

# Preface

The overarching goal of the EVOLVE international conference series is to build a bridge between probability, statistics, set-oriented numerics, and evolutionary computing, as to identify new common and challenging research aspects and solve questions at the cross sections of these fields. There is a growing interest for large-scale computational methods with robustness and efficiency guarantees. This includes the challenge to develop sound and reliable methods, a unified terminology, as well as theoretical foundations.

The 2015 edition of the EVOLVE conference was held on June 14–18, in Iași, Romania, in conjunction with ECODAM Summer School on Evolutionary Computing in Optimization and Data Mining. The aim of the conference is to provide a bridge between probability, set-oriented numerics, and evolutionary computation and to bring together experts from these disciplines. This was reflected by the elaborate panel of invited speakers, namely Sorin Istrail (Brown University), Dan Simovici (University of Massachusetts Boston), Kalyanmoy Deb (Michigan State University), Carlos Coello Coello (CINVESTAV-IPN, Mexico City), and Kenneth De Jong (George Mason University) and tutorials by Pierre Del Moral (University of New South Wales), Iryna Yevseyeva (Newcastle University, UK), Michael Emmerich (Leiden University), and Madalina Drugan (Vrije Universiteit Brussels), all being leading experts in their field. The broad focus of the EVOLVE conference made it possible to discuss the connection between these related fields of study in computational science. The selected papers published in the proceedings book have been peer reviewed by an international committee of reviewers (at least three reviews per paper) and have been revised and enhanced by the authors after the conference. The contributions are categorized into five major parts, which are as follows:

- Multicriteria and Set-Oriented Optimization;
- Evolution in ICT Security;
- Computational Game Theory;
- Theory on Evolutionary Computation;
- Applications of Evolutionary Algorithms.

The 2015 edition shows a major progress in the aim to bring disciplines together, the research on a number of topics that have been discussed in previous editions of the conference matured over time, and methods have found their ways in applications. In this sense, the book can be considered an important milestone in this ongoing research effort.

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