

**Věra Kůrková, Lukáš Bajer, Vojtěch Svátek (Eds.)**

**ITAT 2014 with selected papers from Znalosti 2014**

Proceedings of the main track of the 14th conference ITAT 2014  
(Information Technologies – Applications and Theory)  
with selected papers from the collocated conference Znalosti 2014

Demänovská Dolina – Jasná, Slovakia, September 25–29, 2014

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Two last papers are selected from the collocated conference Znalosti (the complete set of Znalosti 2014 papers, selected from 23 submissions, is accessible from the conference website <http://znalosti.eu>).

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All papers were reviewed by at least two anonymous referees.

<http://www.itat.cz/>

## Introduction

These proceedings contain selected papers from collocated conferences ITAT 2014 (14th conference Information Technologies – Applications and Theory) and Znalosti 2014. The conferences were held in Jasná, Demänovská Dolina, Slovakia, on September 25–29, 2014.

The ITAT conferences are annual meetings organized by the Institute of Computer Science of the University of P. J. Šafárik, Košice, Slovakia and Slovak Society for Artificial Intelligence together with the Institute of Computer Science, Academy of Sciences of the Czech Republic, Prague, and the Faculty of Mathematics and Physics, Charles University, Prague. This series of conferences has been held since 2001 in various places in Slovak mountains.

ITAT is a computer science conference with the primary goal of exchanging information on recent research results between Czech and Slovak scientific communities. Being held in mountain resorts of Slovakia, it provides many opportunities for informal meetings. In particular, it presents a platform for young researchers and PhD students to start new collaborations.

The traditional topics of the conference include software engineering, data and knowledge processing, information security, theoretical foundations of computer science, computational intelligence, distributed computing, natural language processing, and computer science education.

This year, it was held in parallel with two collocated conferences Datakon and Znalosti with which it shared some invited plenary talks and a poster session.

ITAT accepts papers describing original results, significant work-in-progress reports, as well as reviews of special topics of interest to the conference audience. The conference program this year included the main track of 16 contributed papers, two invited lectures, three workshops and a poster session. Three specialized workshops were held as a part of the conference:

- Data Mining and Preference Learning on Web (organized by Ladislav Peška and Peter Vojtáš)
- Computational Intelligence and Data Mining (organized by Martin Holeňa)
- Algorithmic Aspects of Complex Networks Analysis (organized by Martin Nehéz)

Overall, 51 papers were submitted to all conference tracks. This volume present 16 papers of the main track, which were selected by the program committee based on at least two reviews by the program committee members. It also includes two selected papers from the collocated conference Znalosti. Papers from the three workshops and extended abstracts of posters are included in a volume published separately.

It is our pleasure to express our gratitude to everyone who contributed in any way to the success of the event and the completion of these proceedings. We thank the members of the Steering Committee who developed the tradition of the series. In particular, we thank T. Vinař who shared with us his experience in organizing the previous meeting. We thank all the members of the program committee and the reviewers for careful and timely reviewing. We are very grateful to the members of the Organizing Committee from the University of P. J. Šafárik, T. Horváth, P. Gurský, and Š. Pero, who keep the tradition of the series of ITAT conferences as friendly meetings located each year in another beautiful mountain resort. Our secretary H. Bílková deserves special thanks for preparing the conference proceedings.

Last but not least, we thank all invited speakers and authors who contributed to this volume to share their new ideas and results with the community of researchers in the rapidly developing field of informatics. We hope that you enjoy reading and find inspiration for your future work in the papers contained in these proceedings.

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Lukáš Bajer, Institute of Computer Science, Prague  
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