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-2007. 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, and Artificial Immune Systems

Analyzing Heuristic Performance with Response Surface Models: Prediction, Optimization and Robustness
Enda Ridge, Daniel Kudenko *(The University of York)*

Dendritic Cells for SYN Scan Detection
Julie Greensmith, Uwe Aickelin *(University of Nottingham)*

Exact Analysis of the Sampling Distribution for the Canonical Particle Swarm Optimiser & Its Convergence during Stagnation
Riccardo Poli *(University of Essex)*
David Broomhead *(University of Manchester)*

On the Runtime Analysis of the 1-ANT ACO Algorithm
Benjamin Doerr, Frank Neumann *(Max-Planck-Institut für Informatik)*
Dirk Sudholt, Carsten Witt (Universität Dortmund)

Artificial Life, Evolutionary Robotics, Adaptive Behavior, Evolvable Hardware

Action-Selection and Crossover Strategies for Self-Modeling Machines
Josh Bongard *(University of Vermont)*

Hill Climbing on Discrete HIFF: Exploring the Role of DNA Transposition in Long-term Artificial Evolution
Susan Khor *(Concordia University)*

The Effect of Learning on Life History Evolution
John A. Bullinaria *(University of Birmingham)*

Biological Applications

A Multi-Objective Approach to Discover Biclusters in Microarray Data
Federico Divina, Jesus S Aguilar-Ruiz *(Pablo de Olavide University)*

Discrimination of Metabolic Flux Profiles Using a Hybrid Evolutionary Algorithm
Stefan Bleuler, Eckart Zitzler *(ETH Zurich)*

Parsimonious Regularization using Genetic Algorithms Applied to the Analysis of Analytical Ultracentrifugation Experiments
Emre H Brookes *(University of Texas at San Antonio)*
Borries Demeler *(University of Texas Health Science Center at San Antonio)*

Coevolution

Cross Entropy and Adaptive Variance Scaling in Continuous EDA
Yunpeng Cai, Xiaomin Sun, Hua Xu, Peifa Jia *(Tsinghua University)*

Objective Fitness Correlation
Edwin D. De Jong *(Utrecht University)*

Estimation of Distribution Algorithms

Optimal Nesting of Species for Exact Cover of Resources
Jeffrey Horn *(Northern Michigan University)*

Population Sizing for Entropy-based Model Building in Discrete Estimation of Distribution Algorithms
Tian-Li Yu *(National Taiwan University)*
Kumara Sastry, David E. Goldberg *(University of Illinois at Urbana-Champaign)*
Martin Pelikan *(University of Missouri-St. Louis)*

Towards Billion-Bit Optimization via a Parallel Estimation of Distribution Algorithm
Kumara Sastry, David E. Goldberg, Xavier Llorà *(University of Illinois at Urbana-Champaign)*

Evolution Strategies, Evolutionary Programming

On the Use of Evolution Strategies for Optimising Certain Positive Definite Quadratic Forms
Dirk V. Arnold *(Dalhousie University)*

Performance Analysis of Niching Algorithms Based on Derandomized-ES Variants
Ofer M. Shir, Thomas Bäck *(Leiden University)*

Reducing the Space-Time Complexity of the CMA-ES
James N Knight, Monte Lunacek *(Colorado State University)*

Papers Nominated for Best Paper Awards (Continued)

Evolutionary Multiobjective Optimization

Convergence of Stochastic Search Algorithms to Gap-Free Pareto FrontApproximations
Oliver Schütze *(INRIA Futurs)*
Marco Laumanns *(ETH Zurich)*
Emilia Tantar *(INRIA Futurs)*
Carlos A. Coello Coello *(CINVESTAV-IPN)*
El-ghazali Talbi *(INRIA Futurs)*

Exploring the Behavior of Building Blocks for Multi-Objective Variation Operator Design using Predator-Prey Dynamics
Christian Grimme, Joachim Lepping, Alexander Papaspyrou *(Dortmund University)*

SNDL-MOEA: Stored Non-Domination Level MOEA
Matt D Johnson, Daniel R Tauritz, Ralph W Wilkerson *(University of Missouri-Rolla)*

Formal Theory

Evolutionary Algorithms and Matroid Optimization Problems
Joachim Reichel, Martin Skutella *(University of Dortmund)*

Generative and Developmental Systems

A Novel Generative Encoding for Exploiting Neural Network Sensor and Output Geometry
David B. D'Ambrosio, Kenneth O. Stanley *(Univeristy of Central Florida)*

Acquiring Evolvability through Adaptive Representations
Joseph S Reisinger, Risto Miikkulainen *(The University of Texas at Austin)*

Methods for Open-box Analysis in Artificial Development
Adrian Grajdeanu *(George Mason University)*

Genetic Algorithms

Adjacency List Matchings --- An Ideal Genotype for Cycle Covers
Benjamin Doerr, Daniel Johannsen *(Max-Planck-Institut für Informatik)*

Empirical Analysis of Ideal Recombination on Random Decomposable Problems
Kumara Sastry *(University of Illinois at Urbana-Champaign)*
Martin Pelikan *(University of Missouri at St. Louis)*
David E. Goldberg *(University of Illinois at Urbana-Champaign)*

Extended Probe Method for Linkage Discovery over High-cardinality Alphabets
Shude Zhou, Zengqi Sun *(Tsinghua University)*
Robert B Heckendorn *(University of Idaho)*

Fitness-Proportional Negative Slope Coefficient as a Hardness Measure for Genetic Algorithms
Riccardo Poli *(University of Essex)*
Leonardo Vanneschi *(University of Milano-Bicocca)*

Rigorous Analyses of Simple Diversity Mechanisms
Tobias Friedrich, Nils Hebbinghaus, Frank Neumann *(Max-Planck-Institut für Informatik)*

Genetic Programming

Generalisation of the Limiting Distribution of Program Sizes in Tree-based Genetic Programming and Analysis of its Effects on Bloat
Stephen Dignum, Riccardo Poli *(University of Essex)*

Genetic Programming for Cross-Task Knowledge Sharing
Wojciech Jaskowski, Krzysztof Krawiec, Bartosz Wieloch *(Poznan University of Technology)*

Learning Noise
Michael D Schmidt, Hod Lipson *(Cornell University)*

On the Constructiveness of Context-Aware Crossover
Hammad Majeed, Conor Ryan *(University of Limerick)*

Genetics-Based Machine Learning

Controlling Overfitting with Multi-Objective Support Vector Machines
Ingo Mierswa *(University of Dortmund)*

Empirical Analysis of Generalization and Learning in XCS with Gradient Descent
Pier Luca Lanzi *(Politecnico di Milano)*
Martin V Butz *(University of Wurzburg)*
David E. Goldberg *(University of Illinois at Urbana Champaign)*

Mixing Independent Classifiers
Jan Drugowitsch, Alwyn M. Barry *(University of Bath)*

Papers Nominated for Best Paper Awards (Continued)

Real-World Applications

A Destructive Evolutionary ProcessA pilot Implementation
    Joe Sullivan *(Limerick Institute of Technology)*
    Conor Ryan *(University of Limerick)*

An Evolutionary Keystroke Authentication Based on Ellipsoidal Hypothesis Space
    Jae-Wook Lee, Sung-Soon Choi, Byung-Ro Moon *(Seoul National University)*

Coupling EA and High-level Metrics for the Automatic Generation of Test Blocks for Peripheral Cores
    Leticia Bolzani, Ernesto Sanchez, Massimiliano Schillaci, Giovanni Squillero *(Politecnico di Torino)*

Evolving Robust GP Solutions for Hedge Fund Stock Selection in Emerging Markets
    Wei Yan, Christopher D. Clack
    (University College London)

Genetically Generated Double-Level Fuzzy Controller with a Fuzzy Adjustment Strategy
    Sofiane Achiche, Wei Wang, Zhun Fan, Ali Ozkil, Torben Sørensen *(Technical University of Denmark)*
    Jiachuan Wang *(United Technologies Research Center)*
    Erik Goodman *(Michigan State University)*

Multiobjective Network Design for Realistic Traffic Models
    Nilanjan Nilanjan Banerjee *(University of Massachusetts)*
    Rajeev Kumar *(Indian Institute of Technology Kharagpur)*

Real-Coded ECGA for Economic Dispatch
    Chao-Hong Chen, Ying-ping Chen
    (National Chiao Tung University)

Search-Based Software Engineering

Finding Safety Errors with ACO
    Enrique Alba, Francisco Chicano
    (University of Málaga)

The Multi-Objective Next Release Problem
    Yuanyuan Zhang, Mark Harman, S. Afshin Mansouri
    (King's College London)