

2009 International Conference on Computational Science and its Applications

(ICCSA 2009)

**Seoul, Korea
29 June - 2 July 2009**



**IEEE Catalog Number: CFP0972C-PRT
ISBN: 978-1-4244-4472-4**

TABLE OF CONTENTS

INFORMATION SYSTEMS AND INFORMATION TECHNOLOGIES

Finding Frequent Structures in XML Stream Data	1
<i>Jeong Hee Hwang, Mi Sug Gu</i>	
Cyclic Entropy Optimization of Social Networks Using an Evolutionary Algorithm	7
<i>Nosayba El-Sayed, Khaled Mahdi, Maytham Safar</i>	
Contemporary Classification on Medical Data based on Non-Linear Feature Extraction	15
<i>Thannob Aribarg, Siriporn Supratid, Chidchanok Lursinsap</i>	
Proposal of Service System for Ubiquitous Learning System on Adaptive Instructional System	22
<i>Duckki Kim, Youngsong Mun</i>	
Fast Handover for Mobile IPv6 over IEEE 802.16e Networks	27
<i>Kyunghye Lee, Youngsong Mun</i>	
Performance Analysis for FMIPv6 Considering Probability of Predictive Mode Failure	32
<i>Seonggeun Ryu, Youngsong Mun</i>	
Enhanced Fast Handovers for Proxy Mobile IPv6	37
<i>Sooyeol Ryu, Misun Kim, Youngsong Mun</i>	
A Novel Cloud Market Infrastructure for Trading Service	42
<i>Biao Song, Mohammad Mehedi Hassan, Eui-Nam Huh</i>	
Process Mining Based on Specification Slicing for Dynamic Reconfiguration	49
<i>Su-Jin Baek, Jinhyang Kim, Young-Jae Song</i>	
Exploiting Path Indexes to Answer Complex Queries in Ontology Repository	54
<i>Roshan Maharjan, Young-Koo Lee, Sungyoung Lee</i>	
Fast Handover Scheme Based on Mobile Locations for IEEE 802.16e Networks	60
<i>Jinwook Park, Seungtak Oh, Jongpil Jeong, Hyunseung Choo</i>	

DATA STORAGE DEVICES AND SYSTEMS

Incremental and SQL-Based Data Grid Mining Algorithm for Mobility Prediction of Mobile Users	66
<i>U. Sakthi, R. S. Bhuvaneswaran</i>	
Design and Implementation of Networking Virtualization for Cluster File Systems	74
<i>Junghan Kim, Inhyuk Kim, Taehyoung Kim, Young Ik Eom, Hong-Yeon Kim, Youngkyun Kim</i>	
Improving Demand Paging Performance of Compressed Filesystem with NAND Flash Memory	79
<i>Sungyong Ahn, Seunghwan Hyun, Kern Koh</i>	
Selective Context Switching on Flash Memory	84
<i>Sehwan Lee, Seunghwan Hyun, Kern Koh</i>	

COMPUTER ALGEBRA SYSTEMS AND APPLICATIONS

A Study of Super Nonlinear Motion of a Simple Pendulum and its Generalization	90
<i>Haiduke Sarafian</i>	
On the Degeneracy Conditions for Tri-modular Simple K3 Singularities	97
<i>Tadashi Takahashi</i>	
Development of a Graphical User Interface for LaTeX Plotting Software KETpic	102
<i>Yasuyuki Nakamura, Setsuo Takato</i>	
Use of ImplicitPlot in Drawing Surfaces Embedded into LATEX Documents	108
<i>Setsuo Takato, Akemi Galvez Tomida, Andres Iglesias Prieto</i>	
New Matlab-Based KETpic Plug-In for High-Quality Drawing of Curves	116
<i>Akemi Galvez Tomida, Andres Iglesias Prieto, Setsuo Takato</i>	
IFS Matlab Generator: A Computer Tool for Displaying IFS Fractals	125
<i>Akemi Galvez Tomida</i>	

COMPUTATIONAL GEOMETRY AND APPLICATIONS

Triangulation of Molecular Surfaces Using an Isosurface Continuation Algorithm	136
<i>Adriano Nunes Raposo, João Antônio Queiroz, Abel João Padrão Gomes</i>	

Implicit and Parametric Representations of Three Blobs	145
<i>Damien Robillard, Lionel Garnier, Dominique Faudot</i>	
On Voronoi Diagrams for Lines in the Plane	150
<i>Gill Barequet, Kira Vyatkina</i>	
Visibility of a Moving Segment	160
<i>Mojtaba Nouri Bygi, Mohammad Ghodsi</i>	
aCN-RB-tree: Update Method for Spatio-Temporal Aggregation of Moving Object Trajectory in Ubiquitous Environment	168
<i>Dong-Wook Lee, Sung-Ha Baek, Hae-Young Bae</i>	
Simulation Analysis of Lateral Propagation Mechanism of EGF Signaling on Cell Surface	174
<i>Takashi Naka</i>	

COMPUTER GRAPHICS AND VIRTUAL REALITY

Recovering 3D Shape of Weak Textured Surfaces	180
<i>Mannan Saeed Muhammad, Husna Mutahira, Abdul Majid, Tae-Sun Choi</i>	
Shape-Sensitive Surface Reconstruction for Low-Resolution Point-Cloud Models	187
<i>Juin-Ling Tseng</i>	
A Hybrid Edge Detection Method Based on Fuzzy Set Theory and Cellular Learning Automata	197
<i>Saman Sinaie, Afshin Ghanizadeh, Emadaldin Mozafari Majd, Siti Mariyam Shamsuddin</i>	
An Automatic Non-rigid Point Matching Method for Dense 3D Face Scans	204
<i>Yongli Hu, Mingquan Zhou, Zhongke Wu</i>	
Visualization and Web Services for Studying Molecular Properties	211
<i>Alessandro Costantini, Sergio Tasso, Osvaldo Gervasi</i>	
Immersive Visualization for Integrated Process Simulation	218
<i>Philippe Cerfontaine, Thomas Beer, Torsten Kuhlen</i>	

BUSINESS INTELLIGENCE

Real-time Process Quality Control for Business Activity Monitoring	224
<i>Bokyoung Kang, Seung Kyung Lee, Yeong-Bin Min, Suk-Ho Kang, Nam Wook Cho</i>	
Improving Clinical Data Warehouse Performance via a Windowing Data Structure Architecture	230
<i>Joshua Nealon, Wenny Rahayu, Eric Pardede</i>	

HIGH-PERFORMANCE COMPUTING AND INFORMATION VISUALIZATION

Fault Tolerant Parallel FFT Using Parallel Failure Recovery	241
<i>Hongyi Fu, Xuejun Yang</i>	
Author Index	