VŠB–TU Ostrava, FEECS, Department of Computer Science
Charles University in Prague, MFF, Department of Software Engineering
Czech Technical University in Prague, FEE, Department of Computer Science
Czech Society for Cybernetics and Informatics

Proceedings of the Dateso 2013 Workshop

DATESO 2013

Databases, Texts, Specifications, and Objects

http://www.cs.vsb.cz/dateso/2013/
http://www.ceur-ws.org/Vol-971/

Supported by

http://www.mirlabs.org/ http://arg.vsb.cz/ieee-smc/

April 17 – 19, 2013
Písek

DATESO 2013
© V. Snášel, K. Richta, J. Pokorný, editors

This work is subject to copyright. All rights reserved. Reproduction or publication of this material, even partial, is allowed only with the editors' permission.

Technical editor:
Pavel Moravec, pavel.moravec@vsb.cz
VŠB – Technical University of Ostrava
Faculty of Electrical Engineering and Computer Science
Department of Computer Science

Page count:	158
Impression:	150
Edition:	1^{st}
First published:	2013

This proceedings was typeset by PDFLaTeX.
Cover design by Pavel Moravec (pavel.moravec@vsb.cz) and Tomáš Skopal.
Printed and bound in Ostrava, Czech Republic by TiskServis Jiří Pustina.

Published by VŠB – Technical University of Ostrava
FEECS, Department of Computer Science
17. listopadu 15, 708 33 Ostrava-Poruba, Czech Republic

Steering Committee

Václav Snášel	VŠB-Technical University of Ostrava, Ostrava
Karel Richta	Czech Technical University, Prague
Jaroslav Pokorný	Charles University, Prague

Program Committee

Václav Snášel (chair)	VŠB-Technical University of Ostrava, Ostrava
Jaroslav Pokorný	Charles University, Prague
Karel Richta	Czech Technical University, Prague
Peter Vojtáš	Charles University, Prague
Michal Krátký	VŠB-Technical University of Ostrava, Ostrava
Tomáš Skopal	Charles University, Prague
Pavel Moravec	VŠB-Technical University of Ostrava, Ostrava
Irena Mlynková	Charles University, Prague
Michal Valenta	Czech Technical University, Prague
Pavel Loupal	Czech Technical University, Prague
Martin Nečaský	Charles University, Prague
Jiří Dvorský	VŠB-Technical University of Ostrava, Ostrava
Radim Bača	VŠB-Technical University of Ostrava, Ostrava
Tomáš Knap	Charles University, Prague
Pavel Strnad	Czech Technical University, Prague
Ondřej Macek	Czech Technical University, Prague

Organizing Committee

Pavel Moravec	VŠB-Technical University of Ostrava, Ostrava
Yveta Geletičová	VŠB-Technical University of Ostrava, Ostrava

Preface

DATESO 2013, the international workshop on current trends on Databases, Information Retrieval, Algebraic Specification and Object Oriented Programming, was held on April 17 – 19, 2013 in Písek.

The 13th year was organized by Department of Computer Science VŠB-Technical University Ostrava, Department of Software Engineering MFF UK Praha, Department of Computer Science and Engineering FEL ČVUT Praha, and Working group on Computer Science and Society of Czech Society for Cybernetics and Informatics. The DATESO workshops aim for strengthening connections between these various areas of informatics, particularly this year, Sematic Web, semistructured data, social networks, and formal specifications.

The proceedings of DATESO 2013 are also available at DATESO Web site: `http://www.cs.vsb.cz/dateso/2013/` and CEUR Workshop Proceeding site: `http://www.ceur-ws.org/Vol-971/` (ISSN 1613-0073). The Program Committee selected 14 papers (7 full papers and 7 posters) from 21 submissions, based on two independent reviews.

We wish to express our sincere thanks to all the authors who submitted papers, the members of the Program Committee, who reviewed them on the basis of originality, technical quality, and presentation. We are also thankful to the Organizing Committee and Amphora Research Group (ARG, `http://www.cs.vsb.cz/arg/`) for preparation of workshop proceedings. Special thanks belong to Czech Society for Cybernetics and Informatics

April, 2013 V. Snášel, K. Richta, J. Pokorný (Eds.)

Table of Contents

Full Papers

On Estimation of the Spatial Clustering: Case Study of Epidemiological Data In Olomouc Region, Czech Republic 1
Lukáš Marek, Vít Pászto, Jiří Dvorský, Pavel Tuček

Towards a Runtime Code Update in Java 13
Marcel Hlopko, Jan Kurš, Jan Vraný

Are Shape Metrics Useful for a Geocomputation? CORINE Land-Cover Analysis Case Study 26
Vít Pászto, Lukáš Marek, Pavel Tuček

QuickXDB: A Prototype of a Native XML DBMS 36
Petr Lukáš, Radim Bača, Michal Krátký

Efficient in-memory data structures for n-grams indexing 48
Daniel Robenek, Jan Platoš, Václav Snášel

P system based model of passenger flow in public transportation systems: a case study of Prague Metro 59
Zbyněk Janoška, Jiří Dvorský

How can formalization of SOA help in finding solutions for IT systems . . . 70
Zdeněk Skřivánek, Karel Richta

Short papers

Comparative Summarization via Latent Dirichlet Allocation 80
Michal Campr, Karel Jezek

Using Retinex and SVD Algorithms for Detection of Frayed Edge in Steel Plate 87
Michal Holiš, Martin Plaček, Jiří Dvorský, Jan Martinovič, Pavel Moravec

Application of Relative Derivation Terms by Polynomial Neural Networks 98
Ladislav Zjavka

Evolution of Co-Authors Communities Formed by Terms on DBLP 109
Alisa Babskova, Pavla Dráždilová, Jan Martinovič, Václav Svatoň, Václav Snášel

A Linguistic Method into Stemming of Arabic for Data Compression 119
Hussein Soori, Jan Platoš, Václav Snášel

Searching Time Series Based On Pattern Extraction Using Dynamic Time Warping 129
Tomáš Kocyan, Jan Martinovič, Pavla Dráždilová, Kateřina Slaninová

On Updating in XML Peer-to-Peer Databases 139
Adam Šenk, Michal Valenta

Author Index 149