# Table of Contents

| Message from the APSCC 2011 General Conference Chairs | xii |
| Message from the APSCC 2011 Program Committee Chairs | xiii |
| APSCC 2011 Organizing Committee | xiv |
| APSCC 2011 Program Committee | xv |
| Welcome Message from the Semantics, Services and Applications Workshop Chairs (SSA 2011) | xvii |
| Semantics, Services and Applications Workshop Committee (SSA 2011) | xviii |
| Semantics, Services and Applications Reviewers (SSA 2011) | xix |

## Business Process Integration and Management

- Flexible Organization Structure-Based Access Control Model and Application .............................. 1
  Minghui Jing, Hongming Cai, and Fenglin Bu

- Applying Scrum Framework in the IT Service Support Domain ....................................................... 9
  Mohamed Shalaby and Sherif El-Kassas

- Global-Time-Offsets Based Checkpoint Selection for Dynamic Verification of Fixed-Time Constraints in Grid Workflows ................................................................. 16
  Hongda Wang, Wei Song, Jianchun Xing, and Qiliang Yang

- On Trust Management for Multimedia P2P Applications in Autonomic Networking .......................... 24
  Naima Iltaf, Abdul Ghafoor, and Mukhtar Hussain

- An Executional Framework for BPMN Using Orc ............................................................................. 29
  Nihita Goel and R.K. Shyamasundar
Impact of Embedded Software in IT on Economic Performance ................................................................. 37
  Kure Chei Lee
The Impacts of Information Technology Enabled Services on Service Innovations: A Case Study in a Publishing Company ................................................................. 41
  Yao Chin Lin, Ping Heng Tsai, and Nhu Hang Ha
Analysis of the File System and Block IO Scheduler for SSD in Performance and Energy Consumption ........................................................................................................ 48
  Sun Hui, Zeng Rui, Cheng Jin, Liu Lei, Wu Fei, and Xie Chang Sheng
A Study on the Influential Factors for Continual Usage of Mobile English Learning Applications .......................................................................................................................... 56
  Seongwon Park, Taisiya Kim, and Bong Gyou Lee
A Distributed Mobile Database Architecture .................................................................................................. 62
  Anne Marie Amja, Abdel Obaid, and Normand Seguin
RescueMe: An Indoor Mobile Augmented-Reality Evacuation System by Personalized Pedometry ...................................................................................................................... 70
  Junho Ahn and Richard Han
Cloud/Utility/Web Computing
Testing of Web Services: Tools and Experiments .......................................................................................... 78
  Tien-Dung Cao, Richard Castanet, Patrick Felix, and Gerardo Morales
FSM4WSR: A Formal Model for Verifiable Web Service Runtime ................................................................ 86
  Zhuqing Li, Dianfu Ma, Yongwang Zhao, Jing Li, and Qing Yang
Fast Development Platforms and Methods for Cloud Applications .................................................................. 94
  Shigeru Hosono, Jiafu He, Xuemei Liu, Lin Li, He Huang, and Shuichi Yoshino
A Mechanism Generating Semi-Structured RDF Metadata from Web Documents ................................................. 102
  Hsiang-Yuan Hsueh, Chun-Nan Chen, and Kun-Fu Huang
A Strong User Authentication Framework for Cloud Computing ......................................................................... 110
  Amlan Jyoti Choudhury, Pardeep Kumar, Mangal Sain, Hyotae Kim, and Hoon Jaey-Lee
A Cloud Architecture Using Smart Nodes ......................................................................................................... 116
  Balwinder Sodhi and T.V. Prabhakar
A Hybrid Approach to Placement of Tenants for Service-Based Multi-tenant SaaS Application ................................. 124
  Enfeng Yang, Yong Zhang, Lei Wu, Yulong Liu, and Shijun Liu
Exploiting Dynamic Distributed Load Balance by Neighbor-Matching on P2P Grids .................................................. 131
  Po-Jung Huang, You-Fu Yu, Kuan-Chou Lai, Ching-Hsien Hsu, and Kuan-Ching Li
Measuring and Analyzing CPU Overhead of Virtualization System .........................................................243
  Guan Tong, Hai Jin, Xia Xie, Wenzhi Cao, and Pingpeng Yuan

Mismatch Detection of Asynchronous Web Services with Timed Constraints ...........................................251
  Guang-quan Zhang, Hui-juan Shi, and Mei Rong

A Formal Specification-Based Testing Approach to Accurate Web Service Selection ..................................259
  Weikai Miao and Shaoying Liu

User-centric and QoS-Based Service Session .........................................................................................267
  Houda Alaoui Soulimani, Philippe Coude, and Noëmie Simon

Generating Quantitative Test Cases for Probabilistic Timed Web Service Composition ................................275
  Honghao Gao and Ying Li

A Tabu Search Approach for Dynamic Service Substitution in SOA Applications ....................................284
  Can Zhang, Haopeng Chen, and Jinbo Du

Integration of Telecommunication SOA and Web Services

Generating Scenarios from Web Service Choreography ........................................................................290
  Zhang Ke, Qiu Zongyan, and Yang Hongli

A Distributed Cache Based Reliable Service Execution and Recovery Approach in MANETs ..................298
  Xi Zhou, Yifan Ge, Xuxu Chen, Yinan Jing, and Weiwei Sun

An Architecture for Activation of UDDI Registry ..................................................................................306
  Masoud Arabfard and Seyed Morteza Babamir

Context-Aware Service Overlay Network: Concept and Case Study .......................................................310
  Seung-Ik Lee, Jong-Hwa Yi, and Shin-Gak Kang

ROB/CN: An Efficient Reliable 1-Hop Broadcast Using CSMA/CN in Mobile Ad Hoc Networks ...............316
  Seungjin Park and Seong-Moo Yoo

Analyses of a Novel IPTV Framework for Cable TV Operators ...............................................................321
  Xiaodong Yang

Interoperable Telepresence Services: Beyond HD-Videoconferences and Towards Telepresence ............327
  Wook Hyun and Shin Gak Kang
Mobile/Ubiquitous/Pervasive Computing

STEP-α: An Algorithmic Approach towards Trust Based Security in Pervasive Computing Environment ...........................................330
Naima Iltaf, Abdul Ghafoor, and Mukhtar Hussain

An Intelligent System for Wheelchair Users Using Data Mining and Sensor Networking Technologies ..............................................337
Ying-Hong Wu, Cheng-Chi Wang, Tzung-Shi Chen, and Chih-Yu Li

MSOA: Mobility-Aware Service Oriented Architecture ........................................345
M. Adel Serhani and Abdelghani Benharref

A Sampling-Based Data Filtering Scheme for Reducing Energy Consumption in Wireless Sensor Networks ....................................353
Seung Tae Hong, Byeong-Seok Oh, and Jae Woo Chang

Design and Analysis of a MST-Based Topology Control Scheme with PSO for Wireless Sensor Networks ................................360
Wenzhong Guo, Jong Hyuk Park, Laurence T. Yang, Athanasios V. Vasilakos, Naixue Xiong, and Guolong Chen

An Analytical Model for Interactive VANET Services ........................................368
Tai-Chi Wang and Shih Yu Chang

ADSR: Angle-Based Multi-hop Routing Strategy for Mobile Wireless Sensor Networks .........................................................373
Kwangcheol Shin, Kyungjun Kim, and Soontae Kim

Coverage Enhancing Algorithms in Directional Sensor Networks with Rotatable Sensors ..................................................377
Chiu-Kuo Liang, Chih-Hung Tsai, and Ting-Hao Chu

An Energy-Efficient Dynamic Duty-Cycle and Dynamic Schedule Assignment Scheme for WSNs ........................................384
Hsin-Hung Cho, Jian-Ming Chang, Chi-Yuan Chen, Shin-Yun Huang, Han-Chieh Chao, and Jiann-Liang Chen

Bigraphical Model of Context-Aware in Ubiquitous Computing Environments ................................................389
De-Zhen Xu, Dong Xu, and Zhou Lei

64 Channel Digital Hearing Aid Embedded Firmware ........................................395
Soon-Suck Jarng, Mano Samuel, and Je-Hyung Lee

A Study on the Human Identification Technique for Privacy Protection in Intelligent Video Surveillance System .........................402
Min-Gu Kim, Hae-Min Moon, Chulho Won, Yongwha Chung, and Sung Bum Pan

Refined Algorithm for Prime Number Generation in Embedded Security Systems ...............................................................406
Young-Sik Kim, Sujan Raj Shrestha, and Ji-Woong Jang
Monte Carlo Localization of Underwater Robot Using Internal and External Information ................................................................. 410
Nak Yong Ko, Tae Gyun Kim, and Sung Woo Noh

Elastic High Performance Applications – A Composition Framework ................................................................. 416
Tran Vu Pham, Hong-Linh Truong, and Schahram Dustdar

Service-centric Computing Models

Unifiable Preference Expressions for Pervasive Service Composition ................................................................. 424
Chun-Feng Liao, Hsueh-Hung Cheng, and Li-Chen Fu

A Design and Implementation of u-Service Framework ................................................................. 432
Jung-Sik Sung, Jongmoo Sohn, and Young-Sik Chung

A Real-Time Electroencephalogram (EEG) Based Individual Identification Interface for Mobile Security in Ubiquitous Environment ................................................................. 436
Bin Hu, Quanying Liu, Qinglin Zhao, Yanbing Qi, and Hong Peng

Message Dependency-Based Adaptation of Services ................................................................. 442
Jian-min Jiang, Shi Zhang, Ping Gong, and Zhong Hong

Bringing Socialized Semantics into Web Services Based on User-centric Collaborative Tagging and Usage Experience ................................................................. 450
Uddam Chukmol, Aicha-Nabila Benharkat, and Youssef Amghar

An Approach to Modeling and Analyzing Security Requirements of Service Composition ................................................................. 456
Guisheng Fan, Huiqun Yu, Liqiong Chen, and Dongmei Liu

A Survey of Service Identification Strategies ................................................................. 464
Simin Cai, Yan Liu, and Xiaoping Wang

Semantics, Services and Applications Workshop (SSA 2011)

Enabling Interoperability across Heterogeneous Semantic Web Services with OWL-S Based Mediation ................................................................. 471
Le Duy Ngan, Yuzhang Feng, Seungmin Rho, and Rajaraman Kanagasabai

Automatic Service Composition via Model Checking ................................................................. 477
Yuzhang Feng, Anitha Veeramani, Rajaraman Kanagasabai, and Seungmin Rho

A Plan-Based Service Composition for Work Process Agent in Ubiquitous Computing ................................................................. 483
Seheon Song and Minkoo Kim

BDI Agent-Based Mobile Assistant Service on Android Using JAM ................................................................. 488
Hyo-eun Eom, Seheon Song, and Minkoo Kim

Integrating Business Processes and Business Rules ................................................................. 493
Yujing Zhao, Dianfu Ma, Yongwang Zhao, and Zhuqing Li
A Framework for Context-Aware P2P Service .................................................................498
   ChangKyu Lee, SungHei Kim, and ShinGak Kang

A Solution for Grouping Vietnamese Synonym Feature Words in Product
Reviews .........................................................................................................................503
   Huyen-Trang Pham, Tien-Thanh Vu, Mai-Vu Tran, and Quang-Thuy Ha

Author Index ..................................................................................................................509