

Sixth Doctoral Workshop on Mathematical and Engineering Methods in Computer Science (Selected Papers)

MEMICS'10, October 22–24, 2010, Mikulov, Czech Republic

Edited by

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■ Preface

In 2010, the International Doctoral Workshop on *Mathematical and Engineering Methods in Computer Science* (MEMICS'10) entered in the second pentad of three day workshops organized in the Czech Republic region of South Moravia by Faculty of Information Technology of Brno University of Technology and Faculty of Informatics of Masaryk University. MEMICS'10 returned to Mikulov, Czech Republic, and was held between October 22nd and 24th, 2010.

The MEMICS workshops provides an opportunity for PhD students to present and discuss their work in an international environment. The focus on PhD studies and not a particular narrow scientific area leads to a cross-disciplinary orientation of MEMICS workshops, providing a pleasant environment for an exchange of ideas among several different fields of computer science and technology. A joint project of the above mentioned two faculties *Mathematical and Engineering Approaches to Developing Reliable and Secure Concurrent and Distributed Computer Systems*, financially supported by the Czech Science Foundation, provides the necessary funding for organization of the current series of MEMICS workshops.

Submissions are traditionally invited in the following areas: computer security; software and hardware dependability; parallel and distributed computing; formal analysis and verification; simulation; testing and diagnostics; GRID computing; computer networks; modern hardware and its design; non-traditional computing architectures; quantum computing; as well as all areas of theoretical computer science underlying the previously mentioned subjects. Moreover, this year, the scope of MEMICS was extended towards computer graphics and vision, signal and image processing, text and speech processing, human-computer interaction, especially when related with security or parallel or distributed processing.

The scientific programme of the MEMICS'10 workshop consisted of 23 contributed papers selected by the international Programme Committee from a total of 37 contributions. Each paper was reviewed by three independent reviewers who provided not only a recommendation to the Program Committee, but also gave an extensive feedback to the authors. The contributed papers were complemented by *presentations*, having the form of summaries of PhD student's works that already underwent a rigorous peer review process and have been presented at some high quality international conference. A total of 19 presentations selected from 23 submissions was also included in the programme.

All the presentations were given by PhD students who had the opportunity to speak in front of their peers and to receive immediate feedback from participating senior faculty members, including the invited lecturers. From the 23 contributed papers, 17 were selected to appear in the OASICS proceedings. The selection was based on the Programme Committee reviews and also on the quality of presentations given during the MEMICS workshop.

The *Best paper award* came to three contributed papers, selected by the Programme Committee chairs at the end of the workshop. The awarded papers were: (i) Thomas Reinbacher, Joerg Brauer, Martin Horauer, Andreas Steininger, and Stefan Kowalewski: *Test-Case Generation for Embedded Binary Code Using Abstract Interpretation*, (ii) Martin Maška, Pavel Matula, and Michal Kozubek: *Simultaneous Tracking of Multiple Objects Using Fast Level Set-Like Algorithm*, and (iii) Zdeněk Příkryl, Jakub Kroustek, Tomáš Hruška, and Dušan Kolář: *Fast Translated Simulation of ASIPs*. The awards consisted of diplomas for all authors of the selected papers complemented with financial rewards, covered by the sponsoring organizations Red Hat Czech Republic, Zoner Software, and Honeywell Czech Republic.



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Brno, February 2011

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and Pavel Zemčík
PC chairs of MEMICS'10