

Preface

This LNCS volume contains the proceedings of the 13th International Conference on Parallel Problem Solving from Nature (PPSN 2014). This biennial event constitutes one of the most important and highly regarded international conferences in evolutionary computation and bio-inspired metaheuristics. Continuing with a tradition that started in Dortmund in 1990, PPSN 2014 was held during September 13–17, 2014, in Ljubljana, Slovenia.

PPSN 2014 received 217 submissions from 44 countries. After an extensive peer-review process where most papers were evaluated by at least four reviewers, the Program Committee chairs went through all the reports and ranked the papers. The top 90 manuscripts were finally selected for inclusion in this LNCS volume and for presentation at the conference. This represents an acceptance rate of 41%, which guarantees that PPSN will continue to be one of the most respected conferences for researchers working in natural computing around the world.

PPSN 2014 featured three distinguished keynote speakers: Jadran Lenarčič (Jožef Stefan Institute, Slovenia), Thomas Bäck (Leiden University, The Netherlands), and A. E. (Gusz) Eiben (VU University Amsterdam, The Netherlands).

The meeting began with seven workshops: “Scaling Behaviors of Landscapes, Parameters and Algorithms” (Ender Özcan, Andrew J. Parkes), “Advances in Multimodal Optimization” (Mike Preuss, Michael G. Epitropakis, Xiaodong Li), “Semantic Methods in Genetic Programming” (Colin Johnson, Krzysztof Krawiec, Alberto Moraglio, Michael O’Neill), “In Search of Synergies Between Reinforcement Learning and Evolutionary Computation” (Madalina M. Drugan, Bernard Manderick), “Natural Computing for Protein Structure Prediction” (José Santos Reyes, Gregorio Toscano, Julia Handl), “Workshop on Nature-Inspired Techniques for Robotics” (Claudio Rossi, Nicolas Bredeche, Kasper Stoy), and “Student Workshop on Bioinspired Optimization Methods and their Applications – BIOMA 2014” (Jurij Šilc, Aleš Zamuda). The workshops offered an ideal opportunity for the conference members to explore specific topics in evolutionary computation, bio-inspired computing, and metaheuristics in an informal and friendly setting.

PPSN 2014 also included nine free tutorials: “Theory of Evolutionary Computation” (Anne Auger, Benjamin Doerr), “Low or No Cost Distributed Evolutionary Computation” (J.J. Merelo), “Cartesian Genetic Programming” (Julian F. Miller), “Multimodal Optimization” (Mike Preuss), “Theory of Parallel Evolutionary Algorithms” (Dirk Sudholt), “Automatic Design of Algorithms via Hyper-heuristic Genetic Programming” (John R. Woodward, Jerry Swan, Michael Epitropakis), “Evolutionary Bilevel Optimization” (Ankur Sinha, Pekka Malo, Kalyanmoy Deb), “Parallel Experiences in Solving Complex Problems”

(Enrique Alba), and “Algorithm and Experiment Design with HeuristicLab – An Open Source Optimization Environment for Research and Education” (Stefan Wagner, Gabriel Kronberger).

We wish to express our gratitude in particular to the Program Committee members and external reviewers who provided thorough evaluations of all 217 submissions. We also express our profound thanks to all the members of the Organizing Committee and the local organizers for their outstanding efforts in preparing for and running the conference. Thanks to all the keynote and tutorial speakers for their participation, which greatly enhanced the quality of the conference. Finally, we also express our gratitude to the sponsoring institutions for their financial support and the conference partners for participating in the organization of this event.

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Thomas Bartz-Beielstein
Jürgen Branke
Bogdan Filipič
Jim Smith