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IIT.SRC 2012
Student Research Conference

Mária Bieliková (Ed.)

IIT.SRC 2012:
Student Research Conference

8th Student Research Conference
in Informatics and Information Technologies
Bratislava, April 25, 2012
Proceedings

SLOVAK UNIVERSITY OF TECHNOLOGY IN BRATISLAVA
Faculty of Informatics and Information Technologies

Proceedings in
Informatics and Information Technologies

IIT.SRC 2012
Student Research Conference

Editor

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Preface

Research has been one of the main priorities of the university education since its very beginning. It is the case also for our university – the Slovak University of Technology in Bratislava and its faculty – the Faculty of Informatics and Information Technologies. Close connection of research and education leads very naturally to a participation of students in research. This holds not only the students of doctoral study, where research is a substantial part of their study and one of their principal activities. A participation of students in research is "going down" to students of master, even bachelor study.

Universities of technology have a long tradition of students participating in a skilled labour where they have to apply their theoretical knowledge. The best of these results were usually presented at various students' competitions or exhibitions. There were also combined with student research works. Our university has a long tradition in such competition named ŠVOČ (abbreviation of the Student Scientific and Technical Activity). Eight years ago our faculty, FIIT STU, decided to transform former ŠVOČ into the Student Research Conference covering topics of Informatics and Information Technologies (IIT.SRC). Participants are students of all three levels of the study – bachelor (Bc.), master (Ing.) and doctoral (PhD.) study. The conference adopted a form of reviewing as at any other scientific conference, and presenting internally the papers in a form of internal Proceedings, which in most cases means a first step towards later publishing the results on national or international established conferences or journals.

IIT.SRC 2012 attracted 92 student papers from which 79 were accepted (18 bachelor, 41 master, 20 doctoral). The number of papers is rather stable. This year we have noticed an increase in bachelor category comparing to IIT.SRC 2011.

IIT.SRC 2012 was organized in five sections with papers in two categories – full papers and extended abstracts:

- Intelligent Information Processing,
- Web Technologies and Science,
- Software Engineering and Computer Science,
- Computer Systems, Computer Networks and Security,
- User Interaction, Computer Graphics, Image Processing.

The conference was opened by Keith G. Jeffery followed by a keynote titled The Challenges in ICT: Debunking the Hype. Keith is currently Director International Relations at STFC (Science and Technology Facilities Council). He previously had strategic and operational responsibility for ICT with 360,000 users, 1100 servers and 140 staff. His research interests include distributed computing with special emphasize to cloud computing, security and green computing.

Besides the 79 papers presented at the conference and included in these Proceedings several accompanying events were organized. The RoboCup Exhibition is organised as a part of IIT.SRC from 2005. RoboCup is an attractive project with free participation, designed to support education and research in artificial intelligence, robotics and information technologies. Through several years, our students achieved interesting results, which were presented during the conference. RoboCup exhibition presented both the way the RoboCup simulated league is played and also the progress of current students' research in this field. Three years ago a new RoboCup league – three-dimensional (3D) robotic simulation was added. The extension of the simulation to the third dimension shows the continuous progress in RoboCup and in our students' skills.

This year we organized for the fourth time as part IIT.SRC a showcase of TP-Cup projects. TP-Cup is a competition of master students' teams aimed at excellence in development information technologies solutions within two semester long team project module. The competition has four stages. 12 teams managed to achieve this stage and presented their projects during the TP-Cup showcase. Extended abstracts of their projects are included in these proceedings.

Accompanying events included for fifth time also our programming contest. It follows a long tradition at the Slovak University of Technology in Bratislava and our faculty in organizing programming contests, especially the ACM International Collegiate Programming Contest like competitions. This year we have organized for the first time the final round of the ProFIIT programming contest for high school students in parallel with IIT.SRC. Our aim was to show our potential future students exciting research opportunities awaiting them at our university.

We continued this year with FIITApixel exhibition. FIITApixel brings together both students and staff of the Faculty as well as its potential students and alumni in an effort to create, share and judge pictures. It is organized as an ongoing event, where anyone can contribute pictures. The IIT.SRC FIITApixel exhibition presented the best pictures of this year contest.

As a part of IIT.SRC we organized again this year an exhibition of three games with a purpose. Games with a purpose represent a way of harnessing the power of the human brain for producing useful artefacts or solving computational problems through computer gaming. They are interesting not only for the research opportunity itself but also for research promotion and popularization.

Nokia Lab has presented its activities at its presentation spot via several interesting applications whose development has been supported by the FIIT STU Nokia Lab.

New accompanying event this year was Junior IIT.SRC. Junior IIT.SRC provides a room for presenting inventive high school student projects within the topics of the conference. This year, three submissions were selected, first two dealing with an actual topic of electronic parliamentary elections (presenting either the potential platform and result analysis apparatus), the third presenting a smart portal for delivery of IT news and updates, focused on young audience.

IIT.SRC 2012 was the result of considerable effort by a number of people. It is our pleasure to express our thanks to:

- the IIT.SRC 2012 Programme Committee who devoted effort to reviewing papers,
- the IIT.SRC 2012 Organising Committee for a smooth preparation of the event,
- the students – authors of the papers, for contributing good papers reporting their research and their supervisors for bringing the students to research community.

Special thanks go to:

- Anton Andrejko together with Katarína Mršková who did an excellent job in the completion of the proceedings,
- Zuzana Marušincová and the whole organizing committee for effective support of all activities and in making the conference happen.

Finally we highly appreciate the financial support of our sponsors which helped the organizers to provide excellent environment for presentation of the results of student research and valuable awards.

Bratislava, April 2012

Pavel Čičák and Mária Bieliková

Conference Organisation

The 8th Student Research Conference in Informatics and Information Technologies (IIT.SRC), held on April 25, 2012 in Bratislava, was organised by the Slovak University of Technology (and, in particular, its Faculty of Informatics and Information Technologies) in Bratislava.

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