**INTERNATIONAL SOCIETY FOR COMPUTERS AND THEIR APPLICATIONS**

**17th International Conference on Software Engineering and Data Engineering (SEDE-2008)**

June 30 – July 2, 2008
Omni Los Angeles Hotel at California Plaza
Los Angeles, California

**TECHNICAL PAPER INDEX**

### DATA ENGINEERING AND DATA MINING

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Mining Classification Using Parisot Correlation</td>
<td>William K. Perrizo and Gregory H. Wettstein (North Dakota State University, USA)</td>
<td>1</td>
</tr>
<tr>
<td>Bayesian Classification in Combinatorial Game Theory</td>
<td>David Hooks and Qin Ding (East Carolina University, USA)</td>
<td>7</td>
</tr>
<tr>
<td>Vertical Business Intelligence Classification</td>
<td>William K. Perrizo and Gregory H. Wettstein (North Dakota State University, USA)</td>
<td>13</td>
</tr>
<tr>
<td>Document Clustering using Word Sense Disambiguation</td>
<td>M. S. Mostafa, M. H. Haggag and W. H. Gomaa (Helwan University, Egypt)</td>
<td>19</td>
</tr>
<tr>
<td>Layout Analysis and Classification using Genetic Algorithm</td>
<td>Farnaz Fotrousi and Morteza Analoui (Iran University of Science and Technology, Iran)</td>
<td>25</td>
</tr>
</tbody>
</table>

### APPLICATIONS IN SOFTWARE ENGINEERING and DATA ENGINEERING

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prototype Details of the Smartphone-Based Researcher's Companion Software (RCS) Databases using Schematron</td>
<td>Brian Tackitt, Muhanna Muhanna and Sergiu Dascalu (University of Nevada, Reno, USA)</td>
<td>30</td>
</tr>
<tr>
<td>How to Measure Testing Results</td>
<td>M. Burgin (UCLA, USA) and N. Debnath (Winona State University, USA)</td>
<td>36</td>
</tr>
<tr>
<td>Data Reduction Algorithm Based on Gaussian Image Estimation</td>
<td>E. A. Zanaty, Sultan Aljahdali (TAIF University, Saudi Arabia) and Narayan Debnath (Winona State University, USA)</td>
<td>42</td>
</tr>
<tr>
<td>TouchTabs: Software Prototype for Guitar Music Composition using Touch Screens</td>
<td>Matt Whipple and Sergiu Dascalu (University of Nevada, Reno, USA)</td>
<td>49</td>
</tr>
<tr>
<td>Web Cache Adaptive Replacement Policy by LRU and LFU</td>
<td>Wenying Feng and Hua Chen (Trent University, Canada)</td>
<td>55</td>
</tr>
</tbody>
</table>
Improving Fuzzy Algorithms for Automatic Magnetic Resonance Image Segmentation
E. A. Zanaty, Sultan Aljahdali (Taif University, Saudi Arabia) and Narayan Debnath
(Winona State University, USA) ................................................................. 61

Structural Organization of Temporal Databases
M. Burgin (UCLA, USA) ............................................................................. 68

An Approach to Bengali Text Steganography
S. Changder (National Institute of Technology, India) and N. C. Debnath (Winona State University, USA) .. 74

Facility Design using Iterative Heuristic Algorithm
Rekha Bhowmik (Sam Houston State University, USA) and Ilhyun Lee (The University of Texas of the Permian Basin, USA) ......................................................... 79

MEDICAL and BUSINESS APPLICATIONS

Pattern Recognition in Medical Diagnosis, Prognosis, and Treatment
D. L. Hudson and M. E. Cohen (University of California, San Francisco, USA) ........................................ 85

Neuro-Fuzzy ICU Ventilator Patients Modeling
Abdul Wahab, Quek H. C. and Luah A. H. (Nanyang Technological University, Singapore) ................. 91

Towards Automatic Integration of the Business-Data Layers in Enterprise-Systems
M. Balaban (Ben-Gurion University of the Negev, Israel) and L. Limonad (Ben-Gurion University of the Negev, Israel and University of British Columbia, Canada) ........................................... 97

A Model for Accounting Standards and its Applications
Pierre M. Teller (University of Nice, France) ............................................................................. 103

APPLICATIONS: FEATURE EXTRACTION and NLP

Using Moments for Feature Extraction from Time Series Data
Durga Toshniwal (Indian Institute of Technology Rourkee, India) ......................................................... 109

A Multi-Dimensional Data Organization for Natural Language Processing
Waleed Faris and Kam-Hoi Cheng (University of Houston, USA) ......................................................... 115

Features Extraction for Speech Emotion
Norhaslinda Kamaruddin and Abdul Wahab (Nanyang Technological University, Singapore) ............. 120

Reducing Instrumentation Intrusion for Coverage and Reconnaissance
Dennis Edwards and Sharon Simmons (University of West Florida, USA) ................................................. 126

SOFTWARE ENGINEERING

An Example of Requirements Engineering in a Model-based Methodology for Embedded Automotive Software
Jean-Louis Boulanger and Văn Quang Dao (University of Technology of Compiègne, France) .............. 130

Checking Design Heuristics Violations for Aspect-Oriented Software and Object-Oriented Software
Mathupayas Thongmak and Pornsiri Muenchasri (Chulalongkorn University, Thailand) ...................... 138

Use of Ontologies in Software Engineering
Emdad Ahmed (Wayne State University, USA) .................................................................................... 145

gRUP- A Globalized Approach to Software Engineering
Amr El-Kadi and Omar Bahy Badreddin (The American University in Cairo, Egypt) ......................... 151
SOFTWARE AGENT and SOFTWARE MEASUREMENTS

Software Agents Oriented Approach To Warehouse Management Systems Design
Kemal Taljanovic (Archway Marketing Services, USA) and Adnan Salihbegovic (University of Sarajevo, Bosnia) ................................................................. 157

AVATARSIM: A Multi-Agent System for Emergency Evacuation Simulation
Sharad Sharma (Bowie State University, USA) .............................................................. 163

Torbit: an Open Source Flaw Measurement Tool Suite
Robert S. Fourney and Austin D. Hanson (South Dakota State University, USA) .............. 168

An Algebraic Query Method for Static Program Analysis and Measurement
Hamoun Ghanbari and Constantinos Constantinides (Concordia University, Canada) .......... 174

SOFTWARE DEVELOPMENT

RT3-TUCS: How to Build a Certifiable and Safety Critical Railway Application with UML Notation
Jean-Louis Boulanger (University of Technology of Compiegne, France) ......................... 182

Early Development of Graphical User Interface (GUI) in Agile Methodologies
Caroline Labib, Ehab Hassanein and Osman Hegazy (Cairo University, Egypt) ...................... 188

Alternative Methods in Proving Loop Termination
Tennyson X. Chen and Martin D. Meyer, RTI International, USA) .................................. 194

Applying Service Oriented Architecture on Enterprise Resource Planning Environment
Yahia Zakaria Rabie, Ehab Hassanein and Osman Hegazy (Cairo University, Egypt) ............... 198

DATA STRUCTURE, DATABASE and XML

Metrized Small World Properties Based Data Structure
V. Krylov, A. Logvinov, A. Ponomarenko (MERA Labs, Russia) and D. Ponomarev (MERA Group, Russia) ................................................................. 203

Learning Bayesian Network over Distributed Databases Using Majority-based Method
Sachin Shetty, Min Song (Old Dominion University, USA), Youjun Yang (Qingdao University, China), and Mary Mathews (Old Dominion University, USA) ......................... 209

System Entity Structure for XML Meta Data Modeling; Application to the US Climate Normals
Saehoon Cheon, Doohwan Kim (RTSync Corp., USA) and Bernard P. Zeigler (The University of Arizona, USA) ................................................................. 216

WEB SERVICES and WEB-BASED APPLICATIONS

Dynamic Selection of Web Services Using QoS Constraints in BPEL
Erdogan Dogdu and Omer Mescigil (TOBB University of Economics and Technology, Turkey) .... 222

Software Security Analysis and Assessment for the Web-Based Applications
Yong Wang, William M. Lively and Dick B. Simmons (Texas A&M University, USA) ............ 227

Web Software Traffic Characteristics and Failure Prediction Model Selection
Yong Wang, William M. Lively and Dick B. Simmons (Texas A&M University, USA) ............ 233

Design of a Three-Tiered Visual C# .NET Web Form
I.H.M. van Coppenhagen (University of South Africa, South Africa) ................................... 240
MOBILE SYSTEMS and APPLICATIONS

Energy-Efficient Processing of Spatial Alarms on Mobile Clients
Anand Murugappan and Ling Liu (Georgia Institute of Technology, USA) ................................................. 246

A Novel Architecture for Mobile Distributed Trie Hashing System
A. Bennaceur (INRIA, France), DE. Zegour and WK. Hidouci, INI, Algerie) .................................................. 252

An Extended MD-tree with Internal Leaf for Efficient Management of Moving Objects
Hiroyuki Dekihara (Hiroshima International University, Japan) and Yasuaki Nakamura (Technobits Co., Ltd., Japan) ........................................................................................................................................ 260

MULTIMEDIA and PARALLEL APPLICATIONS

Load Balancing in PIC Parallel Implementation
Abdelmageed Elsadek Abdelrazek (College of Business Administration, Saudi Arabia) ......................... 267

Domical Cooperative Caching: A Novel Caching Technique for Streaming Media in Wireless Home Networks
Shahram Ghandeharizadeh, and Shahin Shayandeh (University of Southern California, USA) .......... 274

Queueing-Theoretic Approach to Software Resource Allocation
Arash Zaryabi, Torsten Bergander, A. Ben Hamza (Concordia University, Canada) and
Nolwen Mahe (SAP Labs Canada) .................................................................................................................. 280