

Preface

This two-volume set contains the proceedings of EvoApplications 2016, the 19th European Conference on the Applications of Evolutionary Computation, that was held between March 30 and April 1, 2016, in Porto, Portugal, as a part of EVO*.

Over two decades, EVO* has become Europe's premier event in the field of evolutionary computing. Under the EVO* umbrella, EvoAPPS aims to show the modern applications of this research, ranging from proof of concepts to industrial case studies; EuroGP focuses on genetic programming; EvoCOP targets evolutionary computation in combinatorial optimization; and EvoMUSART is dedicated to evolved and bio-inspired music, sound, art, and design. The proceedings for all of these events are available in the LNCS series.

If EVO* coalesces four different conferences, EvoAPPS exhibits an even higher granularity: It started in 1998 as a collection of small independent workshops and it slowly brought together such vibrant and heterogeneous communities into a single organic event. At the same time, the scientific contributions started to show content more suited to a conference, and workshops evolved into tracks. The change is not over yet: As the world of evolutionary computation is in a constant turmoil, EvoAPPS is mutating to adapt. The scope broadened to include all nature-inspired and bio-inspired computational techniques and computational intelligence in general. New tracks appear every year, while others are merged or suspended.

The conference provides a unique opportunity for students, researchers, and professionals to meet and discuss the applicative and practical aspects of evolutionary computation, and to link academia to industry in a variety of domains.

The 2016 edition comprised 13 tracks focusing on different application domains: EvoBAFIN (business analytics and finance); EvoBIO (computational biology); EvoCOMNET (communication networks and other parallel and distributed systems); EvoCOMPLEX (complex systems); EvoENERGY (energy-related optimisation); EvoGAMES (games and multi-agent systems); EvoIASP (image analysis, signal processing, and pattern recognition); EvoINDUSTRY (real-world industrial and commercial environments); EvoNUM (continuous parameter optimization); EvoPAR (parallel architectures and distributed infrastructures); EvoRISK (risk management, security, and defence); EvoROBOT (evolutionary robotics); and EvoSTOC (stochastic and dynamic environments).

This year, we received 115 high-quality submissions, most of them well suited to fit in more than one track. We selected 58 papers for full oral presentation, while 17 works were given limited space and were shown as posters. All such contributions, regardless of the presentation format, appear as full papers in these two volumes (LNCS 9597 and 9598).

Many people contributed to this edition: We express our gratitude to the authors for submitting their works, and to the members of the Program Committees for devoting such huge effort to review papers pressed by our tight schedule.

The papers were submitted, reviewed, and selected through the MyReview conference management system, and we are grateful to Marc Schoenauer (Inria, Saclay-Île-de-France, France) for providing, hosting, and managing the platform.

We thank the local organizers, Penousal Machado and Ernesto Costa (University of Coimbra, Portugal), as well as the Câmara Municipal do Porto and Turismo do Porto for the local assistance.

We thank Pablo García Sánchez (Universidad de Granada, Spain) for maintaining the EVO* website and handling publicity.

We thank the invited speakers, Richard Forsyth and Kenneth Sörensen, for their inspiring presentations.

We thank the Institute for Informatics and Digital Innovation at Edinburgh Napier University, UK, for the coordination and financial administration.

And we express our gratitude to Jennifer Willies for her dedicated and continued involvement in EVO*. Since 1998, she has been essential for building our unique atmosphere.

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