

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 this tradition at GECCO-2008. 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 are given below:

Ant Colony Optimization, Swarm Intelligence, and Artificial Immune Systems

Collective Intelligence and Bush Fire Spotting

David Howden (*Swinburne University of Technology*),
Tim Hendtlass (*Swinburne University of Technology*)

Convergence Behavior of the Fully Informed Particle Swarm Optimization Algorithm

Marco A. Montes de Oca (*Université Libre de Bruxelles*),
Thomas Stützle (*Université Libre de Bruxelles*)

Evolutionary Swarm Design of Architectural Idea Models

Sebastian von Mammen (*University of Calgary*),
Christian Jacob (*University of Calgary*)

Theoretical and Empirical Study of Particle Swarms with Additive Stochasticity and Different Recombination Operators

Jorge Peña (*Université de Lausanne*)

Artificial Life, Evolutionary Robotics, Adaptive Behavior, Evolvable Hardware

The Influence of Scaling and Assortativity on Takeover Times in Scale-Free Topologies

Joshua L Payne (*University of Vermont*),
Margaret J Eppstein (*University of Vermont*)

Designing Multi-Rover Emergent Specialization

Geoff Nitschke (*Vrije Universiteit*),
Martijn Schut (*Vrije Universiteit*)

A Multi-scaled Approach to Artificial Life Simulation With P Systems and Dissipative Particle Dynamics

James Smaldon (*University of Nottingham*),
Jonathan Blakes (*University of Nottingham*),
Natalio Krasnogor (*University of Nottingham*),
Doron Lancet (*Weizmann Institute of Science*)

Modular Neuroevolution for Multilegged Locomotion

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

Bioinformatics and Computational Biology

An Efficient Probabilistic Population-Based Descent for the Median Genome Problem

Adrien Goeffon (*INRIA*),
Macha Nikolski (*CNRS / LaBRI*),
David J. Sherman (*INRIA*)

Structure and Parameter Estimation for Cell Systems Biology Models

Francisco J. Romero-Campero (*Univeristy of Nottingham*),
Hongqing Cao (*University of Nottingham*),
Miguel Camara (*University of Nottingham*),
Natalio Krasnogor (*University of Nottingham*)

Mask Functions for the Symbolic Modeling of Epistasis Using Genetic Programming

Ryan J Urbanowicz (*Dartmouth College*),
Nate Barney (*Dartmouth College*),
Bill C White (*Dartmouth College*),
Jason H Moore (*Dartmouth College*)

Coevolution

An Empirical Comparison of Evolution and Coevolution for Designing Artificial Neural Network Game Players

Min Shi (*Norwegian University of Science and Technology*)

Estimation of Distribution Algorithms

Using Previous Models to Bias Structural Learning in the Hierarchical BOA

Mark W Hauschild (*University of Missouri - St. Louis*),
Martin Pelikan (*University of Missouri - St. Louis*),
Kumara Sastry (*University of Illinois at Urbana-Champaign*),
David E. Goldberg (*University of Illinois at Urbana-Champaign*)

On the Effectiveness of Distributions Estimated by Probabilistic Model Building

Chung-Yao Chuang (*National Chiao Tung University*),
Ying-ping Chen (*National Chiao Tung University*)

From Mating Pool Distributions to Model Overfitting

Claudio F Lima (*University of Algarve*),
Fernando G Lobo (*University of Algarve*),
Martin Pelikan (*University of Missouri at St. Louis*)

Papers Nominated for Best Paper Awards (Continued)

Evolution Strategies, Evolutionary Programming

Why Noise May be Good

Silja Meyer-Nieberg (*Universitaet der Bundeswehr Muenchen*),
Hans-Georg Beyer (*Vorarlberg University of Applied Sciences*)

Functionally Specialized CMA-ES: A Modification of CMA-ES based on the Specialization of the Functions of Covariance Matrix Adaptation and Step Size Adaptation

Youhei Akimoto (*Tokyo Institute of Technology*),
Jun Sakuma (*Tokyo Institute of Technology*),
Shigenobu Kobayashi (*Tokyo Institute of Technology*),
Isao Ono (*Tokyo Institute of Technology*)

Aiming for a theoretically tractable CSA variant by means of empirical investigations

Jens Jägersküpfer (*TU Dortmund*),
Mike Preuss (*TU Dortmund*)

Evolutionary Combinatorial Optimization

A Study of NK Landscapes' Basins and Local Optima Networks

Gabriela Ochoa (*University of Nottingham*),
Marco Tomassini (*University of Lausanne*),
Sebastien Verel (*CNRS-University of Nice*),
Christian Darabos (*University of Lausanne*)

Crossover Can Provably be Useful in Evolutionary Computation

Benjamin Doerr (*Max-Planck-Institut für Informatik*),
Edda Happ (*Max-Planck-Institut für Informatik*),
Christian Klein (*Max-Planck-Institut für Informatik*)

Evolutionary Multiobjective Optimization

A New Memetic Strategy for the Numerical Treatment of Multi-Objective Optimization Problems

Oliver Schuetze (*CINVESTAV-IPN*),
Gustavo Sanchez (*Simon Bolivar University*),
Carlos A. Coello Coello (*CINVESTAV-IPN*)

Introducing MONEDA: Scalable Multiobjective Optimization with a Neural Estimation of Distribution Algorithm

Luis Martí (*Universidad Carlos III de Madrid*),
Jesús García (*Universidad Carlos III de Madrid*),
Antonio Berlanga (*Universidad Carlos III de Madrid*),
José Manuel Molina (*Universidad Carlos III de Madrid*)

Pattern Identification in Pareto-Set Approximations

Tamara Ulrich (*ETH Zurich*),
Dimo Brockhoff (*ETH Zurich*),
Eckart Zitzler (*ETH Zurich*)

Benefits and Drawbacks for the Use of epsilon-Dominance in Evolutionary Multi-Objective Optimization

Christian Horoba (*Technische Universität Dortmund*),
Frank Neumann (*Max-Planck-Institut für Informatik*)

Formal Theory

Computing Minimum Cuts by Randomized Search Heuristics

Frank Neumann (*Max-Planck-Institut für Informatik*),
Joachim Reichel (*TU Berlin*),
Martin Skutella (*TU Berlin*)

Memetic Algorithms with Variable-Depth Search to Overcome Local Optima

Dirk Sudholt (*TU Dortmund*)

Precision, Local Search and Unimodal Functions

Martin Dietzfelbinger (*Technische Universität Ilmenau*),
Jonathan E Rowe (*University of Birmingham*),
Ingo Wegener (*Technische Universität Dortmund*),
Philipp Woelfel (*University of Calgary*)

Generative and Developmental Systems

Generative Encoding for Multiagent Systems

David B. D'Ambrosio (*University of Central Florida*),
Kenneth O. Stanley (*University of Central Florida*)

A Cellular Model for the Evolutionary Development of Lightweight Material with an Inner Structure

Till Steiner (*Honda Research Institute Europe GmbH*),
Yaochu Jin (*Honda Research Institute Europe GmbH*),
Bernhard Sendhoff (*Honda Research Institute Europe GmbH*)

Genetic Algorithms

Optimal Sampling of Genetic Algorithms on Polynomial Regression

Tian-Li Yu (*National Taiwan University*),
Wei-Kai Lin (*National Taiwan University*)

Rank Based Variation Operators for Genetic Algorithms

Jorge Cervantes (*Universidad Autónoma Metropolitana*),
Christopher Rhodes Stephens (*Instituto de Ciencias Nucleares UNAM*)

Theoretical Analysis of Diversity Mechanisms for Global Exploration

Tobias Friedrich (*Max-Planck-Institut fuer Informatik*),
Pietro S. Oliveto (*University of Birmingham*),
Dirk Sudholt (*TU Dortmund*),
Carsten Witt (*TU Dortmund*)

Rigorous Analyses of Fitness-Proportional Selection for Optimizing Linear Functions

Edda Happ (*Max-Planck-Institut Informatik*),
Daniel Johannsen (*Max-Planck-Institut Informatik*),
Christian Klein (*Max-Planck-Institut Informatik*),
Frank Neumann (*Max-Planck-Institut Informatik*)

Genetic Programming

Parsimony Pressure Made Easyød:

Riccardo Poli (*University of Essex*),
Nicholas Freitag McPhee (*University of Minnesota, Morris*)

The Impact of Population Size on Code Growth in GP: Analysis and Empirical Validation

Riccardo Poli (*University of Essex*),
Nicholas Freitag McPhee (*University of Minnesota, Morris*),
Leonardo Vanneschi (*University of Milano-Bicocca*)

Rapid Prediction of Optimum Population Size in Genetic Programming Using a Novel Genotype - Fitness Correlation

David C Wedge (*University of Manchester*),
Douglas B Kell (*University of Manchester*)

Learning to Recognise Mental Activities: Genetic Programming of Stateful Classifiers for Brain-Computer Interfacing

Alexandros Agapitos (*University of Essex*),
Matthew Dyson (*University of Essex*),
Simon M Lucas (*University of Essex*),
Francisco Sepulveda (*University of Essex*)

Genetics-Based Machine Learning and Learning Classifier Systems

Context-Dependent Predictions and Cognitive Arm Control with XCSF

Martin V Butz (*University of Würzburg*),
Oliver Herbot (*University of Würzburg*)

Real World Applications

Speeding Online Synthesis via Enforced Selecto-Recombination

Shunsuke Saruwatari (*University of Illinois at Urbana-Champaign*),
Xavier Llorca (*University of Illinois at Urbana-Champaign*),
Noriko Imafuji Yasui (*University of Illinois at Urbana-Champaign*),
Hiroshi Tamura (*Hakuhodo Inc*),
Kumara Sastry (*University of Illinois at Urbana-Champaign*),
David E. Goldberg (*University of Illinois at Urbana-Champaign*)

Evolved Bayesian Networks as a Versatile Alternative to Partin Tables for Prostate Cancer Management

Ratiba Kabli (*The Robert Gordon University*),
John McCall (*The Robert Gordon University*),
Frank Herrmann (*The Robert Gordon University*),
Eng Ong (*Aberdeen Royal Infirmary*)

Genetic Algorithms for Mentor-Assisted Evaluation Function Optimization

Omid David-Tabibi (*Bar-Ilan University*),
Moshe Koppel (*Bar-Ilan University*),
Nathan S. Netanyahu (*Bar-Ilan University*)

Multiobjective Robustness for Portfolio Optimization in Volatile Environments

Ghada Hassan (*UCL*),
Christopher D. Clack (*UCL*)

Search-Based Software Engineering

Empirical Analysis of a Genetic Algorithm-based Stress Test Technique

Vahid Garousi (*University of Calgary*)

Fitness Calculation Approach for the Switch-Case Construct in Evolutionary Testing

Yan Wang (*Software Engineering Institute, Xidian University*),
Zhiwen Bai (*Software Engineering Institute, Xidian University*),
Miao Zhang (*Software Engineering Institute, Xidian University*),
Wen Du (*Software Engineering Institute, Xidian University*),
Ying Qin (*Software Engineering Institute, Xidian University*),
Xiyang Liu (*Software Engineering Institute, Xidian University*)

Searching for Liveness Property Violations in Concurrent Systems with ACO

Francisco Chicano (*University of Málaga*),
Enrique Alba (*University of Málaga*)