

Preface

The 18th European Conference on Genetic Programming (EuroGP) took place during April 8–10, 2015. Copenhagen, Denmark was the setting, and the *Nationalmuseet* was the venue. EuroGP is the only conference exclusively devoted to the evolutionary generation of computer programs and attracts scholars from all over the world. The maturity of the event is in part reflected by the fact that ‘Google Scholar’ now lists EuroGP as one of the top 20 venues in Evolutionary Computation with an h5-index and h5-median of 15 and 18 respectively.¹ Collectively, over 10,000 articles now appear in the online GP bibliography maintained by William B. Langdon.²

The unique character of genetic programming has been recognized from its very beginning. EuroGP has had an essential impact on the success of the field, by serving as an important forum for expressing new ideas, meeting fellow researchers, and starting collaborations. Indeed, EuroGP represents the single largest venue at which genetic programming results are published. Many success stories have been witnessed by the 18 editions of EuroGP. To date, genetic programming is essentially the only approach that has demonstrated the ability to automatically generate, repair, and improve computer code in a wide variety of problem areas. It is also one of the leading methodologies that can be used to ‘automate’ science, helping researchers to induce hidden complex models from observed phenomena. Furthermore, genetic programming has been applied to many problems of practical significance, and has produced human-competitive solutions.

EuroGP 2015 received 36 submissions from 21 different countries across five continents. The papers underwent a rigorous double-blind peer-review process, each being reviewed by at least three members of the international Program Committee from 23 countries. The selection process resulted in this volume, with 12 papers accepted for oral presentation (33.3 % acceptance rate) and 6 for poster presentation (50 % global acceptance rate for talks and posters combined). The wide range of topics in this volume reflects the current state of research in the field. Thus, we see topics as diverse as semantic methods, recursive programs, grammatical methods, coevolution, Cartesian GP, feature selection, initialization procedures, ensemble methods, and search objectives; and applications including text processing, cryptography, numerical modeling, software parallelization, creation and optimization of circuits, multi-class classification, scheduling, and artificial intelligence.

Together with three other colocated evolutionary computation conferences (EvoCOP 2015, EvoMUSART 2015, and EvoApplications 2015), EuroGP 2015 was part of the Evo* 2015 event. This meeting could not have taken place without the help of many people.

¹ http://scholar.google.com/citations?view_op=top_venues&vq=eng_evolutionarycomputation.

² <http://iinwww.ira.uka.de/bibliography/Ai/genetic.programming.html>.

First to be thanked is the great community of researchers and practitioners who contributed to the conference by both submitting their work and reviewing others' as part of the Program Committee. Their hard work, in evolutionary terms, provided both variation and selection, without which progress in the field would not be possible!

The papers were submitted, reviewed, and selected using the MyReview conference management software. We are sincerely grateful to Marc Schoenauer of Inria, France, for his great assistance in providing, hosting, and managing the software.

We would like to thank the local organising team: Paolo Burelli from the Faculty of Engineering and Science, Aalborg University and Sebastian Risi, codirector of the Robotics, Evolution and Art Laboratory at the IT University of Copenhagen.

We thank Kevin Sim from the Institute for Informatics & Digital Information, Edinburgh Napier University for creating and maintaining the official Evo* 2014 website, and Pablo Garía-Sánchez (Universidad de Granada, Spain) and Mauro Castelli (Universidade Nova de Lisboa, Portugal) for being responsible for Evo* 2014 publicity.

We would also like to express our sincerest gratitude to our invited speakers, who gave inspiring keynote talks: Professor Paulien Hogeweg of the Bioinformatics group, Utrecht University, The Netherlands, and Dr. Pierre-Yves Oudeyer, Research Director at Inria, Paris, France.

We especially want to express our genuine gratitude to Jennifer Willies of the Institute for Informatics and Digital Innovation at Edinburgh Napier University, UK. Her dedicated and continued involvement in Evo* since 1998 has been and remains essential for building the image, status, and unique atmosphere of this series of events.

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