

Preface

The 20th European Conference on Genetic Programming (EuroGP) took place in Amsterdam, The Netherlands, during April 19–21, 2017.

Genetic programming (GP) is a unique field of research. It uses the principles of Darwinian evolution, already well-known in genetic algorithms and other areas of evolutionary computation, to approach problems in the synthesis, improvement, and repair of computer programs. The universality of computer programs, and their importance in so many areas of our lives, means that the automation of these tasks is an exceptionally ambitious challenge with far-reaching implications. It has attracted a very large number of researchers: over 12,000 articles now appear in the online GP bibliography¹. GP researchers have demonstrated some extraordinary successes, many presented at EuroGP itself.

Since the first EuroGP event, in Paris in 1998, EuroGP has been the only conference exclusively devoted to the evolutionary generation of computer programs. Indeed, EuroGP represents the single largest venue at which GP results are published. It plays an important role in the success of the field, by serving as a forum for expressing new ideas, meeting fellow researchers, and starting collaborations. It attracts scholars from all over the world. The 20th anniversary edition of EuroGP was characterized by the same friendly and welcoming atmosphere for which it has always been known.

EuroGP 2017 received 34 submissions from around the world. The papers underwent a rigorous double-blind peer-review process, each being reviewed by at least three members of the international Program Committee from 24 countries.

The members of the Program Committee encountered an exceptionally high standard this year, and the chairs decided to recognize this by allowing an increase compared with the typical EuroGP acceptance rate. The selection process resulted in the papers presented in this volume, with 14 accepted for full-length oral presentation (41.2% acceptance rate) and eight for short talks (64.7% acceptance rate for both categories of papers combined). Authors of both categories of papers also had the opportunity to present their work in poster sessions.

The wide range of topics in this volume reflects the current state of research in the field. Thus, we see topics and applications including program synthesis, genetic improvement, grammatical representations, self-adaptation, multi-objective optimization, program semantics, search landscapes, mathematical programming, games, operations research, networks, evolvable hardware, and program synthesis benchmarks.

¹ <http://iinwww.ira.uka.de/bibliography/Ai/genetic.programming.html>.

Together with three other co-located evolutionary computation conferences (EvoCOP 2017, EvoMusArt 2017, and EvoApplications 2017), EuroGP 2017 was part of the Evo* 2017 event. This meeting could not have taken place without the help of many people. The EuroGP Organizing Committee is particularly grateful to the following.

- SPECIES – the Society for the Promotion of Evolutionary Computation in Europe and its Surroundings, and its board:

Marc Schoenauer, President
Anna Esparcia Alcázar, Secretary and Vice-President
Wolfgang Banzhaf, Treasurer

- The high-quality and diverse EuroGP Program Committee. Each year the members give freely of their time and expertise, in order to maintain high standards in EuroGP, and provide constructive feedback to help authors improve their papers.
- Marc Schoenauer of Inria-Saclay, France, for his continued hosting and maintaining of the MyReview conference management system.
- The local organizing team, Evert Haasdijk and Jacqueline Heinerman of VU Amsterdam.
- Pablo García-Sánchez (University of Cádiz, Spain) for the Evo* 2017 publicity and website.
- Our invited speakers, Kenneth De Jong and Arthur Kordon, who gave inspiring, enlightening, and entertaining keynote talks.
- Jennifer Willies, Evo* coordinator, whose dedicated and continued involvement in Evo* since 1998 remains essential for building the image, status, and unique atmosphere of this series of events.

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