

David Taniar, Eric Pardede, Matthias Steinbauer, Ismail Khalil (eds.)

iiWAS2012

**The 14th International Conference on
Information Integration and Web-based
Applications & Services**

December 3 - 5, 2012
Bali, Indonesia



**Association for
Computing Machinery**

**The Association for Computing Machinery
2 Penn Plaza, Suite 701
New York, New York 10121-0701**



**Association for
Computing Machinery**

Copyright © 2012 by the Association for Computing Machinery, Inc (ACM). Permission to make digital or hard copies of portions of this work for personal or classroom use is granted without fee provided that the copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. **Copyrights for components of this work owned by others than ACM must be honored.** Abstracting with credit is permitted. To copy otherwise, to republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee. Request permission to republish from: Publications Dept. ACM, Inc. Fax +1-212-869-0481 or E-mail permissions@acm.org.

For other copying of articles that carry a code at the bottom of the first or last page, copying is permitted provided that the per-copy fee indicated in the code is paid through the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

Notice to Past Authors of ACM-Published Articles

ACM intends to create a complete electronic archive of all articles and/or other material previously published by ACM. If you have written a work that was previously published by ACM in any journal or conference proceedings prior to 1978, or any SIG Newsletter at any time, and you do NOT want this work to appear in the ACM Digital Library, please inform permissions@acm.org, stating the title of the work, the author(s), and where and when published.

ACM ISBN: 978-1-4503-1306-3

Table of Contents

Proceedings of iiWAS2012

KEYNOTE TALKS

- 10 years Mobile Multimedia: From Motorola RAZR to iPhone 5
Gabriele Kotsis (Johannes Kepler University Linz, Austria) 1
- Evolution of Data Management Systems: From Uni-processor to Large-scale Distributed Systems
Abdelkader Hameurlain (Paul Sabatier University, France) 2
- Innovations in modelling Web Applications
Kerstin Altmanninger (Johannes Kepler University Linz, Austria) 3
- Is Security an Afterthought when Designing Apps?
Edgar Weippl (SBA Research and Vienna University of Technology, Austria) 4
- The human side of video streaming services
Antonio Liotta (Eindhoven University of Technology, The Netherlands) 5
- Information Security in Scale Free Networks
Mohamed Ridza Wahiddin (International Islamic University, Malaysia) 6

iiWAS2012 Papers

WEB-BASED APPLICATIONS (SHORT PAPERS)

- A Proposal of Storage Scheme for Supply Chain Management
Ryota Shimono, Tatsuo Tsuji, Ken Higuchi (University of Fukui, Japan) 9
- A concept of web-based energy data quality assurance and control system
Anton Tyukov (Volgograd State Technical University, Russia), Adriaan Brebels (Hogeschool Thomas More, Belgium), Maxim Shcherbakov, Valeriy Kamaev (Volgograd State Technical University, Russia) 13
- INMOTOS: Extending the ROPE-methodology
Lorenz Zechner, Peter Kieseberg, Edgar Weippl (SBA Research, Vienna, Austria) 18
- Enhanced Security in Internet Voting Protocol Using Blind Signatures and Dynamic Ballots
Ai Thao Nguyen Thi, Tran Khanh Dang (HCMC University of Technology, Vietnam) 24
- A Scrum-based approach to CMMI maturity level 2 in Web Development environments
Carlos Joaquin Torrecilla Salinas (Consejeria de Cultura. Junta de Andalucia, Spain), M.J. Escalona, M. Mejias (University of Seville, Spain) 28

SEMANTIC-BASED INFORMATION INTEGRATION (SHORT PAPERS)

Test Collection Recycling for Semantic Text Similarity <i>Faisal Rahutomo, Teruaki Kitasuka, Masayoshi Aritsugi (Kumamoto University, Japan)</i>	32
Towards a semantic-driven automatic Staging Area Design for Heterogeneous Data Integration <i>Mihaela Dinsoreanu, Lucian Braescu, Andrei Bacu (Technical University of Cluj-Napoca, Romania)</i>	36
Peer-to-Peer Orchestration of Web Mashups <i>Abul Ahsan Md Mahmudul Haque, Weihai Yu, Anders Andersen, Randi Karlsen (University of Tromsø, Norway)</i>	40
Failure Recovery of World-altering Composite Semantic Services - A Two Phase Approach <i>Hadi Saboohi, Sameem Abdul Kareem (University of Malaya, Malaysia)</i>	45
Government Services Integration Based on Cloud Technology <i>Mubarik Ahmad, Zainal A. Hasibuan (Universitas Indonesia, Indonesia)</i>	49
 WEB DATA AND SERVICES (SHORT PAPERS)	
XPath Fragments on XML in Columns <i>Jaroslav Pokorný (Charles University in Prague, Czech Republic)</i>	53
Towards an Information Quality Approach to Enhance Query Routing Processes <i>Crishane Freire, Bruno F. F. Souza (Federal University of Pernambuco, Brazil), Damires Souza (Federal Institute of Education, Science and Technology of Paraíba, Brazil), Maria C. M. Batista, Ana Carolina Salgado (Federal University of Pernambuco, Brazil)</i>	57
Consensus Building Analysis Using Entropy in BBS Tree <i>Ning He, Yasushi Oda, Chikara Otani, Osamu Yoshie (Waseda University, Japan)</i>	61
Imputation of Missing Values for Semi-supervised Data Using the Proximity in Random Forests <i>Tsunenori Ishioka (The National Center for University Entrance Examinations, Japan)</i>	65
Makhtota+: Enhancing Old Arabic Manuscripts with Linked Data <i>Nora I. Al-Rajebah, Hend S. Al-Khalifa (King Saud University, Saudi Arabia)</i>	69
A Learning System for Audio Compression <i>Mohamed Hamada (University of Aizu, Japan)</i>	74
 SEMANTIC WEB AND ONTOLOGY (SHORT PAPERS)	
Query Expansion based on Ontology for Vietnamese Query <i>Tuan Tran Anh (DakLak College of Pedagogy, Vietnam), Tuoi Phan Thi, Thanh Nguyen Chanh (HCMC University of Technology, Vietnam)</i>	78
Addressing OWL Ontology for Goal Consistency Checking <i>Imam M. Shofi (Syarif Hidayatullah State Islamic University, Indonesia), Eko K. Budiardjo (University of Indonesia, Indonesia)</i>	82
Ontology-Based Integration of Clinical Documents <i>Juha Puustjärvi (University of Helsinki, Finland), Leena Puustjärvi (The Pharmacy of Kaivopuisto, Finland)</i>	88

A Generic Negotiation and Re-Negotiation Framework for Consumer-Provider Contracting of Web Services <i>Werner Mach, Erich Schikuta (University of Vienna, Austria)</i>	94
Revising Word Lattice using Support Vector Machine for Chinese Word Segmentation <i>Ming Zhong, Sheng Wang (Wuhan University, China), Ming Wu (Zhongnan University of Economics and Law, China)</i>	98
A Context-Related Vocabulary Trainer in the Integrated Intelligent Computer-Assisted Language Learning (iiCALL) Environment <i>Harald Wahl (University of Applied Sciences Technikum Wien, Austria), Werner Winiwarter (University of Vienna, Austria)</i>	102
Feature Words that Classify Problem Sentence in Scientific Article <i>Toshihiko Sakai, Sachio Hirokawa (Kyushu University, Japan)</i>	106
Personalization in Tag Ontology Learning for Recommendation Making <i>Endang Djuana, Yue Xu, Yuefeng Li (Queensland University of Technology, Australia), Clive Cox (Rumble Labs, Rumble Ltd., UK)</i>	114
Using the mOSAICs Semantic Engine to Design and Develop Civil Engineering Cloud Applications <i>Giuseppina Cretella, Beniamino Di Martino (Second University of Naples, Italy), Vlado Stankovski (University of Ljubljana, Slovenia)</i>	124
Design of an Ontology for Humin Substances <i>Pavel Tyl, Roman Špánek (Technical University of Liberec, Czech Republic), Martin Řimnác, Július Stuller (Czech Academy of Sciences, Czech Republic)</i>	133

USABILITY FACTORS ON APPLICATIONS (SHORT PAPERS)

Extracting Lack of Information on Wikipedia by Comparing Multilingual Articles <i>Yuya Fujiwara (Konan University, Japan), Yu Suzuki (Nagoya University, Japan), Yukio Konishi, Akiyo Nadamoto (Konan University, Japan)</i>	141
The UITK: Towards the designing a ubiquitous soft keyboard for disabled people <i>Tuan Nguyen, Duc-Anh Le, Thanh-Vinh Dang, Tuan-Anh Nguyen (University of Information Technology, Vietnam)</i>	145
A concept identification method for Vietnamese concept-based information retrieval system <i>Tuyen Thi-Thanh Do (UIT, VNU-HCM, Vietnam)</i>	149
Using Graph Theory to Re-verify the small world theory in an online social network Word <i>Eman Yasser Daraghmi, Shyan Ming Yuan (NCTU, Taiwan)</i>	153
An Initial Comparative Study of Arabic Speech Synthesis Engines in iOS and Android <i>Nora B. Al-Saud, Hend S. Al-Khalifa (King Saud University, Saudi Arabia)</i>	157
Exploring the problems of Sentiment Analysis in Informal Arabic <i>Lamya Albraheem, Hend S. Al-Khalifa (King Saud University, Saudi Arabia)</i>	161

MODELLING AND DEVELOPMENT OF WEB SERVICES AND APPLICATIONS

Developing a Hybrid System for Sand and Dust Storm Detection using Satellite Imaging and WSNs <i>Muhammad Akhlaq, Tarek R. Sheltami (King Fahd University of Petroleum and Minerals), Elhadi M. Shakshuki (Acadia University, Canada)</i>	165
The Dicode Workbench: A Flexible Framework for the Integration of Information and Web Services <i>Guillermo de la Calle, Eduardo Alonso-Martínez (Universidad Politécnica de Madrid, Spain), Manolis Tzagarakis, Nikos Karacapilidis (University of Patras, Greece)</i>	172
A Digital Storytelling Tool for Arab Children <i>Zahra Al-Mousawi, Asmaa Alsumait (Kuwait University, Kuwait)</i>	182
Using Information Quality for the Identification of Relevant Web Data Sources: A Proposal <i>Bernadette Farias Lóscio, Maria C. M. Batista (Federal Rural University of Pernambuco, Brazil), Damires Souza (Federal Institute of Education, Science and Technology of Paraíba, Brazil), Ana Carolina Salgado (Federal University of Pernambuco, Brazil)</i>	192
Model Matching for Web Services on Context Dependencies <i>Georgia M. Kapitsaki, Achilleas P. Achilleos (University of Cyprus, Cyprus)</i>	201
Adoption of the Cloud Business Model in Indonesia: Triggers, Benefits, and Challenges <i>Ivonne Sartika Mangula (Universiteit Utrecht, The Netherlands), Inge van de Weerd (VU University Amsterdam, The Netherlands), Sjaak Brinkkemper (Universiteit Utrecht, The Netherlands)</i>	210
Time-dependent Genre Recognition by means of Instantaneous Frequency Spectrum based on Hilbert-Huang Transform <i>Tatiana Endrjukaite, Naoko Kosugi (NTT Communication Science Labs., Japan)</i>	220
Modelling adaptations requirements in Web workflows <i>M. Urbieto, G. Rossi, S. Gordillo (LIFIA, UNLP, Argentina), W. Retschitzegger, W. Schwinger (Johannes Kepler University Linz, Austria), E. Robles Luna (LIFIA, UNLP, Argentina)</i>	228
A Pragmatic Approach for Sustainable Development Based on Semantic Web Services <i>Disraelly Hander G.Pereira, Carlos Fran F.Dantas, Claudia M.F.A.Ribeiro (State University of RN - UERN, Brazil)</i>	238
Direct data transfer between SOAP web services in Orchestration <i>Sattanathan Subramanian (Uni Computing, Uni Research, Norway), Paweł Sztromwasser (University of Bergen, Norway), Pål Puntervoll, Kjell Petersen (Uni Computing, Uni Research, Norway)</i>	247

PRIVACY AND SECURITY ISSUES

Context-Awareness: Exploring the Imperative Shared Context of Security and Ubiquitous Computing <i>M. Fahim Ferdous Khan, Ken Sakamura (The University of Tokyo, Japan)</i>	257
Digital Forensics for Enterprise Rights Management Systems <i>Sebastian Schrittwieser (Vienna University of Technology, Austria), Peter Kieseberg, Edgar Weippl (SBA Research, Austria)</i>	267

Pad and Chaff: Secure Approximate String Matching in Private Record Linkage <i>Aaron D. Schroeder (Virginia Tech, USA)</i>	277
Anonymous Spatial Query on Non-uniform Data <i>Shyue-Liang Wang, Chung-Yi Chen, I-Hsien Ting, Tzung-Pei Hong (National University of Kaohsiung, Taiwan ROC)</i>	282
Dynamic Time Warping in Hardware <i>Kin Fun Li, James Shueyen Tai (University of Victoria, Canada)</i>	288

ONLINE SOCIAL NETWORKS

Style-based Similarity Search for Office XML Documents <i>Yousuke Watanabe, Hidetaka Kamigaito, Haruo Yokota (Tokyo Institute of Technology, Japan)</i>	294
Toward a Taxonomy of Concepts using Web Documents Structure <i>Rim Zarrad, Narjes Doggaz, Ezzeddine Zagrouba (University of Tunis El Manar, Tunisia)</i>	303
Fast and Incremental Indexing in Effective and Efficient XML Element Retrieval Systems <i>Atsushi Keyaki, Jun Miyazaki (Nara Institute of Science and Technology, Japan), Kenji Hatano (Doshisha University, Japan), Goshiro Yamamoto, Takafumi Taketomi, Hirokazu Kato (Nara Institute of Science and Technology, Japan)</i>	313
Towards Big Linked Data: A Large-scale, Distributed Semantic Data Storage <i>Bo Hu, Nuno Carvalho, Loredana Laera, Takahide Matsutsuka (Fujitsu Laboratories of Europe, UK)</i>	323
NDT-Merge: A future tool for conciliating Software Requirements in MDE Environments <i>J. A. García-García, E. Ravel (University of Seville, Spain), M. Urbieta (LIFIA, UNLP, Argentina), M.J. Escalona (University of Seville, Spain), G. Rossi (LIFIA, UNLP, Argentina)</i>	333

WEB DATA STORAGE AND MANAGEMENT

Social Networks: The Role of Users' Privacy Concerns <i>Laura Becker, Key Pousttchi (University of Augsburg, Germany)</i>	343
Automated Twitter Data Collecting Tool and Case Study with Rule-based Analysis <i>Changhyun Byun, Hyeoncheol Lee, Yanggon Kim, Kwangmi Ko Kim (Towson University, USA)</i>	352
Extracting Tip Information from Social Media <i>Yuki Hattori, Akiyo Nadamoto (Konan University, Japan)</i>	361
Community Building Based on Semantic Time Series <i>Bojan Božić (Austrian Institute of Technology, Austria), Werner Winiwarter (University of Vienna, Austria)</i>	369

PROCESSING AND MINING WEB DOCUMENTS

Document Classification based on Web Search Hit Counts <i>Masaya Kaneko, Shusuke Okamoto, Masaki Kohana, Uou Inayoshi (Seikei University, Japan)</i>	379
---	-----

A Study of Opinion Mining and Visualization of Hotel Reviews <i>Eivind Bjørkelund, Thomas H. Burnett, Kjetil Nøvåg (Norwegian University of Science and Technology, Norway)</i>	385
Size Estimation of Non-Cooperative Data Collections <i>Mohammadreza Khelghati, Djoerd Hiemstra, Maurice van Keulen (University of Twente, The Netherlands)</i>	395
A Data Analytics Application Assessing Pavement Deflection Factors for a Road Network <i>Richi Nayak, Rakesh Rawat (Queensland University of Technology, Australia), Justin Weligamage (Department of Transport and Main Roads, Queensland, Australia)</i>	403
Various Approaches to Text Representation for Named Entity Disambiguation <i>Ivo Lašek, Peter Vojtás (Charles University in Prague, Czech Republic)</i>	412