

Papers Nominated for Best Paper Awards

In 2002, ISGEC created a best paper award for GECCO. As part of the double blind peer review, the reviewers were asked to nominate papers for best paper awards. We continue the tradition this year. The Track Chairs, Editor in Chief, and the Conference Chair nominated the papers that received the most nominations and/or the highest evaluation scores for consideration by the conference. The winners are chosen by secret ballot of the GECCO attendees after the papers have been orally presented at the conference. Best Paper winners are posted on the conference website. The titles and authors of all papers nominated as well as the page numbers where to find them in the Proceedings are given below:

Ant Colony Optimization and Swarm Intelligence

Parallel Shared Memory Strategies for Ant-Based Optimization Algorithms

Thang N Bui (*Penn State Harrisburg*),
ThanhVu Nguyen (*University of New Mexico*),
Joseph R Rizzo Jr. (*Concurrent Technologies Corporation*)

An Evaporation Mechanism for Dynamic and Noisy Multimodal Optimization

Jose Luis Fernandez-Marquez (*IIIA-CSIC*),
Josep Lluís Arcos (*IIIA-CSIC*)

Particle Swarm Optimization Based Multi-Prototype Ensembles

Ammar Mohemmed (*Victoria University of Wellington*),
Mark Johnston (*Victoria University of Wellington*),
Mengjie Zhang (*Victoria University of Wellington*)

Artificial Life, Evolutionary Robotics, Adaptive Behavior, Evolvable Hardware

Sustaining Diversity using Behavioral Information Distance

Faustino J Gomez (*IDSIA*)

Evolution of Robust Data Distribution Among Digital Organisms

David B. Knoester (*Michigan State University*),
Andres J. Ramirez (*Michigan State University*),
Philip K. McKinley (*Michigan State University*),
Betty H.C. Cheng (*Michigan State University*)

How Novelty Search Escapes the Deceptive Trap of Learning to Learn

Sebastian Risi (*University of Central Florida*),
Sandy D Vanderbleek (*University of Central Florida*),
Charles E Hughes (*University of Central Florida*),
Kenneth O Stanley (*University of Central Florida*)

Bioinformatics and Computational Biology

Learning Regulation Functions of Metabolic Systems by Artificial Neural Networks

Alberto Castellini (*University of Verona*),
Vincenzo Manca (*University of Verona*)

Modeling Evolutionary Fitness for DNA Motif Discovery

Sven Rahmann (*TU Dortmund*),
Tobias Marschall (*TU Dortmund*),
Frank Behler (*TU Dortmund*),
Oliver Kramer (*TU Dortmund*)

Combinatorial Optimization and Metaheuristics

Exploiting Hierarchical Clustering for Finding Bounded Diameter Minimum Spanning Trees on Euclidean Instances

Martin Gruber (*Vienna University of Technology*),
Günther R. Raidl (*Vienna University of Technology*)

Fixed-Parameter Evolutionary Algorithms and the Vertex Cover Problem

Stefan Kratsch (*Max-Planck-Institute for Computer Science*),
Frank Neumann (*Max-Planck-Institut für Computer Science*)

Estimation of Distribution Algorithms

Difficulty of Linkage Learning in Estimation of Distribution Algorithms

Si-Cheng Chen (*National Taiwan University*),
Tian-Li Yu (*National Taiwan University*)

EDA-RL: Estimation of Distribution Algorithms for Reinforcement Learning Problems

Hisashi Handa (*Okayama University*)

Why One Must Use Reweighting in Estimation of Distribution Algorithms

Fabien Teytaud (*TAO (Inria), Lri, Cnrs UMR 8623, u. Paris-Sud, France*),
Olivier Teytaud (*TAO (Inria), Lri, Cnrs UMR 8623, u. Paris-Sud, France*)

Approximating the Search Distribution to the Selection Distribution in EDAs

S. Ivvan Valdez-Peña (*Center for Research in Mathematics*),
Arturo Hernández-Aguirre (*Center for Research in Mathematics*),
Salvador Botello-Rionda (*Center for Research in Mathematics*)

Papers Nominated for Best Paper Awards (Continued)

Evolution Strategies and Evolutionary Programming

On the Behaviour of Weighted Multi-Recombination Evolution Strategies Optimising Noisy Cigar Functions

Dirk V. Arnold (*Dalhousie University*),
Hans-Georg Beyer (*Vorarlberg University of Applied Sciences*),
Alexander Melkozerov (*Vorarlberg University of Applied Sciences*)

On Strategy Parameter Control by Meta-ES

Hans-Georg Beyer (*Vorarlberg University of Applied Sciences*),
Martin Dobler (*Vorarlberg University of Applied Sciences*),
Christian Hämmerle (*Vorarlberg University of Applied Sciences*),
Philip Masser (*Vorarlberg University of Applied Sciences*)

Cooperative Micro-Differential Evolution for High-Dimensional Problems

Konstantinos E. Parsopoulos (*University of Patras*)

Efficient Natural Evolution Strategies

Yi Sun (*IDSIA*),
Daan Wierstra (*IDSIA*),
Tom Schaul (*IDSIA*),
Juergen Schmidhuber (*IDSIA*)

Evolutionary Multiobjective Optimization

Space Partitioning with Adaptive epsilon-Ranking and Substitute Distance Assignments: A Comparative Study on Many-Objective MNK-Landscapes

Hernan Aguirre (*Shinshu University*),
Kiyoshi Tanaka (*Shinshu University*)

Articulating User Preferences in Many-Objective Problems by Sampling the Weighted Hypervolume

Anne Auger (*INRIA Saclay*),
Johannes Bader (*ETH Zurich*),
Dimo Brockhoff (*ETH Zurich*),
Eckart Zitzler (*ETH Zurich*)

Multiplicative Approximations and the Hypervolume Indicator

Tobias Friedrich (*International Computer Science Institute*),
Christian Horoba (*Technische Universität Dortmund*),
Frank Neumann (*Max-Planck-Institut für Informatik*)

Generative and Developmental Systems

The Sensitivity of HyperNEAT to Different Geometric Representations of a Problem

Jeff Clune (*Michigan State University*),
Charles Ofria (*MSU*),
Robert T Pennock (*MSU*)

Scalability, Generalization and Coevolution - Experimental Comparisons Applied to Automated Facility Layout Planning

Marcus Furuholmen (*Aker Subsea AS*),
Kyrre Harald Glette (*University of Oslo*),
Mats Erling Hovin (*University of Oslo*),
Jim Torresen (*University of Oslo*)

Evolution of Cartesian Genetic Programs Capable of Learning

Gul Muhammad Khan (*NWFP UET*),
Julian F Miller (*University of York*)

Evolving Symmetric and Modular Neural Networks for Distributed Control

Vinod K Valsalam (*The University of Texas at Austin*),
Risto Miikkulainen (*The University of Texas at Austin*)

Genetic Algorithms

On the Significance of the Permutation Problem in Neuroevolution

Stefan Haflidason (*University of Manchester*),
Richard Neville (*University of Manchester*)

Maximal Age in Randomized Search Heuristics with Aging

Christian Horoba (*Technische Universität Dortmund*),
Thomas Jansen (*University College Cork*),
Christine Zarges (*Technische Universität Dortmund*)

Analysis of Coevolution for Worst-Case Optimization

Philipp Stuermer (*University of Karlsruhe*),
Anthony Bucci (*Icosystem Corporation*),
Juergen Branke (*University of Karlsruhe*),
Pablo Funes (*Icosystem Corporation*),
Elena Popovici (*Icosystem Corporation*)

Tunneling Between Optima: Partition Crossover for the Traveling Salesman Problem

Darrell Whitley (*Colorado State University*),
Adele Howe (*Colorado State University*),
Doug Hains (*Colorado State University*)

Papers Nominated for Best Paper Awards (Continued)

Genetic Programming

A Genetic Programming Approach to Automated Software Repair

Stephanie Forrest (*University of New Mexico*),
ThanhVu Nguyen (*University of New Mexico*),
Westley Weimer (*University of Virginia*),
Claire Le Goues (*University of Virginia*)

Developmental Plasticity in Linear Genetic Programming

Nicholas Freitag McPhee (*University of Minnesota, Morris*),
Ellery Crane (*University of Minnesota, Morris*),
Sara E. Lahr (*University of Minnesota, Morris*),
Riccardo Poli (*University of Essex*)

Genetics-Based Machine Learning

Learning Sensorimotor Control Structures with XCSF

Martin V. Butz (*University of Würzburg*),
Gerulf K.M. Pedersen (*University of Würzburg*),
Patrick O. Stalph (*University of Würzburg*)

Neural Network Ensembles for Time Series Forecasting

Victor M Landassuri-Moreno (*University of Birmingham*),
John A. Bullinaria (*University of Birmingham*)

New Entropy Model for Extraction of Structural Information from XCS Population

WonKyung Park (*Syracuse University*),
Jae C. Oh (*Syracuse University*)

Parallel Evolutionary Systems

Distributed Hyper-Heuristics for Real Parameter Optimization

Marco Biazini (*University of Trento*),
Balazs Banhelyi (*University of Szeged*),
Alberto Montresor (*University of Trento*),
Mark Jelasity (*University of Szeged and Hungarian Academy of Sciences*)

Overcoming Partitioning in Large Ad Hoc Networks Using Genetic Algorithms

Grégoire Danoy (*University of Luxembourg*),
Bernabé Dorronsoro (*University of Luxembourg*),
Pascal Bouvry (*University of Luxembourg*)

Strategies to Minimise the Total Run Time of Cyclic Graph Based Genetic Programming with GPUs

Tony E Lewis (*Birkbeck College, University of London*),
George D Magoulas (*Birkbeck College, University of London*)

Real World Application

Optimizing Low-Discrepancy Sequences with an Evolutionary Algorithm

François-Michel De Rainville (*Université Laval*),
Christian Gagné (*Université Laval*),
Olivier Teytaud (*INRIA Saclay - Île-de-France*),
Denis Laurendeau (*Université Laval*)

Optimization of the Trading Rule in Foreign Exchange using Genetic Algorithm

Akinori Hirabayashi (*Hartford Life Insurance K.K.*),
Claus Aranha (*The University of Tokyo*),
Hitoshi Iba (*The University of Tokyo*)

Tracking Multiple Objects in Non-Stationary Video

Hoang Nguyen (*University of California, Riverside*),
Bir Bhanu (*University of California, Riverside*)

Search Based Software Engineering

Software Project Planning for Robustness and Completion Time in the Presence of Uncertainty using Multi Objective Search Based Software Engineering

Stefan Gueorguiev (*Avanade*),
Mark Harman (*King's College London*),
Giuliano Antoniol (*École Polytechnique de Montréal*)

Search-Based Failure Discovery using Testability Transformations to Generate Pseudo-Oracles

Phil McMinn (*University of Sheffield*)

Theory

Dynamic Evolutionary Optimisation: An Analysis of Frequency and Magnitude of Change

Philipp Rohlfshagen (*University of Birmingham*),
Per Kristian Lehre (*University of Birmingham*),
Xin Yao (*University of Birmingham*)

Free Lunches in Pareto Coevolution

Travis C Service (*Vanderbilt University*),
Daniel Tauritz (*Missouri University of Science and Technology*)