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Information and Software Technologies

22nd International Conference, ICIST 2016
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Proceedings

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Preface

Information and Software Technologies contains papers presented at the 22nd International Conference on Information and Software Technologies, ICIST 2016, held in October 2016, in Druskininkai, Lithuania.

The papers presented in this volume address the topics of information systems, business intelligence for information and software systems, software engineering, and IT applications. The conference papers present original research results in methodologies for information systems development, conceptual modelling, ontologies, and databases, business processes and business rules, enterprise architecture and enterprise modelling, business intelligence for information and software systems, data mining and knowledge discovery, decision support systems, natural language processing and application of language technologies, knowledge-based system engineering, software engineering software and systems engineering methodologies, model-driven development, cloud computing, IT applications for teaching and learning, Internet of Things and smart environments, and wireless and mobile applications.

The conference included four keynote talks. Prof. Ajith Abraham of Machine Intelligence Research Labs, USA, delivered a keynote on “Cyber Physical Systems: Challenges from a Data Analysis Perspective.” Prof. Sanjay Misra of Covenant University delivered a keynote on “Controlling Quality in Web Service.” Prof. Christian Reimann of Dortmund University of Applied Sciences and Arts, Germany, delivered a keynote on “Software Agents and Services Process Improvement.” Assoc. Prof. Tor-Morten Grønli Westerdals of Oslo School of Arts, Communication and Technology, Norway, presented a keynote on “Mobile Application Architecture and Design in the Era of Internet of Things.”

The research part of the conference was organized in a number of special sessions:

1. Special Session on Intelligent Systems and Software Engineering Advances
2. Special Session on Intelligent Methods for Data Analysis and Computer-Aided Software Engineering
3. Special Session on Innovative Applications for Knowledge Transfer Support
4. Special Session on Information and Software Technologies for Intelligent Power Systems
5. Special Session on e-Health Information Systems
6. Special Session on Internet of Things in Mobility Applications
7. Special Session on Smart e-Learning Technologies and Applications
8. Special Session on Language Technologies

These special sessions provide the opportunity for researchers conducting research in specific areas to present their results in a more focused environment.

There were 158 submissions this year and 61 paper was selected for this publication, giving an acceptance rate of 39 %. The papers were reviewed and selected by the Program Committee consisting of 95 reviewers (supported by 85 additional reviewers)

representing more than 99 academic institutions and 37 countries. Each submission was reviewed by at least two reviewers, while borderline papers were evaluated by three or more reviewers. We believe the selection of 62 accepted papers presented in this book is a good reflection of the latest research on the selected topics.

The participants of the conference were also encouraged to take part in the Industrial Tutorials session co-located with the conference for the sixth year in a row.

A conference would not be possible without the contribution of many people. Hence, we would like to thank particularly the general chair, Prof. E. Bareiša (Kaunas University of Technology), the session chairs and co-chairs, Prof. Carsten Wolff and Prof. Christian Reimann (Dortmund University of Applied Sciences and Arts), Adj. Prof. Pasi Kuvaja (University of Oulu), Prof. Irene Krebs (Brandenburg University of Technology Cottbus-Senftenberg), Prof. Justyna Patalas-Maliszewska (University of Zielona Góra), Prof. Rolf Engelbrecht (Germany), Assoc. Prof. Vytenis Punys (Kaunas University of Technology), Prof. Giedrius Vanagas (Lithuanian University of Health Sciences), Prof. Algirdas Pakštas (London Metropolitan University), Assoc. Prof. Vira Shendryk (Sumy State University), Dr. Marcin Woźniak (Silesian University of Technology), Prof. Emiliano Tramontana and Prof. Christian Napoli (University of Catania), Dr. Maria Dolores Alfonso Suárez (SIANI University Institute), Prof. Audrius Lopata (Vilnius University), Assoc. Prof. Danguolė Rutkauskienė (Kaunas University of Technology), Prof. Radu Adrian Vasiu (Politehnica University of Timisoara), Assoc. Prof. Jurgita Kapočiūtė-Dzikienė (Vytautas Magnus University), and Peter Dirix (University of Leuven).

We also thank the members of the Program Committee and all additional reviewers for providing thoughtful and knowledgeable reviews and ensuring the quality of papers accepted, as well as the local Organizing Committee for their great services and excellent organization of the conference.

The conference was made possible thanks to the support of the Faculty of Informatics, Kaunas University of Technology, and the Research Council of Lithuania, whose contribution is gratefully acknowledged.

As with the proceedings of the four previous ICIST conferences, the proceedings of the ICIST 2016 conference (in printed and electronic volumes) are published by Springer in their *Communications in Computer and Information Science* series. We are very proud of this continuing cooperation. We would like to express our sincere thanks to Leonie Kunz, Aliaksandr Birukou, and Ingrid Beyer, Springer, for their prompt and professional support throughout the entire project.

July 2016

Giedre Dregvaite
Robertas Damasevicius

Organization

The 22nd International Conference on Information and Software Technologies (ICIST 2016) was organized by Kaunas University of Technology and took place in Druskininkai, Lithuania (October 13–15, 2016).

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