Lecture Notes in Computer Science

7529

Commenced Publication in 1973
Founding and Former Series Editors:
Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

Editorial Board

David Hutchison

Lancaster University, UK

Takeo Kanade

Carnegie Mellon University, Pittsburgh, PA, USA

Josef Kittler

University of Surrey, Guildford, UK

Jon M. Kleinberg

Cornell University, Ithaca, NY, USA

Alfred Kobsa

University of California, Irvine, CA, USA

Friedemann Mattern

ETH Zurich, Switzerland

John C. Mitchell

Stanford University, CA, USA

Moni Naor

Weizmann Institute of Science, Rehovot, Israel

Oscar Nierstrasz

University of Bern, Switzerland

C. Pandu Rangan

Indian Institute of Technology, Madras, India

Bernhard Steffen

TU Dortmund University, Germany

Madhu Sudan

Microsoft Research, Cambridge, MA, USA

Demetri Terzopoulos

University of California, Los Angeles, CA, USA

Doug Tygar

University of California, Berkeley, CA, USA

Gerhard Weikum

Max Planck Institute for Informatics, Saarbruecken, Germany

Fu Lee Wang Jingsheng Lei Zhiguo Gong Xiangfeng Luo (Eds.)

Web Information Systems and Mining

International Conference, WISM 2012 Chengdu, China, October 26-28, 2012 Proceedings



Volume Editors

Fu Lee Wang

Caritas Institute of Higher Education, Department of Business Administration 18 Chui Ling Road, Tseung Kwan O, Hong Kong, China

E-mail: pwang@cihe.edu.hk

Jingsheng Lei

Shanghai University of Electric Power School of Computer and Information Engineering Shanghai 200090, China

E-mail: jshlei@shiep.edu.cn

Zhiguo Gong

University of Macau, Department of Computer and Information Science

Av. Padre Tomás Pereira, Taipa, Macau, China

E-mail: fstzgg@umac.mo

Xiangfeng Luo

Shanghai University, School of Computer

Shanghai 200444, China E-mail: luoxf@shu.edu.cn

ISSN 0302-9743 ISBN 978-3-642-33468-9 DOI 10.1007/978-3-642-33469-6

e-ISSN 1611-3349 e-ISBN 978-3-642-33469-6

Springer Heidelberg Dordrecht London New York

Library of Congress Control Number: 2012946752

CR Subject Classification (1998): H.4.1-3, H.3.4-5, H.5.3, H.2.7-8, K.4.4, K.6.4, E.3, I.2.6, C.2.0, D.4.6, C.2.4

LNCS Sublibrary: SL 3 – Information Systems and Application, incl. Internet/Web and HCI

© Springer-Verlag Berlin Heidelberg 2012

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, re-use of illustrations, recitation, broadcasting, reproduction on microfilms or in any other way, and storage in data banks. Duplication of this publication or parts thereof is permitted only under the provisions of the German Copyright Law of September 9, 1965, in its current version, and permission for use must always be obtained from Springer. Violations are liable to prosecution under the German Copyright Law.

The use of general descriptive names, registered names, trademarks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

Preface

The 2012 International Conference on Web Information Systems and Mining (WISM 2012) was held during October 26–28, 2012 in Chengdu, China. WISM 2012 received 418 submissions from 10 countries and regions. After rigorous reviews, 87 high-quality papers were selected for publication in the WISM 2012 proceedings. The acceptance rate was 21%.

The aim of WISM 2012 was to bring together researchers working in many different areas of web information systems and web mining to exchange new ideas and promote international collaboration. In addition to the large number of submitted papers and invited sessions, there were several internationally well-known keynote speakers.

On behalf of the Organizing Committee, we thank Xihua University and Leshan Normal University for its sponsorship and logistics support. We also thank the members of the Organizing Committee and the Program Committee for their hard work. We are very grateful to the keynote speakers, session chairs, reviewers, and student helpers. Last but not least, we thank all the authors and participants for their great contributions that made this conference possible.

October 2012

Fu Lee Wang Jingsheng Lei Zhiguo Gong Xiangfeng Luo

Organization

Organizing Committee

General Co-chairs

WeiGuo Sun Xihua University, China

Qing Li City University of Hong Kong, Hong Kong,

China

Program Committee Co-chairs

Zhiguo Gong University of Macau, Macau, China

Xiangfeng Luo Shanghai University, China

Steering Committee Chair

Jingsheng Lei Shanghai University of Electric Power, China

Local Arrangements Co-chairs

Yajun Du Xihua University, China MingXing He Xihua University, China

Jin Pei LeShan Normal University, China

Proceedings Co-chairs

Fu Lee Wang Caritas Institute of Higher Education,

Hong Kong, China

Ting Jin Fudan University, China

Sponsorship Chair

Zhiyu Zhou Zhejiang Sci-Tech University, China

Program Committee

Ladjel Bellatreche ENSMA - Poitiers University, France

Sourav Bhowmick Nanyang Technological University, Singapore Stephane Bressan National University of Singapore, Singapore

Erik Buchmann University of Karlsruhe, Germany Jinli Cao La Trobe University, Australia

Jian Cao Shanghai Jiao Tong University, China

VIII Organization

Badrish Chandramouli Akmal Chaudhri Qiming Chen Lei Chen

Jinjun Chen

Hong Cheng Reynold Cheng

Bin Cui

Alfredo Cuzzocrea Wanchun Dou

Xiaoyong Du

Ling Feng Cheng Fu

Gabriel Fung
Byron Gao
Yunjun Gao
Bin Gao

Anandha Gopalan Stephane Grumbach

Ming Hua Ela Hunt

Renato Iannella

Yan Jia

Yu-Kwong Ricky Yoon Joon Lee Carson Leung

Lily Li Tao Li

Wenxin Liang

Chao Liu Qing Liu Jie Liu

JianXun Liu

Peng Liu

Jiaheng Lu Weiyi Meng Miyuki Nakano Wilfred Ng

Junfeng Pan

Microsoft Research, USA City University of London, UK Hewlett-Packard Laboratories, USA

Hong Kong University of Science and

Technology, China

Swinburne University of Technology, Australia The Chinese University of Hong Kong, China Hong Kong Polytechnic University, China

Peking University, China University of Calabria, Italy Nanjing University, China

Renmin University of China, China

Tsinghua University, China

Nanyang Technological University, Singapore The University of Queensland, Australia

University of Wisconsin, USA Zhejiang University, China Microsoft Research, China Imperial College, UK

INRIA, France

Simon Fraser University, Canada University of Strathclyde, Glasgow

National ICT, Australia

National University of Defence Technology,

China

Colorado State University, USA

KAIST, Korea

The University of Manitoba, Canada

CSIRO, Australia

Florida International University, USA Dalian University of Technology, China

Microsoft, USA CSIRO, Australia

Chinese Academy of Sciences, China

Hunan University of Science and Technology,

China

PLA University of Science and Technology,

China

University of California, Irvine, USA

Binghamton University, USA University of Tokyo, Japan

Hong Kong University of Science and

Technology, China

Google, USA

Zhiyong Peng Wuhan University, China

Xuan-Hieu Phan University of New South Wales (UNSW),

Australia

Tieyun Qian Wuhan University, China

Kaijun Ren National University of Defense Technology,

China

Dou Shen Microsoft, USA

Peter Stanchev Kettering University, USA

Xiaoping Su Chinese Academy of Sciences, China

Jie Tang Tsinghua University, China

Zhaohui Tang Microsoft, USA

Yicheng Tu University of South Florida, USA Junhu Wang Griffith University, Australia

Hua Wang University of Southern Queensland, Australia

Guoren Wang Northeastern University, USA

Lizhe Wang Research Center Karlsruhe, Germany

Jianshu Weng Singapore Management University, Singapore

Raymond Wong Hong Kong University of Science and

Technology, China

Jemma Wu CSIRO, Australia

Jitian Xiao Edith Cowan University, Australia

Junyi Xie Oracle Corp., USA

Wei Xiong National University of Defence Technology,

China

Hui Xiong Rutgers University, USA

Jun Yan University of Wollongon, Australia Xiaochun Yang Northeastern University, China Jian Yang Macquarie University, Australia Jian Yin Sun Yat-Sen University, China

Qing Zhang CSIRO, Australia

Shichao Zhang University of Technology, Australia Yanchang Zhao University of Technology, Australia

Sheng Zhong State University of New York at Buffalo, USA

Aoying Zhou East China Normal University, China Xingquan Zhu Florida Atlantic University, USA

Table of Contents

Applications of web information systems	
Study on the Design of Automatic Cotton Bale Inspecting Management System	1
The Smallest Randić Index for Trees	9
Design of Meridian and Acupoints Compatibility Analysis System Jingchang Pan and Guangwen Wang	15
Invariant Subspaces for Operators with Thick Spectra	22
Voronoi Feature Selection Model Considering Variable-Scale Map's Balance and Legibility	26
A Code Dissemination Protocol of Low Energy Consumption	36
Dynamic Spectrum Analysis of High-Speed Train Passenger Compartment Luggage Rack Noise	44
Port-Based Composable Modeling and Simulation for Safety Critical System Testbed	51
Risk Assessment Method of Radio Block Center in Fuzzy Uncertain Environment	59
Learning Research in Knowledge Transfer	67
A Post-filtering Technique for Enhancing Acoustic Echo Cancelation System	73
Packet Dropping Schemes and Quality Evaluation for H.264 Videos at High Packet Loss Rates	81

A Blocked Statistics Method Based on Directional Derivative Junli Li, Chengxi Chu, Gang Li, and Yang Lou	90
Study on Cooperative Game Model of Talent Training through School-Enterprise Coalition	98
Applications of Web Mining	
Research on Internet Public Opinion Detection System Based on Domain Ontology	105
A Security Analysis Model Based on Artificial Neural Network	111
Social Network Analyses on Knowledge Diffusion of China's Management Science	117
A Parallel Association-Rule Mining Algorithm	125
An Algorithm of Parallel Programming Design Based on Problem Domain Model	130
E-government and E-commerce	
Metadata-Aware Small Files Storage Architecture on Hadoop	136
Research on the Isomorphism of the Electronic-Government and Electronic-Commerce in Support System	144
On the Deployment of Wireless Sensor Networks with Regular Topology Patterns	150
An Empirical Study on the Relationship among Trust and the Risky and Non-Risky Components of E-Commerce	159
Process Modeling and Reengineering in the Integration Stage of Electronic Government	167

Nurbol Luktarhan, Xue Jia, Liang Hu, and Nannan Xie

275

Security Analysis of a Secure and Practical Dynamic Identity-Based Remote User Authentication Scheme	283
Formal Construction of Secure Information Transmission in Office Automation System	291
A Novel CBCD Scheme Based on Local Features Category Jie Hou, Baolong Guo, and Jinfu Wu	299
Research and Improvement on Association Rule Algorithm Based on FP-Growth	306
Encrypted Remote User Authentication Scheme by Using Smart	
Card	314
Intelligent Networked Systems	
A Web Visualization System of Cyberinfrastructure Resources Yuwei Wang, Kaichao Wu, Danhuai Guo, Wenting Xiang, and Baoping Yan	324
A Novel Clustering Mechanism Based on Image-Oriented Correlation Coefficient for Wireless Multimedia Sensor Networks	333
Design of Underground Miner Positioning System Based on ZigBee	
Technology	342
Management Information Systems	
Metadata Management of Context Resources in Context-Aware Middleware System	350
Research on Scientific Data Sharing Platform of Hydrology and Water Resources Based on Service Composition	358
Study on the Scheme of Tianjin Area E-commerce Platform Construction	366

Table of Contents	Х
Research on Chinese Hydrological Data Quality Management Yufeng Yu, Yuelong Zhu, Jianxin Zhang, and Jingjin Jiang	3'
Using IoT Technologies to Resolve the Food Safety Problem – An Analysis Based on Chinese Food Standards	38
Towards Better Cross-Cloud Data Integration: Using P2P and ETL Together	39
Design of Intelligent Maintenance Decision-Making System for Fixed Equipment in Petrochemical Plants	40
Dimensional Modeling for Landslide Monitoring Data Warehouse	4
A New Fuzzy Risk Evaluation Method for Uncertain Network Public Sentiment Emergency	4:
Service Lifecycle Management in Distributed JBI Environment Ben Wang, Xingshe Zhou, Gang Yang, and Yunfeng Lou	4
Mobile Computing	
Graded BDI Models for Agent Architectures Based on Lukasiewicz Logic and Propositional Dynamic Logic	4
A Polymorphic Type System with Progress for Binary Sessions Zhenguo Yang, Farong Zhong, and Jinfang Zhang	4
Energy Model of SARA and Its Performance Analysis	4
Semantic Web and Ontologies	
Data Profiling for Semantic Web Data	4
Checking and Handling Inconsistency of DBpedia	4
Conceptual Representing of Documents and Query Expansion Based	1
on Ontology	4

Web Information Extraction

Robust Web Data Extraction: A Novel Approach Based on Minimum Cost Script Edit Model	497
Rule-Based Text Mining of Chinese Herbal Medicines with Patterns in Traditional Chinese Medicine for Chronic Obstructive Pulmonary Disease	510
Junping Zhan, Guang Zheng, Miao Jiang, Cheng Lu, Hongtao Guo, and Aiping Lu	
Fault Forecast of Electronic Equipment Based on ε – SVR Lina Liu, Jihong Shen, and Hui Zhao	521
Analysis and Design of Internet Monitoring System on Public Opinion Based on Cloud Computing and NLP Hui Wen, Peiguang Lin, and Yaobin Hu	528
Using Similes to Extract Basic Sentiments across Languages	536
Automatic Summarization for Chinese Text Using Affinity Propagation Clustering and Latent Semantic Analysis	543
A Webpage Deletion Algorithm Based on Hierarchical Filtering	551
Research in Keyword Extraction	558
Tuple Refinement Method Based on Relationship Keyword Extension Xiaoling Yang, Jing Yang, and Chao Chen	564
Web Intelligence	
An Agent Based Intelligent Meta Search Engine	572
A Novel Image Annotation Feedback Model Based on Internet-Search	580
The Design and Application of an Ancient Porcelain Online Identification Analysis System	589

Table of Contents	XVII
A Self-adaptive Strategy for Web Crawler in In-Site Search	595
A Novel Shark-Search Algorithm for Theme Crawler	603
A Framework of Online Proxy-Based Web Prefetching	610
Mapping the Intellectual Structure by Co-word: A Case of International Management Science	621
Study on Multi-sensor Information Fusion Technology in the Dynamic Monitoring of Coal Mine Roof	629
Detecting Hot Topics in Chinese Microblog Streams Based on Frequent Patterns Mining	637
KACTL: Knowware Based Automated Construction of a Treelike Library from Web Documents	645
Web Interfaces and Applications	
Associating Labels and Elements of Deep Web Query Interface Based on DOM	657
Design and Implementation of the Online Shopping System	664
System Development of Residence Property Management Based on WEB	671
XML and Semi-structured Data	
An Intelligent Metadata Extraction Approach Based on Programming by Demonstration	678
OF-NEDL: An OpenFlow Networking Experiment Description Language Based on XML	686

XVIII Table of Contents

Structural Similarity Evaluation of XML Documents Based on Basic	
Statistics	698
Chen-Ying Wang, Xiao-Jun Wu, Jia Li, and Yi Ge	
An XML Data Query Method Based on Structure-Encoded	706
Author Index	715