Message from the Workshops Chair ...........................................................................................................xiii
ESAS 2010 - The Fifth IEEE International Workshop on Engineering Semantic Agent Systems .................................................................xiv
QUORS 2010 - Fourth IEEE International Workshop on Quality Oriented Reuse of Software ........................................................................xviii
BINDIS 2010 - The Third International Workshop on Barriers towards Internet-Driven Information Services ......................................................................................................................................................xx
STPSA 2010 - The Fifth IEEE International Workshop on Security, Trust, and Privacy for Software Applications .............................................................................................................................................xxiii
IWSC 2010 - Seventh IEEE International Workshop on Software Cybernetics ........................................................................................................................xxiv
SAPSE 2010 - The Second IEEE International Workshop on Security Aspects of Process and Services Engineering ..................................................................................................................xxvi
REFS 2010 - Fourth IEEE International Workshop on Requirements Engineering for Services ...............................................................................................................................xxvii
CFSE 2010 - The Second IEEE International Workshop on Computer Forensics in Software Engineering ......................................................................................................................xxx
ME 2010 - The Second IEEE International Workshop on Middleware Engineering ..........................................................................................................................xxxi
STA 2010 - The Second IEEE International Workshop on Software Test Automation ..........................................................................................................................xxxii
ESAS 2010: The Fifth IEEE Workshop on Engineering Semantic Agent Systems Session 1

Semantic Image Retrieval Model for Sharing Experiences in Social Networks ........................................1
    Asli Apaydin, Duygu Çelik, and Atilla Elçi
Ontology-Based QoS Queuing Model for Selection of Web Services Servers ...........................................7
    Duygu Çelik and Atilla Elçi

ESAS 2010: The Fifth IEEE Workshop on Engineering Semantic Agent Systems Session 2

Modeling Cyber-Physical Systems with Semantic Agents .................................................................13
    Jing Lin, Sahra Sedigh, and Ann Miller
On Slicing Semantic Web Services ........................................................................................................19
    Chengying Mao

QUORS 2010: The Fourth IEEE International Workshop on Quality Oriented Reuse of Software Session 1: Service-Based Reuse

Towards Reusing ESB Services in Different ESB Architectures .............................................................25
    Indika Kumara and Chandana Gamage
Negotiating Service Requirements among Strategic Actors ........................................................................31
    Tuoye Xu, Tong Li, Lin Liu, and Barrett R. Bryant
Aspect-Oriented Development of PHP-Based Web Applications ........................................................37
    Shin Nakajima, Keiji Hokamura, and Naoyasu Ubayashi

QUORS 2010: The Fourth IEEE International Workshop on Quality Oriented Reuse of Software Session 2: Quality, Reuse, and Evolution

Test Sequence Generation from Combining Property Modeling and Program Slicing ................................45
    Hua Li, Yong-guang Peng, Xin-ming Ye, and Jing-yuan Yue
Software Fault Prediction Models for Web Applications ........................................................................51
    Le Truong Giang, Dongwon Kang, and Doo-Hwan Bae
The Level of Decomposition Impact on Component Fault Tolerance ....................................................57
    Atef Mohamed and Mohammad Zulkernine
QUORS 2010: The Fourth IEEE International Workshop on Quality Oriented Reuse of Software Session 3: Model-Driven Techniques

Applied MDA for Embedded Devices: Software Design and Code Generation .................................................................63
Michael Lettner and Michael Tschernuth

The Right Tool for the Right Job: Assessing Model Transformation Quality .............................................................69
M. F. van Amstel

A Model Expansion Method in Schema-Based Model Evolution ..................................................................................75
Tsung Lee and Jhih-Syan Hou

QUORS 2010: The Fourth IEEE International Workshop on Quality Oriented Reuse of Software Session 3: Optimal Components and Practice

COTS Integrations: Effort Estimation Best Practices ..............................................................................................................81
Anoop Kumar P., Sathia Narayanan, and Vijayalakshmi Mallenahalli Siddaiah

Optimizing Software Quality Assurance .....................................................................................................................87
Omar Alshathry and Helge Janicke

BINDIS 2010: The Third IEEE International Workshop on Barriers towards Internet-Driven Information Services Session 1: Service Creation

The Framework of Medical Simulation Education and Evaluation System for Supporting SaaS .................................................................93
Jia Shang, Ji-Jiang Yang, Qing Wang, and Hui Pan

A Study of Improving the Accuracy of Software Effort Estimation Using Linearly Weighted Combinations .........................................................98
Chao-Jung Hsu, Nancy Urbina Rodas, Chin-Yu Huang, and Kuan-Li Peng

BINDIS 2010: The Third IEEE International Workshop on Barriers towards Internet-Driven Information Services Session 2: Service Management

ULMS: An Accelerator for the Applications by Shifting Writing Log from Local Disk to Clouds .........................................................104
Li Zhou, Yong Zhang, and Chunxiao Xing

WS-Sim: A Web Service Simulation Toolset with Realistic Data Support .................................................................................109
Wei She, I-Ling Yen, and Bhavani Thuraisingham

Analysis of Two Watermarking Protocols Based on Commutative Encryption .................................................. 115
   Moesfa S. Mohamad and Geong Sen Poh
Access Control Contracts for Java Program Modules .................................................................................................. 121
   Carlos E. Rubio-Medrano and Yoonsik Cheon
Service Security Analysis Based on $i^*$: An Approach from the Attacker Viewpoint ........................................................ 127
   Tong Li, Lin Liu, Golnaz Elahi, Eric Yu, and Barrett R. Bryant
T-Kernel/SS: A Secure Filesystem with Access Control Protection Using Tamper-Resistant Chip .................................... 134
   Takeshi Yashiro, Masahiro Bessho, Shinsuke Kobayashi, Noboru Koshizuka, and Ken Sakamura


Privacy Preserving Distributed Learning Clustering of HealthCare Data Using Cryptography Protocols ........................................... 140
   Ahmed M. Elmisery and Huaiguo Fu
Flexible Prime Number Labeling for Resource Limited Clients .................................................................................................. 146
   Dongchan An and Seog Park
Privacy Preserving Outlier Detection Using Hierarchical Clustering Methods................................................................. 152
   Ajay Challagalla, S. S. Shivaji Dhiraj, D. V. L. N. Somayajulu, Toms Shaji Mathew, Saurav Tiwari, and Syed Sharique Ahmad


   Thoshitha T. Gamage, Bruce M. McMillin, and Thomas P. Roth
Natural Language Watermarking Based on Syntactic Displacement and Morphological Division .................................................. 164
   Mi-Young Kim, Osmar R. Zaiane, and Randy Goebel
Semantic Analysis of UML2.0 Sequence Diagram Based on Model Transformation .................................................. 170
   Meixia Zhu, Hanpin Wang, Wei Jin, Zizhen Wang, and Chunxiang Xu
Environmental Obfuscation of a Cyber Physical System - Vehicle Example .................................................. 176
   Jason Madden, Bruce McMillin, and Anik Sinha
IWSC 2010: The Seventh International Workshop on Software Cybernetics Session 2

Optimizing Requirements Elicitation with an i* and Bayesian Network
Integrated Modelling Approach .................................................................182
Haochi Wu, Lin Liu, and Wenting Ma

Delegation Pattern in Workflow System ..................................................189
Hwai-Jung Hsu and Feng-Jian Wang

Entropy-Based Measures of Heterogeneity of Software Structural Profile ...............196
Bei-Bei Yin, Ling-Zan Zhu, and Kai-Yuan Cai

IWSC 2010: The Seventh International Workshop on Software Cybernetics Session 3

Feedback Control Based Test Case Instantiation for Firewall Testing .........................202
Tugkan Tuglular and Gurcan Gercek

Using Coverage Information to Guide Test Case Selection in Adaptive
Random Testing ..........................................................................................208
Zhi Quan Zhou

A Parallel Implementation Strategy of Adaptive Testing .......................................214
Hai Hu, Chang-Hai Jiang, Feng Ye, Kai-Yuan Cai, Dazhi Huang, and Stephen S. Yau

IWSC 2010: The Seventh International Workshop on Software Cybernetics Session 4

Natural Language Processing Based Detection of Duplicate Defect Patterns ..............220
Qian Wu and Qianxiang Wang

SAPSE 2010: The Second International Workshop on Security Aspects of Process and Services Engineering

Modeling and Verification of an Automatic Train Protection System ..........................226
Xijiao Xiong, Jing Liu, Miaomiao Zhang, and Zuohua Ding

Toward Cloud-Based Key Management for Outsourced Databases ............................232
Nadia Bennani, Ernesto Damiani, and Stelvio Cimato
REFS 2010: The Fourth IEEE International Workshop on Requirements Engineering for Services Session 2: Services Requirements Identification, Analysis and Management

A Scenario Based Approach for Service Identification ..........................................................................................................................237
Suntae Kim, Minseong Kim, Vijayan Sugumaran, and Sooyong Park

Analyzing Interoperability Requirements for Adaptive Service-Based Applications: A Goal-Oriented Approach ..........................................................................................................................239
Nauman A. Qureshi, Cu D. Nguyen, and Anna Perini

Requirements and Tools for Variability Management ..........................................................................................................................245
Marco Aiello, Pavel Bulanov, and Heerko Groefsema

REFS 2010: The Fourth IEEE International Workshop on Requirements Engineering for Services Session 3: Position Statements on Requirements Engineering for Services

A Requirements Maturity Measurement Approach Based on SKLSEWiki ..............................................................................................251
Rong Peng, Qiang Ye, and Mao Ye

Stakeholders-Driven Requirements Semantics Acquisition for Networked Software Systems ........................................................................255
Bin Wen, Peng Liang, and Keqing He

Loosely-Coupled SOA Service Access Provisioning ..........................................................................................................................259
Sean Gu

Elicitation of Goals in Requirements Engineering Using Agile Methods .................................................................................................263
A. M. Sen and K. Hemachandran

A Framework for the Elicitation and Analysis of Information Technology Service Requirements and Their Alignment with Enterprise Business Goals ........................................................................269
Didar Zowghi and Zhi Jin


Dynamic Analysis for the Reconstruction of System Behavior Models ..................................................................................................273
Vasileios Koutsoumpas, Kostas Kontogiannis, and Peter Matthews

Author Identification of Software Source Code with Program Dependence Graphs ..................................................................................281
Rong Chen, Lina Hong, Chunyan Lü, and Wu Deng

XIDR: A Dynamic Framework Utilizing Cross-Layer Intrusion Detection for Effective Response Deployment ..........................................................................................................................287
Igors Svec̆, Tanmoy Sarkar, Samik Basu, and Johnny S. Wong
ME 2010: The Second IEEE International Workshop on Middleware Engineering Session 1: Middleware Architectures

Middleware Support for Mobile Social Ecosystems .................................................................293
   Alessandra Toninelli, Animesh Pathak, Amir Seyedi, Roberto Speicys Cardoso,
   and Valérie Issarny
A Middleware for Personal Smart Spaces ..............................................................................299
   Manal Al-Bahlal and Jalal Al-Muhtadi
Message Oriented Middleware Support for Mobile Ad Hoc Data Sharing ..........................305
   Hongjun Yu, Rong Chen, and Zhenjun Du

ME 2010: The Second IEEE International Workshop on Middleware Engineering Session 2: Middleware Applications

A Context-Aware Meeting Room: Mobile Interaction and Collaboration Using
Android, Java ME and Windows Mobile ...........................................................................311
   Tor-Morten Grønli, Jarle Hansen, and Gheorghita Ghinea
MiRE4OWL: Mobile Rule Engine for OWL ........................................................................317
   Taehun Kim, Insuk Park, Soon J. Hyun, and Dongman Lee

STA 2010: The Second IEEE International Workshop on Software Test Automation Session 1

Supporting Concern-Based Regression Testing and Prioritization in
a Model-Driven Environment ............................................................................................323
   Roberto S. Silva Filho, Christof J. Budnik, William M. Hasling, Monica McKenna,
   and Rajesh Subramanyan

STA 2010: The Second IEEE International Workshop on Software Test Automation Session 2: Integration & Performance Testing

Using Coupling Measure Technique and Random Iterative Algorithm
for Inter-Class Integration Test Order Problem ..................................................................329
   Zhengshan Wang, Bixin Li, Lulu Wang, Meng Wang, and Xufang Gong
Normalized Adaptive Random Test for Integration Tests ...............................................335
Performance Testing: Far from Steady State ...................................................................341
   Rajesh Mansharamani, Amol Khanapurkar, Benny Mathew,
   and Rajesh Subramanyan

An Approach to Regression Test Selection Based on Hierarchical Slicing Technique .................................................................347

Chuanqi Tao, Bixin Li, Xiaobing Sun, and Chongfeng Zhang

Approximation of CFL by Regular Languages for Concurrent Program Verification ........................................................................353

Sukhamay Kundu and Supratik Mukhopadhyay

An Optimization Strategy for Evolutionary Testing Based on Cataclysm..................................................................................359

Meng Wang, Bixin Li, Zhengshan Wang, and Xiaoyuan Xie

CloudApp 2010: The First IEEE International Workshop on Emerging Applications for Cloud Computing Session 1

LAYSI: A Layered Approach for SLA-Violation Propagation in Self-Manageable Cloud Infrastructures ............................................365

Ivona Brandic, Vincent C. Emekaroha, Michael Maurer, Schahram Dustdar, Sandor Acs, Attila Kertesz, and Gabor Kecskemeti

Permission Management System: Permission as a Service in Cloud Computing ........................................................................371

Victor Echeverria, Lorie M. Liebrock, and Dongwan Shin

An Anomaly Detection Framework for Autonomic Management of Compute Cloud Systems ..........................................................376

Derek Smith, Qiang Guan, and Song Fu


The Case for Content Search of VM Clouds ..............................................................................................................................382

Mahadev Satyanarayanan, Wolfgang Richter, Glenn Ammons, Jan Harkes, and Adam Goode

FalconEye: Data Center Status Extraction via Vision Transformation Techniques ..................................................................................388

Ki-Woong Park, Woomin Hwang, and Kyu Ho Park

SecureCloud: Towards a Comprehensive Security Framework for Cloud Computing Environments .........................................................393

Hassan Takabi, James B. D. Joshi, and Gail-Joon Ahn

Author Index ..................................................................................................................................................................................399