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ICTERI

ICT in Education, Research and Industrial Applications

Proceedings of the 14th International Conference, ICTERI 2018. Volume I: Main Conference

Kyiv, Ukraine
May, 2018

This volume represents the proceedings of the Main Conference, with Posters and Demonstrations track, of the 14th International Conference on ICT in Education, Research, and Industrial Applications, held in Kyiv, Ukraine, in May 2018. It comprises 47 contributed papers that were carefully peer-reviewed and selected from 119 submissions. The volume opens with the abstracts of the two keynote talks. The rest of the collection is organized in six parts. Parts II to V contain the contributions to the Main ICTERI Conference tracks, structured in four topical sections: (I) Advances in ICT Research; (II) Information Systems: Technology and Applications; (III) Academia/Industry ICT Cooperation; and (IV) ICT in Education. Part VI presents the concise descriptions of the given tutorials. Part VII comprises the contributions of Posters and Demonstrations track.

Preface

It is our pleasure to present you the proceedings of the Main Conference of ICTERI 2018, the fourteenth edition of the International Conference on Information and Communication Technologies in Education, Research, and Industrial Applications, held in Kyiv (Ukraine) on May 14-17, 2018. This year's edition focused on research advances, information systems technologies and applications, business/academic applications of Information and Communication Technologies. Emphasis was also placed on the role of ICT in Education. These aspects of ICT research, development, technology transfer, and use in real world cases are vibrant for both the academic and industrial communities.

The ICTERI 2018 Main Conference was structured into four thematic tracks reflecting these research fields. In addition, the final part of the proceedings volume contains the extended abstracts of the poster papers which constituted the program of our Posters and Demonstrations Track.

The conference program was complemented by two keynote talks, an invited tutorial, PhD Symposium, poster and demo track, industrial IT Talks sub-event, and five co-located workshops. The proceedings of the PhD Symposium and co-located workshops were published as separate volumes.

The first keynote talk given by Dr. Steffen Lohmann, a senior researcher at the Fraunhofer Institute for Intelligent Analysis and Information Systems as well as associate member of the Smart Data Analytics group at the University of Bonn. His talk was focused on augmenting educational material with knowledge graphs. The second keynote talk was given by Prof. Rajendra Akerkar from Western Norway Research Institute. This talk was about unlocking value from ubiquitous data. The invited tutorial was a focused training on the use of the SlideWiki as an Open Education Platform. It was given by Dr. Klaas Andries de Graaf, a post-doctoral researcher at Vrije Universiteit Amsterdam, and Benjamin Wulff, a researcher at Fraunhofer Institute for Intelligent Analysis and Information Systems.

The rationale behind the Ph.D. Symposium sub-event is to offer an expert environment for the presentation of the tractable ideas and early results of PhD projects or other research aiming at receiving a PhD. Young researchers joined the Symposium to take part in discussions and/or present their papers. They were offered a rare opportunity to exchange and discuss their research ideas with their peers, supervisors, and senior scientists working in the fields within the scope of ICTERI 2018.

Posters and Demonstrations track at ICTERI 2018 called for software demonstrations, interactive models, real-time visualizations, novel technology applications. The

12 selected posters, whose extended abstracts were included in this volume, have been presented in two poster sessions.

Overall ICTERI 2018 Main Conference, including Posters and Demonstrations track, attracted 119 paper submissions, which constituted a 100 percent increase compared to the previous year. Out of these submissions, we have accepted:

- 35 high quality and most interesting papers for the Main Conference program, with the acceptance rate of 34 percent
- 12 best poster presentations, with the acceptance rate of 75 percent

These papers and extended abstracts were published in this Volume I of ICTERI 2018 proceedings.

The conference would not have been possible without the support of many people. First of all, we would like to thank all the authors who submitted papers to ICTERI 2018 and thus demonstrated their interest in the research problems within our scope. We are very grateful to the members of our Program Committee for providing timely and thorough reviews and, also, for being cooperative in doing additional review work. We would like to thank the local organizers of the conference whose devotion and efficiency made this instance of ICTERI a very interesting and effective scientific forum.

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