................................. 899

Yangyang Li, Xiaoyu Bai, Xiaoxu Liang, and Licheng Jiao

A Knee Point Driven Particle Swarm Optimization Algorithm for Sparse Reconstruction ................................................... 911

Caitong Yue, Jing Liang, Boyang Qu, Hui Song, Guang Li, and Yuhong Han

Multivariant Optimization Algorithm with Bimodal-Gauss .................. 920

Baolei Li, Jing Liang, Caitong Yue, and Boyang Qu

Enhanced Comprehensive Learning Particle Swarm Optimization with Exemplar Evolution .................................................. 929

Xiang Yu, Yunan Liu, Xiangsheng Feng, and Genhua Chen

Recommending PSO Variants Using Meta-Learning Framework for Global Optimization .................................................. 939

Xianghua Chu, Fulin Cai, Jiansheng Chen, and Li Li

Augmented Brain Storm Optimization with Mutation Strategies ............ 949

Xianghua Chu, Jiansheng Chen, Fulin Cai, Chen Chen, and Ben Niu

A New Precedence-Based Ant Colony Optimization for Permutation Problems .................................................. 960

Marco Baioletti, Alfredo Milani, and Valentino Santucci

A General Swarm Intelligence Model for Continuous Function Optimization .................................................. 972

Satoru Iwasaki, Heng Xiao, Toshiharu Hatanaka, and Takeshi Uchitane
A Hybrid Particle Swarm Optimization for High-Dimensional Dynamic Optimization .................................................. 981
   Wenjian Luo, Bin Yang, Chenyang Bu, and Xin Lin

Visualizing the Search Dynamics in a High-Dimensional Space for a Particle Swarm Optimizer ........................................ 994
   Qiqi Duan, Chang Shao, Xiaodong Li, and Yuhui Shi

Particle Swarm Optimization with Winning Score Assignment for Multi-objective Portfolio Optimization .................................. 1003
   Karoon Suksonghong and Kittipong Boonlong

Conservatism and Adventurism in Particle Swarm Optimization Algorithm ............................................................ 1016
   Guangzhi Xu, Rui Li, Xinchao Zhao, and Xingquan Zuo

A Competitive Social Spider Optimization with Learning Strategy for PID Controller Optimization .................................. 1026
   Zhaolin Lai, Xiang Feng, and Huiqun Yu

Author Index ................................................................................................................. 1039
Simulated Evolution and Learning
11th International Conference, SEAL 2017, Shenzhen, China, November 10-13, 2017, Proceedings
2017, XXII, 1041 p. 317 illus., Softcover
ISBN: 978-3-319-68758-2