

Contents – Part II

EvoNUM

| | |
|---|----|
| Local Fitness Meta-Models with Nearest Neighbor Regression | 3 |
| <i>Oliver Kramer</i> | |
| Validating the Grid Diversity Operator: An Infusion Technique for Diversity Maintenance in Population-Based Optimisation Algorithms. | 11 |
| <i>Ahmed Salah, Emma Hart, and Kevin Sim</i> | |
| Benchmarking Languages for Evolutionary Algorithms | 27 |
| <i>J.J. Merelo, Pedro Castillo, Israel Blancas, Gustavo Romero, Pablo García-Sánchez, Antonio Fernández-Ares, Víctor Rivas, and Mario García-Valdez</i> | |
| On the Closest Averaged Hausdorff Archive for a Circularly Convex Pareto Front. | 42 |
| <i>Günter Rudolph, Oliver Schütze, and Heike Trautmann</i> | |
| Evolving Smoothing Kernels for Global Optimization | 56 |
| <i>Paul Manns and Kay Hamacher</i> | |

EvoPAR

| | |
|--|-----|
| Implementing Parallel Differential Evolution on Spark. | 75 |
| <i>Diego Teijeiro, Xoán C. Pardo, Patricia González, Julio R. Banga, and Ramón Doallo</i> | |
| ECJ+HADOOP: An Easy Way to Deploy Massive Runs of Evolutionary Algorithms. | 91 |
| <i>Francisco Chávez, Francisco Fernández, César Benavides, Daniel Lanza, Juan Villegas, Leonardo Trujillo, Gustavo Olague, and Graciela Román</i> | |
| Addressing High Dimensional Multi-objective Optimization Problems by Coevolutionary Islands with Overlapping Search Spaces | 107 |
| <i>Pablo García-Sánchez, Julio Ortega, Jesús González, Pedro A. Castillo, and Juan J. Merelo</i> | |
| Compilable Phenotypes: Speeding-Up the Evaluation of Glucose Models in Grammatical Evolution | 118 |
| <i>J. Manuel Colmenar, J. Ignacio Hidalgo, Juan Lanchares, Oscar Garnica, Jose-L. Risco, Iván Contreras, Almudena Sánchez, and J. Manuel Velasco</i> | |

| | |
|---|-----|
| GPU Accelerated Molecular Docking Simulation with Genetic Algorithms. . . | 134 |
| <i>Serkan Altuntaş, Zeki Bozkus, and Basilio B. Fraguera</i> | |

EvoRISK

| | |
|---|-----|
| Challenging Anti-virus Through Evolutionary Malware Obfuscation | 149 |
| <i>Marco Gaudesi, Andrea Marcelli, Ernesto Sanchez, Giovanni Squillero, and Alberto Tonda</i> | |

EvoROBOT

| | |
|---|-----|
| Leveraging Online Racing and Population Cloning in Evolutionary Multirobot Systems | 165 |
| <i>Fernando Silva, Luís Correia, and Anders Lyhne Christensen</i> | |
| Multi-agent Behavior-Based Policy Transfer | 181 |
| <i>Sabre Didi and Geoff Nitschke</i> | |
| On-line Evolution of Foraging Behaviour in a Population of Real Robots . . . | 198 |
| <i>Jacqueline Heinerman, Alessandro Zonta, Evert Haasdijk, and A.E. Eiben</i> | |
| Hybrid Control for a Real Swarm Robotics System in an Intruder Detection Task | 213 |
| <i>Miguel Duarte, Jorge Gomes, Vasco Costa, Sancho Moura Oliveira, and Anders Lyhne Christensen</i> | |

EvoSTOC

| | |
|---|-----|
| Direct Memory Schemes for Population-Based Incremental Learning in Cyclically Changing Environments | 233 |
| <i>Michalis Mavrovouniotis and Shengxiang Yang</i> | |
| Simheuristics for the Multiobjective Nondeterministic Firefighter Problem in a Time-Constrained Setting. | 248 |
| <i>Krzysztof Michalak and Joshua D. Knowles</i> | |
| Benchmarking Dynamic Three-Dimensional Bin Packing Problems Using Discrete-Event Simulation. | 266 |
| <i>Ran Wang, Trung Thanh Nguyen, Shayan Kavakeb, Zaili Yang, and Changhe Li</i> | |
| Genetic Programming Algorithms for Dynamic Environments. | 280 |
| <i>João Macedo, Ernesto Costa, and Lino Marques</i> | |
| A Memory-Based NSGA-II Algorithm for Dynamic Multi-objective Optimization Problems. | 296 |
| <i>Shaaban Sahmoud and Haluk Rahmi Topcuoglu</i> | |

| | |
|---|-----|
| Hybrid Dynamic Resampling Algorithms for Evolutionary Multi-objective Optimization of Invariant-Noise Problems | 311 |
| <i>Florian Siegmund, Amos H.C. Ng, and Kalyanmoy Deb</i> | |
| Author Index | 327 |

Contents – Part I

EvoBAFIN

| | |
|--|----|
| Enhanced Multiobjective Population-Based Incremental Learning with Applications in Risk Treaty Optimization | 3 |
| <i>Omar Andres Carmona Cortes and Andrew Rau-Chaplin</i> | |
| Genetic Programming with Memory For Financial Trading. | 19 |
| <i>Alexandros Agapitos, Anthony Brabazon, and Michael O'Neill</i> | |
| Improving Fitness Functions in Genetic Programming for Classification on Unbalanced Credit Card Data. | 35 |
| <i>Van Loi Cao, Nhien-An Le-Khac, Michael O'Neill, Miguel Nicolau, and James McDermott</i> | |
| Evolving Classification Models for Prediction of Patient Recruitment in Multicentre Clinical Trials Using Grammatical Evolution | 46 |
| <i>Gilyana Borlikova, Michael Phillips, Louis Smith, and Michael O'Neill</i> | |
| Portfolio Optimization, a Decision-Support Methodology for Small Budgets | 58 |
| <i>Igor Deplano, Giovanni Squillero, and Alberto Tonda</i> | |
| Evolutionary Multiobjective Optimization for Portfolios in Emerging Markets: Contrasting Higher Moments and Median Models | 73 |
| <i>Mai A. Ibrahim, Mohammed El-Beltagy, and Motaz Khorshid</i> | |

EvoBIO

| | |
|---|-----|
| On Combinatorial Optimisation in Analysis of Protein-Protein Interaction and Protein Folding Networks | 91 |
| <i>David Chalupa</i> | |
| A Multi-objective Genetic Programming Biomarker Detection Approach in Mass Spectrometry Data. | 106 |
| <i>Soha Ahmed, Mengjie Zhang, Lifeng Peng, and Bing Xue</i> | |
| Automating Biomedical Data Science Through Tree-Based Pipeline Optimization. | 123 |
| <i>Randal S. Olson, Ryan J. Urbanowicz, Peter C. Andrews, Nicole A. Lavender, La Creis Kidd, and Jason H. Moore</i> | |

| | |
|---|-----|
| Bicliques in Graphs with Correlated Edges: From Artificial to Biological Networks | 138 |
| <i>Aaron Kershenbaum, Alicia Cutillo, Christian Darabos, Keitha Murray, Robert Schiaffino, and Jason H. Moore</i> | |
| Hybrid Biclustering Algorithms for Data Mining. | 156 |
| <i>Patryk Orzechowski and Krzysztof Boryczko</i> | |
| Discovering Potential Clinical Profiles of Multiple Sclerosis from Clinical and Pathological Free Text Data with Constrained Non-negative Matrix Factorization. | 169 |
| <i>Jacopo Acquarelli, The Netherlands Brain Bank, Monica Bianchini, and Elena Marchiori</i> | |
| Application of Evolutionary Algorithms for the Optimization of Genetic Regulatory Networks. | 184 |
| <i>Elise Rosati, Morgan Madec, Abir Rezgui, Quentin Colman, Nicolas Toussaint, Christophe Lallement, and Pierre Collet</i> | |
| EvoCOMNET | |
| A Hybrid Discrete Artificial Bee Colony Algorithm for the Multicast Routing Problem. | 203 |
| <i>Yannis Marinakis, Magdalene Marinaki, and Athanasios Migdalis</i> | |
| Evolving Coverage Optimisation Functions for Heterogeneous Networks Using Grammatical Genetic Programming | 219 |
| <i>Michael Fenton, David Lynch, Stepan Kucera, Holger Claussen, and Michael O'Neill</i> | |
| Joint Topology Optimization, Power Control and Spectrum Allocation for Intra-Vehicular Multi-hop Sensor Networks Using Dandelion-Encoded Heuristics. | 235 |
| <i>Javier Del Ser, Miren Nekane Bilbao, Cristina Perfecto, Antonio Gonzalez-Pardo, and Sergio Campos-Cordobes</i> | |
| A Heuristic Crossover Enhanced Evolutionary Algorithm for Clustering Wireless Sensor Network | 251 |
| <i>Muyiwa Olakanmi Oladimeji, Mikdam Turkey, and Sandra Dudley</i> | |
| A Variable Local Search Based Memetic Algorithm for the Load Balancing Problem in Cloud Computing | 267 |
| <i>Nasser R. Sabar, Andy Song, and Mengjie Zhang</i> | |
| An (MI)LP-Based Primal Heuristic for 3-Architecture Connected Facility Location in Urban Access Network Design | 283 |
| <i>Fabio D'Andreagiovanni, Fabian Mett, and Jonad Pulaj</i> | |

| | |
|--|-----|
| Reducing Efficiency of Connectivity-Splitting Attack on Newscast via Limited Gossip | 299 |
| <i>Jakub Muszyński, Sébastien Varrette, and Pascal Bouvry</i> | |

| | |
|--|-----|
| A Distributed Intrusion Detection Framework Based on Evolved Specialized Ensembles of Classifiers | 315 |
| <i>Gianluigi Folino, Francesco Sergio Pisani, and Pietro Sabatino</i> | |

| | |
|---|-----|
| UAV Fleet Mobility Model with Multiple Pheromones for Tracking Moving Observation Targets. | 332 |
| <i>Christophe Atten, Loubna Channouf, Grégoire Danoy, and Pascal Bouvry</i> | |

EvoCOMPLEX

| | |
|---|-----|
| Towards Intelligent Biological Control: Controlling Boolean Networks with Boolean Networks | 351 |
| <i>Nadia S. Taou, David W. Corne, and Michael A. Lones</i> | |

| | |
|--|-----|
| The Emergence of Cooperation in Public Goods Games on Randomly Growing Dynamic Networks | 363 |
| <i>Steve Miller and Joshua Knowles</i> | |

| | |
|---|-----|
| Influence Maximization in Social Networks with Genetic Algorithms | 379 |
| <i>Doina Bucur and Giovanni Iacca</i> | |

| | |
|--|-----|
| Measuring Diversity of Socio-Cognitively Inspired ACO Search | 393 |
| <i>Ewelina Świdarska, Jakub Łasisz, Aleksander Byrski, Tom Lenaerts, Dana Samson, Bipin Indurkha, Ann Nowé, and Marek Kisiel-Dorohinicki</i> | |

| | |
|---|-----|
| Multiwinner Voting in Genetic Algorithms for Solving Ill-Posed Global Optimization Problems. | 409 |
| <i>Piotr Faliszewski, Jakub Sawicki, Robert Schaefer, and Maciej Smółka</i> | |

EvoENERGY

| | |
|---|-----|
| A Decentralized PSO with Decoder for Scheduling Distributed Electricity Generation | 427 |
| <i>Jörg Bremer and Sebastian Lehnhoff</i> | |

| | |
|--|-----|
| Comparison of Multi-objective Evolutionary Optimization in Smart Building Scenarios | 443 |
| <i>Marlon Braun, Thomas Dengiz, Ingo Mauser, and Hartmut Schmeck</i> | |

| | |
|---|-----|
| A Hybrid Genetic Algorithm for the Interaction of Electricity Retailers with Demand Response | 459 |
| <i>Maria João Alves, Carlos Henggeler Antunes, and Pedro Carrasqueira</i> | |
| Stigmergy-Based Scheduling of Flexible Loads. | 475 |
| <i>Fredy H. Rios S., Lukas König, and Hartmut Schmeck</i> | |
| Electrical Load Pattern Shape Clustering Using Ant Colony Optimization . . . | 491 |
| <i>Fernando Lezama, Ansel Y. Rodríguez, Enrique Muñoz de Cote, and Luis Enrique Sucar</i> | |
| Optimization of Operation and Control Strategies for Battery Energy Storage Systems by Evolutionary Algorithms | 507 |
| <i>Jan Müller, Matthias März, Ingo Mauser, and Hartmut Schmeck</i> | |
| EvoGAMES | |
| Orthogonally Evolved AI to Improve Difficulty Adjustment in Video Games | 525 |
| <i>Arend Hintze, Randal S. Olson, and Joel Lehman</i> | |
| There Can Be only One: Evolving RTS Bots via Joust Selection | 541 |
| <i>A. Fernández-Ares, P. García-Sánchez, A.M. Mora, P.A. Castillo, and J.J. Merelo</i> | |
| Constrained Level Generation Through Grammar-Based Evolutionary Algorithms | 558 |
| <i>Jose M. Font, Roberto Izquierdo, Daniel Manrique, and Julian Togelius</i> | |
| Evolving Chess-like Games Using Relative Algorithm Performance Profiles . . . | 574 |
| <i>Jakub Kowalski and Marek Szykula</i> | |
| Online Evolution for Multi-action Adversarial Games | 590 |
| <i>Niels Justesen, Tobias Mahlmann, and Julian Togelius</i> | |
| The Story of Their Lives: Massive Procedural Generation of Heroes’ Journeys Using Evolved Agent-Based Models and Logical Reasoning | 604 |
| <i>Rubén H. García-Ortega, Pablo García-Sánchez, Juan J. Merelo, Aránzazu San-Ginés, and Ángel Fernández-Cabezas</i> | |
| Dangerousness Metric for Gene Regulated Car Driving | 620 |
| <i>Sylvain Cussat-Blanc, Jean Disset, and Stéphane Sanchez</i> | |
| Using Isovists to Evolve Terrains with Gameplay Elements | 636 |
| <i>Andrew Pech, Chiou-Peng Lam, Philip Hingston, and Martin Masek</i> | |

| | |
|--|-----|
| A Spatially-Structured PCG Method for Content Diversity in a Physics-Based Simulation Game. | 653 |
| <i>Raúl Lara-Cabrera, Alejandro Gutierrez-Alcoba, and Antonio J. Fernández-Leiva</i> | |

| | |
|--|-----|
| Design and Evaluation of an Extended Learning Classifier-Based StarCraft Micro AI | 669 |
| <i>Stefan Rudolph, Sebastian von Mammen, Johannes Jungbluth, and Jörg Hähner</i> | |

EvoIASP

| | |
|--|-----|
| A Wrapper Feature Selection Approach to Classification with Missing Data . . . | 685 |
| <i>Cao Truong Tran, Mengjie Zhang, Peter Andreae, and Bing Xue</i> | |

| | |
|---|-----|
| Bare-Bone Particle Swarm Optimisation for Simultaneously Discretising and Selecting Features for High-Dimensional Classification | 701 |
| <i>Binh Tran, Bing Xue, and Mengjie Zhang</i> | |

| | |
|---|-----|
| Mutual Information Estimation for Filter Based Feature Selection Using Particle Swarm Optimization | 719 |
| <i>Hoai Bach Nguyen, Bing Xue, and Peter Andreae</i> | |

| | |
|--|-----|
| Speaker Verification on Unbalanced Data with Genetic Programming | 737 |
| <i>Róisín Loughran, Alexandros Agapitos, Ahmed Kattan, Anthony Brabazon, and Michael O'Neill</i> | |

| | |
|---|-----|
| Binary Tomography Reconstruction by Particle Aggregation. | 754 |
| <i>Mohammad Majid al-Rifaie and Tim Blackwell</i> | |

| | |
|--|-----|
| Population Based Ant Colony Optimization for Reconstructing ECG Signals | 770 |
| <i>Yih-Chun Cheng, Tom Hartmann, Pei-Yun Tsai, and Martin Middendorf</i> | |

EvoINDUSTRY

| | |
|--|-----|
| Can Evolutionary Algorithms Beat Dynamic Programming for Hybrid Car Control?. | 789 |
| <i>Tobias Rodemann and Ken Nishikawa</i> | |

| | |
|--|-----|
| NSGA-II Based Auto-Calibration of Automatic Number Plate Recognition Camera for Vehicle Speed Measurement | 803 |
| <i>Patryk Filipiak, Bartłomiej Golenko, and Cezary Dolega</i> | |

Environment-Model Based Testing with Differential Evolution in an Industrial Setting. 819
Annamária Szenkovits, Noémi Gaskó, and Erwan Jahier

Workforce Scheduling in Inbound Customer Call Centres with a Case Study. 831
Goran Molnar, Domagoj Jakobović, and Matija Pavelić

Author Index 847

Applications of Evolutionary Computation
19th European Conference, EvoApplications 2016,
Porto, Portugal, March 30 -- April 1, 2016, Proceedings,
Part II
Squillero, G.; Burelli, P. (Eds.)
2016, XXVI, 329 p. 94 illus., Softcover
ISBN: 978-3-319-31152-4