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)

**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 (University 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)

**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)

**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 (Universität der Bundeswehr München),
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 Jägersküpper (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 Schuettez (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 Marti (Universidad Carlos III de Madrid),
Jesus Garcia (Universidad Carlos III de Madrid),
Antonio Berlanga (Universidad Carlos III de Madrid),
Jose 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 Herborg (University of Würzburg)

Real World Applications
Speeding Online Synthesis via Enforced Selecto-Recombination
Shunsuke Saruwatari (University of Illinois at Urbana-Champaign), Xavier Llora (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)