

Xiaofang Zhou Yanchun Zhang
Maria E. Orlowska (Eds.)

Web Technologies and Applications

5th Asia-Pacific Web Conference, APWeb 2003
Xian, China, April 23-25, 2003
Proceedings



Springer

Table of Contents

Keynote Papers

Trends in Mobile Multimedia and Networks	1
<i>Minoru Etoh</i>	
DB-Enabled Peers for Managing Distributed Data	10
<i>Beng Chin Ooi, Yanfeng Shu, Kian-Lee Tan</i>	

Session 1: XML and Database Design

Functional Dependencies for XML	22
<i>Millist W. Vincent, Jixue Liu</i>	
On Transformation to Redundancy Free XML Schema from Relational Database Schema	35
<i>Chengfei Liu, Jixue Liu, Minyi Guo</i>	
Constraint Preserving XML Updating	47
<i>Kun Yue, Zhengchuan Xu, Zhimao Guo, Aoying Zhou</i>	

Session 2: Efficient XML Data Management

ENAXS: Efficient Native XML Storage System	59
<i>Khin-Myo Win, Wee-Keong Ng, Ee-Peng Lim</i>	
A Fast Index for XML Document Version Management	71
<i>Nicole Lam, Raymond K. Wong</i>	
A Commit Scheduler for XML Databases	83
<i>Stijn Dekeyser, Jan Hidders</i>	
An Efficient Path Index for Querying Semi-structured Data	89
<i>Michael Barg, Raymond K. Wong, Franky Lam</i>	
Integrating Path Index with Value Index for XML Data	95
<i>Jing Wang, Xiaofeng Meng, Shan Wang</i>	
Automatic Layout Generation with XML Wrapping	101
<i>Istvan Beszteri, Petri Vuorimaa</i>	

Session 3: XML Transformation

Efficient Evaluation in XML to XML Transformations	108
<i>Qing Wang, Junmei Zhou, Hongwei Wu, Yizhong Wu, Yang Yuan, Aoying Zhou</i>	

Formalizing Semantics of XSLT Using Object-Z	120
<i>Hong Li Yang, Jin Song Dong, Ke Gang Hao, Jun Gang Han</i>	
An XML-Based Context-Aware Transformation Framework for Mobile Execution Environments	132
<i>Tzu-Han Kao, Sheng-Po Shen, Shyan-Ming Yuan, Po-Wen Cheng</i>	
FIXT: A Flexible Index for XML Transformation	144
<i>Jianchang Xiao, Qing Wang, Min Li, Aoying Zhou</i>	
Formal Foundation of Web Navigation Stereotypes and Their Transformation into XML	150
<i>Georg Sonneck, Thomas Mueck</i>	
Session 4: Web Mining	
Mining “Hidden Phrase” Definitions from the Web	156
<i>Hung. V. Nguyen, P. Velamuru, D. Kolippakkam, H. Davulcu, H. Liu, M. Ates</i>	
Extending a Web Browser with Client-Side Mining	166
<i>Hongjun Lu, Qiong Luo, Yeuk Kiu Shun</i>	
Real-Time Segmenting Time Series Data	178
<i>Aiguo Li, Shengping He, Zheng Qin</i>	
An Efficient Data Mining Algorithm for Discovering Web Access Patterns	187
<i>Show-Jane Yen, Yue-Shi Lee</i>	
Applying Data Mining Techniques to Analyze Alert Data	193
<i>Moonsun Shin, Hosung Moon, Keun Ho Ryu, KiYoung Kim, JinOh Kim</i>	
Session 5: Web Clustering, Ranking and Profiling	
Web Page Clustering: A Hyperlink-Based Similarity and Matrix-Based Hierarchical Algorithms	201
<i>Jingyu Hou, Yanchun Zhang, Jinli Cao</i>	
A Framework for Decentralized Ranking in Web Information Retrieval ...	213
<i>Karl Aberer, Jie Wu</i>	
A Web User Profiling Approach	227
<i>Younes Hafri, Chabane Djeraba, Peter Stanchev, Bruno Bachimont</i>	
A New Algorithm for Performing Ratings-Based Collaborative Filtering..	239
<i>Fengzhao Yang, Yangyong Zhu, Bole Shi</i>	

Session 6: Payment and Security

Architecture for a Component-Based, Plug-In Micro-payment System	251
<i>Xiaoling Dai, John Grundy</i>	
Verifying the Purchase Request in SET Protocol	263
<i>Qingfeng Chen, Chengqi Zhang, Shichao Zhang, Chunsheng Li</i>	
Self-organizing Coefficient for Semi-blind Watermarking	275
<i>Sung-kwan Je, Chang-jin Seo, Jin-young Lee, Eui-young Cha</i>	
Applying RBAC Providing Restricted Permission Inheritance to a Corporate Web Environment	287
<i>YongHoon Yi, MyongJae Kim, YoungLok Lee, HyungHyo Lee, BongNam Noh</i>	
eSignature Verification on Web Using Statistical Mining Approach	293
<i>Joseph Fong, San Kuen Cheung, Irene Kwan</i>	

Session 7: Web Application Architectures

Deriving Architectures of Web-Based Applications	301
<i>Weiquan Zhao, David Kearney</i>	
A New Agent Framework with Behavior Delegation Using SOAP	313
<i>Ki-Hwa Lee, Eui-Hyun Jung, Hang-Bong Kang, Yong-Jin Park</i>	
Improving the Web Presentation Layer Architecture	324
<i>Dirk Draheim, Elfriede Fehr, Gerald Weber</i>	
An Event Based Approach to Web Service Design and Interaction	333
<i>Wilfried Lemahieu, Monique Snoeck, Cindy Michiels, Frank Goethals</i>	
Active Document Framework ADF: Concept and Method	341
<i>Hai Zhuge</i>	

Session 8: Advanced Applications

Goal-Oriented Analysis and Agent-Based Design of Agile Supply Chain . .	347
<i>Dong Yang, Shen-sheng Zhang</i>	
Methodologies and Mechanism Design in Group Awareness Support for Internet-Based Real-Time Distributed Collaboration	357
<i>Minh Hong Tran, Gitesh K. Raikundalia, Yun Yang</i>	
Statistics Based Predictive Geo-spatial Data Mining: Forest Fire Hazardous Area Mapping Application	370
<i>Jong Gyu Han, Keun Ho Ryu, Kwang Hoon Chi, Yeon Kwang Yeon</i>	

Knowledge Representation, Ontologies, and the Semantic Web	382
<i>Evimaria Terzi, Athena Vakali, Mohand-Saïd Hacid</i>	
Web Wrapper Validation	388
<i>Eng-huan Pek, Xue Li, Yaozong Liu</i>	
Session 9: Web and Multimedia	
Web-Based Image Retrieval with a Case Study	394
<i>Ying Liu, Dangling Zhang</i>	
Extracting Content Structure for Web Pages Based on Visual Representation	406
<i>Deng Cai, Shipeng Yu, Ji-Rong Wen, Wei-Ying Ma</i>	
XML Data Integration and Distribution in a Web-Based Object Video Server System	418
<i>Shermann Sze-Man Chan, Qing Li</i>	
Session 10: Network Protocols	
Genetic Algorithm-Based QoS Multicast Routing for Uncertainty in Network Parameters	430
<i>Layuan Li, Chunlin Li</i>	
Tagged Fragment Marking Scheme with Distance-Weighted Sampling for a Fast IP Traceback	442
<i>Ki Chang Kim, Jin Soo Hwang, Byung Yong Kim, Soo-Duk Kim</i>	
An Ant Algorithm Based Dynamic Routing Strategy for Mobile Agents	453
<i>Dan Wang, Ge Yu, Mingsong Lv, Baoyan Song, Derong Shen, Guoren Wang</i>	
Integration of Mobile IP and NHRP over ATM Networks	465
<i>Tae-Young Byun, Moo-Ho Cho</i>	
Session 11: Workflow Management Systems	
e.SWDL : An XML Based Workflow Definition Language for Complicated Applications in Web Environments	471
<i>Wei Ge, Baoyan Song, Derong Shen, Ge Yu</i>	
An Efficient User Task Handling Mechanism Based on Dynamic Load-Balance for Workflow Systems	483
<i>Baoyan Song, Ge Yu, Dan Wang, Derong Shen, Guoren Wang</i>	
Exception Specification and Handling in Workflow Systems	495
<i>Yoonki Song, Dongsoo Han</i>	

Key Issues and Experiences in Development of Distributed Workflow Management Systems	507
<i>Hongchen Li, Yun Yang, Meilin Shi</i>	

Session 12: Advanced Search

Intelligent Search for Distributed Information Sources Using Heterogeneous Neural Networks	513
<i>Hui Yang, Mingjie Zhang</i>	
A Localness-Filter for Searched Web Pages	525
<i>Qiang Ma, Chiyako Matsumoto, Katsumi Tanaka</i>	
DEBIZ: A Decentralized Lookup Service for E-commerce	537
<i>Zeng-De Wu, Wei-Xiong Rao, Fan-Yuan Ma</i>	
Design of B+Tree-Based Predicate Index for Efficient Event Matching ...	548
<i>Botao Wang, Wang Zhang, Masaru Kitsuregawa</i>	

Session 13: Data Allocation and Replication

Data Replication at Web Proxies in Content Distribution Network	560
<i>Xuanping Zhang, Weidong Wang, Xiaopeng Tan, Yonghu Zhu</i>	
A Hash-Based Collaborative Transcoding Proxy System	570
<i>Xiu Wu, Kian-Lee Tan</i>	
Dynamic Materialized View Management Based on Predicates	583
<i>Chi-Hon Choi, Jeffrey Xu Yu, Hongjun Lu</i>	
DPR: A Dynamic Partial Replication Protocol Based on Group Communication for a Web-Enable Database Cluster	595
<i>Chung-Ho Lee, Jae-Dong Lee, Hae-Young Bae</i>	
Author Index	607