

# Preface

This volume contains the proceedings of the 10th Doctoral Workshop on Mathematical and Engineering Methods in Computer Science (MEMICS 2015) held in Telč, Czech Republic, during October 23–25, 2015.

The aim of the MEMICS workshop series is to provide an opportunity for PhD students to present and discuss their work in an international environment. The scope of MEMICS is broad and covers many fields of computer science and engineering. In 2015, we paid special attention to submissions in the following (although not exclusive) areas:

- Security and safety
- Bioinformatics
- Recommender systems
- High-performance and cloud computing
- Non-traditional computational models (quantum computing, etc.)

There were 25 submissions from PhD students from nine countries. Each submission was thoroughly evaluated by at least three Program Committee members, who also provided extensive feedback to the authors. Out of these submissions, ten full papers were selected for publication in these proceedings, and additional seven papers were selected for presentation at the workshop.

The highlights of the MEMICS 2015 program included six keynote lectures delivered by internationally recognized researchers from the aforementioned areas of interest. The speakers were:

Ezio Bartocci (Vienna University of Technology, Austria)  
Siegried Benkner (University of Vienna, Austria)  
Mike Just (Heriot-Watt University, Edinburgh, UK)  
Simone Severini (University College London, UK)  
Natasha Sharygina (University of Lugano, Switzerland)  
Peter Vojtáš (Charles University, Czech Republic)

The full papers of three of these keynote lectures are also included in the proceedings. In addition to regular papers, MEMICS workshops traditionally invite PhD students to submit a presentation of their recent research results that have already undergone a rigorous peer-review process and have been presented at a high-quality international conference or published in a recognized journal. A total of 12 presentations out of 14 submissions from 11 countries were included into the MEMICS 2015 program.

The MEMICS tradition of best paper awards continued also in the year 2015. The best contributed papers were selected during the workshop, taking into account their scientific and technical contribution together with the quality of presentation. The 2015 awards went to the following papers:

Vojtěch Havlena and Dana Hliněná: “Fitting Aggregation Operators”

Agnis Arins: “Span-Program-Based Quantum Algorithms for Graph Bipartiteness and Connectivity”

The two awards consisted of a diploma accompanied by a financial prize of 400 Euro each. The prize money was donated by ZONER software, a. s. and Brno University of Technology.

The successful organization of MEMICS 2015 would not have been possible without generous help and support from the organizing institutions: Brno University of Technology, Masaryk University in Brno, and Charles University Prague.

We thank the Program Committee members and the external reviewers for their careful and constructive work. We thank the Organizing Committee members who helped to create a unique and relaxed atmosphere that distinguishes MEMICS from other computer science meetings. We also gratefully acknowledge the support of the EasyChair system and the great cooperation with the Lecture Notes in Computer Science team of Springer.

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