Table of Contents

Message from DASC 2011 Chairs ................................................................. xix
DASC 2011 Organizing Committee ............................................................... xxii
DASC 2011 Program Committee ................................................................. xxiii
Message from PICom 2011 Chairs .............................................................. xxiv
PICom 2011 Organizing Committee ............................................................ xxv
Message from EmbeddedCom 2011 Chairs ................................................ xxvi
EmbeddedCom 2011 Organizing Committee ................................................ xxvii
Message from CGC 2011 Chairs ................................................................. xxviii
CGC 2011 Organizing Committee ............................................................... xxix
Message from SCA 2011 Chairs ................................................................. xxx
SCA 2011 Organizing Committee ............................................................... xxxi
Message from ACGS 2011 Program Co-chairs ........................................... xli
Message from ASS 2011 Program Co-chairs ............................................... xl
Message from WMSC 2011 Program Co-chairs ............................................ xlii
WMSC 2011 Organizing Committee ............................................................ xliii
Message from CMS 2011 Workshop Co-chairs ........................................... xliiv
CMS 2011 Organizing Committee ............................................................... xlii
Message from CTUW 2011 Program Co-chairs ........................................... I
CTUW 2011 Organizing Committee ............................................................. ii
Message from CSN 2011 Workshop Co-chairs ............................................. iii
CSN 2011 Organizing Committee ............................................................... iv
Ninth IEEE International Conference on Dependable, Autonomic and Secure Computing (DASC 2011)

Service Injection: A Threat to Self-Managed Complex Systems ................................................. 1
Per Håkon Meland

S2XS2: A Server Side Approach to Automatically Detect XSS Attacks .............................................. 7
Hossain Shahriar and Mohammad Zulkernine

Establishing Hypothesis for Recurrent System Failures from Cluster Log Files ................................ 15
Edward Chuah, Gary Lee, William-Chandra Tjhi, Shyh-Hao Kuo, Terence Hung,
John Hammond, Tommy Minyard, and James C. Browne

Long-Term CPU Load Prediction ......................................................................................... 23
Jianhuang Liang, Jian Cao, Jungang Wang, and Yuxia Xu

Application of Neural Networks to the Correction of a Stiffness Matrix by
a Static Test ..................................................................................................................... 27
Zhong Yang and Haifei Si

New Latch-Up Model for Deep Sub-micron Integrated Circuits ..................................................... 31
Pan Dong, Long Fan, Suge Yue, Hongchao Zheng, and Shougang Du

Self-Adaptive Authorization Framework for Policy Based RBAC/ABAC Models ......................... 37
Christopher Bailey, David W. Chadwick, and Rogério de Lemos

Exact and Heuristic Algorithm for Multi-constrained Optimal Path Problem .............................. 45
Qingan Fang, Jun Han, Liyong Mao, and Zhaoguo Li

A Wide-Range Edge-Combining DLL with a Charge Pump for Low Spur .................................. 52
Bin He, Tie J. Lu, Zong M. Wang, and Tie L. Zhang

Analysis of the New Latchup Model for Deep Sub-micron Integrated Circuits ............................... 56
Pan Dong, Long Fan, Suge Yue, Hongchao Zheng, and Shougang Du

A Trustful Infrastructure for the Internet of Things Based on EPOSMote ..................................... 63
Antônio Augusto Fröhlich, Rodrigo Vieira Steiner, and Leonardo Maccari Rufino

A 46MHz Biquad Gm-C High Q Bandpass Filter Design for Wireless Application ......................... 69
Chong Duan and Weimin Li

Ontology Based Modeling for Information Security Management ............................................... 73
Partha Saha, Nandan Parameswaran, Pradeep Ray, and Ambuj Mahanti

Towards Self-Awareness in Cloud Markets: A Monitoring Methodology ............................. 81
Ivan Breskovic, Christian Haas, Simon Caton, and Ivona Brandic

Intelligent Test Oracle Construction for Reactive Systems without Explicit Specifications ............. 89
Farn Wang, Li-Wei Yao, and Jung-Hsuan Wu
Workload Balancing for Highly Available Services: The Case of the N+M Redundancy Model ................................................................. 97
    A. Kanso, F. Khendek, and M. Toeroe
Reliability Implications of Register Utilization: An Empirical Study ................................................................. 105
    Paul Römer and Peter Tröger
A Natural Classification Scheme for Software Security Patterns ................................................................. 113
    Aleem Khalid Alvi and Mohammad Zulkernine
Automatic Annotation of Software Configuration Models with Service Recovery Information ................................................................. 121
    A. Kanso, F. Khendek, and M. Toeroe
A Connection-Based Signature Approach for Control Flow Error Detection ................................................................. 129
    Atef Mohamed and Mohammad Zulkernine
A Fuzzy Logic-Based Buffer Overflow Vulnerability Auditor ................................................................. 137
    Hossain Shahriar and Mohammad Zulkernine
A Bio-inspired Host-Based Multi-engine Detection System with Sequential Pattern Recognition ................................................................. 145
    Frank Jiang, Michael Frater, and Jianjun Hu
Polymorphic Malware Detection Using Hierarchical Hidden Markov Model ................................................................. 151
    Fahad Bin Muhaya, Muhammad Khurram Khan, and Yang Xiang

Ninth International Conference on Pervasive Intelligence and Computing (PICom 2011)

Personalized Searching for Web Service Using User Interests ................................................................. 156
    Rong Hu, Wanchun Dou, Xiaoqing Frank Liu, and Jianxun Liu
Using Particle Swarm Optimization to Improve the Precision and Recall of Taxonomy Extraction ................................................................. 164
    Mohammad Syafrullah and Naomie Binti Salim
A Formal Model for Advanced Physical Annotations ................................................................. 170
    Ahmad A. Alzahrani, Seng W. Loke, and Hongen Lu
Pervasive Intelligent Routing in Content Centric Delay Tolerant Networks ................................................................. 178
    Anh Dung Nguyen, Patrick Séjac, Victor Ramiro, and Michel Diaz
Protecting from Inside Attacks in Wireless Sensor Networks ................................................................. 186
    Xu Huang, Muhammad Ahmed, and Dharmendra Sharma
First Prototype of Aquatic Tool Kit: Towards Low-Cost Intelligent Larval Fish Counting in Hatcheries ................................................................. 192
    Brian C.S. Loh, Valliappan Raman, and Patrick H.H. Then
A Carrier Aggregation Based Resource Allocation Scheme for Pervasive Wireless Networks ................................................................. 196
    Fan Wu, Yuming Mao, Supeng Leng, and Xiaoyan Huang
The User-Group Based Recommendation for the Diverse Multimedia Contents in the Social Network Environments .................................................................202
Saim Shin, Se-Jin Jang, and Seok-Pil Lee

From Sensory Data to Situation Awareness: Enhanced Context Spaces Theory Approach .................................................................207
Andrey Boytsov and Arkady Zaslavsky

Mapping for Activity Recognition in the Context-Aware Systems Using Software Sensors .................................................................215
Kamran Taj Pathan, Stephan Reiff-Marganiec, and Yi Hong

Design and Implementation of P2P Reasoning System Based on Description Logic .................................................................222
Hai Wan, Yang Yu, and Jian-Tian Zheng

Recognizing Concurrent and Interleaved Activities in Social Interactions .................................................................230
Saguna, Arkady Zaslavsky, and Dipanjan Chakraborty

Intelligent Sensor Network Simulation for Battlefield Resources Management .................................................................238
H.Y. Yu and Y.L. Lu

Crowdsourcing in Mobile: A Three Stage Context Based Process .................................................................242
Ahmad Hassan Afridi

Gesture-Based Easy-Computer Interaction Using a Linear Array of Low Cost Distance Sensors .................................................................246
Guan Huang and Seng W. Loke

Ninth International Symposium on Embedded Computing (EmbeddedCom 2011)

Load-Aware Dynamic Partial Reconfiguration Implementation of Crossbar Scheduler .................................................................252
Shaobin Zhang, Tongsen Hu, Minghui Wu, Tianzhou Chen, and Zening Qu

Efficient Pattern Detection for Embedded Optical Bio-sensing System .................................................................259
Yingjie Cao, Yongxin Zhu, Guoguang Rong, Gang Cheng, and Meikang Qiu

Deriving High-Performance Real-Time Multicore Systems Based on Simulink Applications .................................................................267
Minji Cha, Kyong Hoon Kim, Chung Jae Lee, Dojun Ha, and Byoung Soo Kim

Analysis and Comparison of Two Different Implementations of MCS-51 Compatible Microcontrollers .................................................................275
Jincheng Fei, Haiyang Quan, and Dawei Yuan

Global Priority Table for Last-Level Caches .................................................................279
Baozhong Yu, Jianliang Ma, Tianzhou Chen, and Minghui Wu
Design and Implementation of a Peripheral Bus Based on a New Kind of Reconfigurable System .................................................. 286
Yimao Cai, Yuanfu Zhao, and Lidong Lan

GALS-JOP: A Java Embedded Processor for GALS Reactive Programs ................................................................. 292
Muhammad Nadeem, Morteza Biglari-Abhari, and Zoran Salcic

A Study on QoS Routing Schem for Tactical Ad Hoc Network .......................................................... 300
Taehun Kang, Hanah Kim, and Jaiyong Lee

Scheduling Instructions for Soft Errors in Register Files .............................................................. 305
Jianjun Xu, Qingping Tan, and Huiping Zhou

System Level Performance Simulation of Distributed GENESYS Applications on Multi-core Platforms ................................................ 313
Subayal Aftab Khan, Jukka Saastamoinen, Kari Tiensyrjä, and Jari Nurmi

Benchmarking Embedded Devices for Broadband Performance Testing ................................................ 321
Snehal Tangadpalliwar, Kumbesan Sandrasegaran, Malcolm Raymond, Ajanta Moitra, and Faisal Madani

An Efficient Test Design for Verification of Cache Coherence in CMPs ................................................ 328
Mamata Dalui and Biplab K. Sikdar

Impact of Inaccurate Design of Branch Predictors on Processors' Power Consumption .................................................. 335
Baisakhi Das, Gunjan Bhattacharya, Ilora Maity, and Biplab K. Sikdar

A Balanced Clustering Algorithm for Non-uniformly Deployed Sensor Networks ................................................ 343
Heewook Shin, Sangman Moh, and Ilyong Chung

Coprocessing Architecture in System-on-Programmable-Chip for Walk on the Boundary Method to Calculate Capacitance .................................................. 351
Stephen J.J. Ong and Z. Abdul Halim

International Conference on Cloud and Green Computing (CGC 2011)

An Elastic OLAP Cloud Platform .................................................. 356
Peter Brezany, Yan Zhang, Ivan Janciak, Peng Chen, and Sicen Ye

Analysis of Power-Saving Techniques over a Large Multi-use Cluster ................................................ 364
A. Stephen McGough, Clive Gerrard, Jonathan Noble, Paul Robinson, and Stuart Wheeler

An Authenticated Key Exchange Scheme for Efficient Security-Aware Scheduling of Scientific Applications in Cloud Computing ................................................ 372
Chang Liu, Xuyun Zhang, Jinjun Chen, and Chi Yang

Energy Efficient Task Allocation over Mobile Networks .................................................. 380
Carmela Comito, Deborah Falcone, Domenico Talia, and Paolo Trunfio
A Novel Cost-Effective Dynamic Data Replication Strategy for Reliability in Cloud Data Centres .................................................................496

Wenhao Li, Yun Yang, and Dong Yuan

Priority-Based Scheduling for Large-Scale Distribute Systems with Energy Awareness ...............................................................................503

Masnida Hussin, Young Choon Lee, and Albert Y. Zomaya

A Multi-objective GRASP Algorithm for Joint Optimization of Energy Consumption and Schedule Length of Precedence-Constrained Applications ..........................................................510

Johnatan E. Pecero, Pascal Bouvry, Hector J. Fraire Huacuja, and Samee U. Khan

An Upper-Bound Control Approach for Cost-Effective Privacy Protection of Intermediate Dataset Storage in Cloud ........................................518

Xuyun Zhang, Chang Liu, Jinjun Chen, and Wanchun Dou

Disrupt the Disruptor: A Theoretical Approach of Cloud Computing on IT Outsourcing Industry Disruption ......................................................526

Zhenyu Yang

Data Allocation Based on XML Query Patterns to Reduce Power Consumption ........................................................................................532

Xuehua Jiang, Yousuke Watanabe, and Haruo Yokota

Cloud Control and Management Planes for Service Provisioning ...............540

Greco Polito Silvana and Adriano Costanzo

A Weighted K-Means Clustering Based Co-scheduling Strategy towards Efficient Execution of Scientific Workflows in Collaborative Cloud Environments ........................................................................547

Kefeng Deng, Lingmei Kong, Junqiang Song, Kaijun Ren, and Dong Yuan

The Sustainability and Survivability Network Design for Next Generation Cloud Networking ........................................................................555

Bing Luo and William Liu

Identifying Contextual Properties of Software Architecture in Cloud Computing ........................................................................................561

Khaled M. Khan and Qutaibah Malluhi

The Differences and Commonalities between Green and Conventional Business Process Management ..............................................................569

Alexander Nowak, Frank Leymann, and David Schumm

A Taxonomy for Cloud Data Hosting Solutions ..........................................577

Steve Strauch, Oliver Kopp, Frank Leymann, and Tobias Unger

WSRank: A Method for Web Service Ranking in Cloud Environment .............585

Rong Hu, Wanchun Dou, Xiaoqing Frank Liu, and Jianxun Liu

Improving Energy Efficiency of LTE Networks by Applying Genetic Algorithm (GA) .....................................................................................593

Kongluan Lin
A Bio-inspired Approach to Provisioning of Virtual Resources in Federated Clouds ..................................................598
Lucio Agostinho, Guilherme Feliciano, Leonardo Olivi, Eleri Cardozo, and Eliane Guimarães

Energy Consumption Side-Channel Attack at Virtual Machines in a Cloud ..................................................605
Helmut Hlavacs, Thomas Treutner, Jean-Patrick Gelas, Laurent Lefèvre, and Anne-Cécile Orgerie

A Power-Aware Scheduling of MapReduce Applications in the Cloud ..................................................613
Ying Li, Hongli Zhang, and Kyong Hoon Kim

An Innovative Self-Adaptive Configuration Optimization System in Cloud Computing ......................................621
Jing Jiang, Jie Lu, and Guangquan Zhang