

20th International Conference on Software Engineering & Knowledge Engineering

(SEKE 2008)

**San Francisco Bay, California, USA
1-3 July 2008**

ISBN: 978-1-62748-662-0

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2008) by Knowledge Systems Institute (KSI)
All rights reserved.

Printed by Curran Associates, Inc. (2013)

For permission requests, please contact Knowledge Systems Institute (KSI)
at the address below.

Knowledge Systems Institute (KSI)
3420 Main Street
Skokie IL 60076

Phone: (847) 679-3135
Fax: (847) 679-3166

office@ksi.edu

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

Table of Contents

Foreword	iii
Conference Organization	iv
Y j { 'F qgup)v'j g'Uqhy ct g'F q'Y j cvKP ggf 'K'vq'F qA'qt 'Crlk plpi 'K'' Qdlgevk'gu'y kj 'vj g'Dwulpguu'	
<i>Dr. Cecilia Claudio</i>	1
Impact! The Challenge of Industrial Research in Computer Science in a web 2.0 world	
<i>Dr. Laura Haas</i>	2
Building Global Ecosystem for Collaborative Computing Research and Education	
<i>Dr. Yi Deng</i>	3
Applications I	
Transformations for Rapid Prototyping of Time-critical Applications	
<i>Shi-Kuo Chang, Zhoulan Zhang, Colin J. Ihrig, Paolo Maresca, Valentina Ternelli ...</i>	4
Case Study: Applying Business Process Management Systems (S)	
<i>Gregor Scheithauer, Guido Wirtz</i>	12
Verification of Optimization Algorithms: a Case Study of a Quadratic Assignment Problem Solver	
<i>Tsong Yueh Chen, Huimin Lin, Robert Merkel, Daoming Wang</i>	16

Software Engineering Methodology I

Towards a Theoretical Model for Evaluating the Acceptance of Model-driven Measurement Procedures (S) <i>Nelly Condori-Fernandez, Oscar Pastor</i>	22
Knowledge Transformation from Task Scenarios to View-based Design Diagrams <i>Nima Dezhkam, Kamran Sartipi</i>	26
PSPCAT: A PSP Data Collection and Analysis Tool (S) <i>Chien-Hung Liu, Shu-Ling Chen, Yu-Chun Huang</i>	33

Software Process Modeling I

A Systematic Method for Process Tailoring Based on Knowledge Reuse (S) <i>Xiao-yang He, Ya-sha Wang, Yu-xin Teng, Jin-gang Guo</i>	38
Linking Return on Training Investment with Defects Causal Analysis <i>Santiago Matalonga, Tomas San Feliu Gilabert</i>	42
Autonomous Reconfiguration Procedures for EJB-based Enterprise Applications <i>Thomas Vogel, Jens Bruhn, Guido Wirtz</i>	48

Software Maintenance and Evolution

Cross-language Clone Detection <i>Nicholas A. Kraft, Brandon W. Bonds, Randy K. Smith</i>	54
Software Maintenance Maturity Model (S3 ^m DSS) A Decision Support System <i>Alain April, Naji Habra, Arnaud Counet</i>	60
Odyssey-MEC: Model Evolution Control in the Context of Model-Driven Architecture <i>Chessman Correa, Leonardo Murta, Claudia Werner</i>	67

SE with Computational Intelligence and Machine Learning I

Analyzing the Impact of Attribute Noise on Software Quality Classification
Andres A. Folleco, Taghi M. Khoshgoftaar, Lofton A. Bullard 73

An Adaptive Neural Network with Dynamic Structure for Software Defect Prediction
Zhiwei Xu, Naeem Seliya, Weibiao Wu 79

Software Engineering Methodology II

Evaluating the Accuracy of Call Graphs Extracted with the Eclipse CDT
Nicholas A. Kraft, Kevin S. Webb 85

A Comparison of Time Tracking Tools for Software Developers
Jouni Lappalainen, Lasse Harjumaa, Jukka Sirvio, Tytti Pokka, Heidi Moisanen, Hanna Leskinen 91

RealSpec: an Executable Specification Language for Modeling Resources
Amir A. Khwaja, Joseph E. Urban 97

Software Testing I

Predicting Change Propagation in Object-oriented Systems: a Control-call Path Based Approach and Associated Tool
Linda Badri, Mourad Badri, Daniel St-Yves 103

A Qualitative Assessment of the Reverse Engineering Capabilities of Unit Testing Tools for Understanding Java Programs
Andy Tinkham, Scott Tilley, Tauhida Parveen 111

Estimating Event Lifetimes for Distributed Runtime Verification
Christos Kloukinas, George Spanoudakis, Khaled Mahbub 117

SE with Computational Intelligence and Machine Learning II

Ontology-learning Supported Sematic Search Using Cooperative Agents
Cheng Zhong, Zilan (Nancy) Yang, Mohsen Afsharchi, Behrouz H. Far 123

Automating a Domain Model Aware Reengineering Methodology <i>Javier Belmonte, Philippe Dugerdil</i>	129
Explaining Product Release Planning Results Using Concept Analysis <i>Gengshen Du, Thomas Zimmermann, Guenther Ruhe</i>	137
Weighted Static Code Attributes for Software Defect Prediction <i>Burak Turhan, Ayse Bener</i>	143
Software Engineering Methodology III	
Predicting Software Project Size Using Project Generated Information <i>Marcio de O. Barros</i>	149
Supporting Reusable Component Selection with Use Case Gap-based Development Effort Estimation <i>Xin Zhou, Bonnie Ray, Chenhua Feng</i>	155
A Project Scheduling Method Based on Human Resource Availability <i>Lizi Xie, Junchao Xiao, Dapeng Liu, Qing Wang</i>	161
Estimating the Effort of Independent Verification and Validation in the Context of Mission-critical Software Systems - A Case Study (S) <i>Haruka Nakaoa, Adam Trendowicz, Jurgen Munch</i>	167
Software Process Modeling II	
Unified Basic Concepts for Process Capability Models <i>Clenio F. Salviano, Adriana M. C. M. Figueiredo</i>	173
Systematic Approach to Risk Management in Software Projects through Process Tailoring <i>Lisandra M. Fontoura, Roberto Tom Price</i>	179
Process tailoring based on well-formedness rules <i>Eliana B. Pereira, Ricardo M. Bastos, Toacy C. Oliveira</i>	185

Non-invasive Software Process Data Collection for Expert Identification <i>Andrea Janes, Alberto Sillitti, Giancarlo Succi</i>	191
---	-----

SOA-Based Software Testing and Maintenance

Using XML Patterns to Guide Perturbation Based Testing of Web Services <i>Paulo N. Cruz Filho, Silvia Regina Vergilio</i>	197
--	-----

Translating OWL Specified Domain Knowledge to Aspect Oriented Model <i>Juanzi Li, Xinyu You, Xiaoying Bai</i>	203
--	-----

MAPLE: a Maintenance Approach for Pattern-enabLed rEconfiguration of SOA-based Enterprise Application <i>Songlin Hu, Ying Liang, Jiuming Tian, Yicheng Song</i>	209
--	-----

Reliability Oriented QoS Driven Composite Service Selection Based on Performance Prediction (S) <i>Lei Yang, Yu Dai, Bin Zhang</i>	215
---	-----

Service Oriented Technology and Web Technology I

Design of an RSS Crawler with Adaptive Revisit Manager (S) <i>Bum-Suk Lee, Jin Woo Im, Byung-Yeon Hwang, Du Zhang</i>	219
--	-----

QuickPay Online Payment Protocol (S) <i>Jian Dai, Mark Stamp</i>	223
---	-----

Sharing Application Logic Across Programming Language Boundaries (S) <i>Dennis S. Patrone, Bina Ramamurthy</i>	227
---	-----

Software Reuse and Component Technology I

Synergizing Collaboration and Reuse in Software Engineering (S) <i>Stefan Seedorf, Oliver Hummel</i>	232
---	-----

Improving Component Container Development Process through Product Line Engineering <i>Guoliang Liu, Yang Li, Jun Wei</i>	238
System and Software Architecture I	
.NET Extensions to the π -architecture Description Languages (S) <i>Zawar Qayyum, Flavio Oquendo</i>	244
Towards Collaborative Development Based on Software Architecture (S) <i>Yanchun Sun, Hui Song, Xinghua Wang, Wenpin Jiao</i>	250
Choosing a Software Architecture: An Approach and a Case Study <i>C. Ghezzi, G. Tamburrelli</i>	255
Formal Methods I	
PROTEF: Automatic Verification of Pattern-Based LTL Templates <i>Luis Garcia, Steve Roach, Salamah Salamah</i>	261
Formal Specification of Object-oriented Systems with Collaborative Objects and Petri Nets – a Case Study <i>Boleslaw Mikolajczak</i>	267
A Property Specification Tool for Generating Formal Specifications: Prospec 2.0 <i>Irbis Gallegos, Omar Ochoa, Ann Gates, Steve Roach, Salamah Salamah, Corina Vela</i>	273
SE with Computational Intelligence and Machine Learning III	
On the Rarity of Fault-prone Modules in Knowledge-based Software Quality Modeling <i>Taghi M. Khoshgoftaar, Naeem Seliya, Dennis J. Drown</i>	279
Machine Learning and Value-based Software Engineering: a Research Agenda <i>Du Zhang</i>	285
Automatic Clustering of Defect Reports <i>Vasile Rus, Sameer Mohammed, Sajjan Shiva</i>	291

Software Engineering Methodology IV

Subjective Assessment of the Mutual Influence of ISO 9126 Software Qualities: an Empirical Study <i>Sandro Morasca</i>	297
---	-----

Reverse Engineering Interface Protocols for Comprehension of Large C++ Libraries during Code Evolution Tasks <i>Edward B. Duffy, Jason O. Hallstrom, Brian A. Malloy</i>	303
---	-----

Knowledge Management to Support the Deployment of a CMMI Level 3 Process <i>A. P. Cavalcanti, F. Furtado, V. Moura, R. Costa, S. R. L. Meira</i>	309
---	-----

System and Software Architecture II

Code Transformation Techniques and Management Architecture for Self-manageable Distributed Applications <i>M. Muztaba Fuad</i>	315
---	-----

A Decision-centric Architecture Design Method Facilitating the Contextually Capture and Reuse of Design Knowledge <i>Xiaofeng Cui, Yanchun Sun, Sai Xiao, Hong Mei</i>	321
---	-----

System Architecture Induces Document Architecture (S) <i>Peter Henderson, Nishadi De Silva</i>	327
---	-----

A Software Framework for Integrative Physiological Model Simulation (S) <i>E. Zeynep Erson, M. Cenk Cavusoglu</i>	333
--	-----

Service Oriented Technology and Web Technology II

Combining SOA and BPM Technologies for Cross-System Process Automation <i>S. Herr, K. Laufer, J. Shafae, G. K. Thiruvathukal, G. Wirtz</i>	339
---	-----

Ontology-Enabled Generation of Embedded Web Services <i>Klaus Marius Hansen, Weishan Zhang, Goncalo Soares</i>	345
---	-----

Modeling Services to Construct Service-oriented Healthcare Architecture for Digital Home-care Business <i>Chi-Lu Yang, Yeim-Kuan Chang, Chih-Ping Chu</i>	351
--	-----

Databases

Testing Relational Database Schemas with Alternative Instance Analysis <i>Maria Claudia F. P. Emer, Silvia Regina Vergilio, Mario Jino</i>	357
---	-----

Analyzing Termination and Confluence in Active Rule Base via a Petri Net Approach (S) <i>Lorena Chavarria-Baez, Xiaou Li</i>	363
---	-----

A Fuzzy Trigger Language for Relational Database Systems <i>Ying Jin, Tejaswitha Bhavsar</i>	367
---	-----

Data Mining I

A Comparative Study on Data Representation to Categorize Text Documents (S) <i>D.A. Meedeniya, A.S. Perera</i>	371
--	-----

An Example on Economics-driven Software Mining <i>Rami Bahsoon, Wolfgang Emmerich</i>	375
--	-----

VP: an Efficient Algorithm for Frequent Itemset Mining <i>Qin Ding, Wen Shen Huang</i>	381
---	-----

Model-Based Software Engineering I

Evolution Shelf: Exploiting Evolution Styles within Software Architectures <i>Olivier Le Goer, Mourad-Chabane Oussalah, Dalila Tamzalit, Abdelhak-Djamel Seriai</i>	387
--	-----

Coverage-based Testing Using Qualitative Reasoning Models <i>Harald Brandl, Gordon Fraser, Franz Wotawa</i>	393
--	-----

Traceability Models to Control an Aspectual Model-driven Development (S) <i>Marta S. Tabares, Raquel Anaya, Ana Moreira, Joao Araujo, Fernando Arango</i>	399
--	-----

Knowledge Engineering

Knowledge-based System Development with Scripting Technology: A Recommender System Example <i>Dietmar Jannach</i>	405
--	-----

Integrating Trust Management into Usage Control in P2P Multimedia Delivery <i>Li Yang, Raimund Ege</i>	411
---	-----

Flow Balancing Model for Air Traffic Flow Management (S) <i>Bueno Borges de Souza, Li Weigang, Antonio Marcio Ferreira Crespo, Victor Rafael Rezende Celestino</i>	417
---	-----

Applications II

VisRFID: Visualizing Customer Behavior in Geotemporal Space Using RFID Technology <i>Beomjin Kim, Keith Bock, Michael Burton, Rod Strong, Benjamin Aeschliman</i>	422
--	-----

Analyzing Manufacturing Process Knowledge Flows with KoFI <i>Oscar M. Rodriguez-Elias, Alberto L. Moran, Jaqueline I. Lavandera, Aurora Vizcaino</i>	428
---	-----

Performance: a Longitudinal Study <i>Nenad Stankovic</i>	434
---	-----

Formal Methods II

A Formal Approach for Translating a SAM Architecture to PROMELA <i>Gonzalo Argote-Garcia, Peter J. Clarke, Xudong He, Yujian Fu, Leyuan Shi</i>	440
--	-----

An Algorithm for Computing Loop Functions <i>Ali Mili, Shir Aharon, Chaitanya Nadkarni</i>	448
---	-----

Verifying Behavioral Correctness of Design Pattern Implementation <i>Tu Peng, Jing Dong, Yajing Zhao</i>	454
Software Requirements Engineering I	
Automated Multiperspective Requirements Traceability Using Ontology Matching Technique <i>Namfon Assawamekin, Thanwadee Sunetnanta, Charnyote Pluempitiwiriyawej</i>	460
Eliciting Scenarios from Scenarios <i>Abdolmajid Mousavi, Behrouz H. Far</i>	466
Tailoring an Aspectual Goal-oriented Approach to Model Features <i>Carla Silva, Fernanda Alencar, Joao Araujo, Ana Moreira, Jaelson Castro</i>	472
Representing Textual Requirements as Graphical Natural Language for UML Diagram Generation <i>Magda G. Ilieva, Harold Boley</i>	478
Software Testing II	
A Dynamic Adjusting Method for Test Case Prioritization (S) <i>Bo Qu, Changhai Nie, Baowen Xu, Xiaofang Zhang</i>	484
A Systematic Mapping Study on Non-Functional Search-based Software Testing <i>Wasif Afzal, Richard Torkar, Robert Feldt</i>	488
A Degraded ILP Approach for Test Suite Reduction <i>Zhenyu Chen, Xiaofang Zhang, Baowen Xu</i>	494
A Meta-model to Support Regression Testing of Web Applications <i>Yanelis Hernandez, Tariq M. King, Jairo Pava, Peter J. Clarke</i>	500

Service Oriented Technology and Web Technology III

Service Granularity Effects in SOA
Ned Chapin 506

Securing Service-oriented Systems Using State-Based XML Firewall
Abhinay Reddyreddy, Haiping Xu 512

Toward Model Checking Web Services Over the Web
John C. Sloan, Taghi M. Khoshgoftaar 519

A Metadata Model for Managing and Querying XML Resources in Peer-to-peer Systems
Deise de Brum Saccol, Nina Edelweiss, Renata de Matos Galante 525

Formal Methods III

Minimal Observability for Transactional Hierarchical Services
Debmalya Biswas, Blaise Genest 531

Using Boolean Cardinality Constraint for LTS Bounded Model Checking (S)
Sachoun Park, Gihwon Kwon 537

Japanese Puzzle as a SAT Problem (S)
Sachoun Park, Gihwon Kwon 543

Business Models for Service-Oriented Architectures

Bridging the Semantic Gap Between Process Documentation and Process Execution
Gregor Scheithauer, Guido Wirtz, Candemir Toklu 549

Performance Challenges in Migrating to SOA Based Healthcare Systems
Suyog Gaidhani, Vijayananda Jagannatha 555

Agent-Based Technology and Intelligence I

Dynamically Optimize Process Execution Based on Process-agent (S)
Jian Dai, Junchao Xiao, Qing Wang, Mingshu Li, Huaizhang Li 561

Mobile-FIRST: a Mobile Agent Based First Responder System (S)
Jason Honda, Harry H. Cheng, Donna Djordjevich 565

Ontology-based and Evolutionary Search for Computational Agents Schemes (S)
Roman Neruda 569

Software Reuse and Component Technology II

A Goal-oriented Mixed-granularity Component Selection Method for Huge Component Repositories (S)
Xiaolin Xi, Jiyong Park, Jiakun Liu, Seongsoo Hong 573

A Case Study: Self-managed COTS Component-based Elevator System (S)
Michael E. Shin, Fernando Paniagua 577

Using Scenario Monitoring to Address State Based Crosscutting Concerns (S)
Mark Mahoney, Tzilla Elrad 581

Methods and Tools for Robust Services and Service Compositions

Negotiating Service Levels - A Generic Negotiation Framework for WS Agreement
Sebastian Hudert, Heiko Ludwig, Guido Wirtz 587

Taxonomy on Consistency Requirements in the Business Process Integration Context
Andreas Schönberger, Guido Wirtz 593

Developing Enterprise Applications with Support to Dynamic Unanticipated Evolution (S)
Hyggo O. de Almeida, Marcos F. Pereira, Marcio de M. Ribeiro, Angelo Perkusich, Emerson Loureiro, Evandro Costa 599

Data Mining II

Privacy-preserving Classification of Data Streams (S) <i>Ching-Ming Chao</i>	603
Comparing the Use of Traditional and Associative Classifiers towards Personalized Recommendations <i>Joel Pinho Lucas, Saddys Segrera, María N. Moreno</i>	607
Discovering Meaningful Clusters from Mining the Software Engineering Literature <i>Yan Wu, Harvey Siy, Li Fan</i>	613

Model-Based Software Engineering II

A Model-Driven Approach for the Semi-automated Generation of Web-based Applications from Requirements <i>Ali Fatolahi, Stephane S. Some, Timothy C. Lethbridge</i>	619
A Model-driven Toolset to Support an Approach for Analyzing Integration of Business Process Aspect of Enterprise Application Integration <i>Souvik Barat, Vinay Kulkarni</i>	625
Model-based Test Complexity Analysis for Software Installation Testing (S) <i>Jerry Gao, Karen Kwok, Todd Fitch</i>	631

Service Oriented Technology and Web Technology IV

A Similarity Analysis Model for Semantic Web Information Filtering Applications <i>Lucas Drumond, Rosario Girardi, Fabio Silva</i>	638
Fuzziness in the Semantic Web: Survey and Future Directions <i>Seyed Koosha Golmohammadi, Marek Reformat, Witold Pedrycz</i>	643
A Language-based Approach to Addressing Reliability in Composite Web Services <i>Onyeka Ezenwoye, S. Masoud Sadjadi</i>	649

Agents, Web, and Security

A Systematic Process for Domain Engineering
*Eduardo Santana de Almeida, Alexandre Alvaro, Vinicius Cardoso Garcia, Daniel
Lucredio, Renata Pontin de Mattos Fortes, Silvio Romero de Lemos Meira* 655

Diagnosing Runtime Violations of Security & Dependability Properties
Theocharis Tsigritis, George Spanoudakis 661

Model-Based Software Engineering III

Translating Workflow Diagrams into Web Designs
Antonio Navarro, Jorge Merino, Alfredo Fernandez-Valmayor, Jesus Cristobal 667

A Security Domain Model for Static Analysis and Verification of Software Programs
Alan B. Shaffer 673

Component Based Architectures for eXtreme Transacion Processing (S)
Luca Vetti Tagliati 679

Ontologies I

An Ontology for Controlled Experiments on Software Engineering
*Rogério Eduardo Garcia, Erika Nina Hohn, Ellen Francine Barbosa, Jose Carlos
Maldonado* 685

Improving Automatic Model Creation Using Ontologies
Sven J. Korner, Tom Gelhausen 691

Ontology-based Development of Testing Related Tools
Ellen F. Barbosa, Elisa Y. Nakagawa, Ana C. Riekstin, Jose C. Maldonado 697

Software Test Automation and Practice I

Test Order Generation for Efficient Object-oriented Class Integration Testing
Rattikorn Hewett, Phongphun Kijsanayothin, Darunee Smavatkul 703

Using Observer Automata to Select Test Cases for Test Purposes
Gordon Fraser, Martin Weiglhofer, Franz Wotawa 709

Building Testable Components - a Systematic Approach and Its Experimental Study
Jerry Gao, Wrihang Roberto Liang, Radhika Chhabra, Ramyashree Swamy, Ma Xiang 715

SyncTest: a Tool to Synchronize Source Code, Model and Testing
Xiaoying Bai, Tao Liu 723

Agent-Based Technology and Intelligence II

A Virtual Machine for Distributed Agent-oriented Programming
Bin Zhou, Hong Zhu 729

MAAEM: a Multi-agent Application Engineering Methodology
Adriana Leite, Rosario Girardi, Uiratan Cavalcante 735

A Semantic Based Certification and Access Control Approach Using Security Patterns on SEAGENT
Fatih Tekbacak, Tugkan Tuglular, Oguz Dikenelli 741

Documenting and Modeling Multi-agent Systems Product Lines
Ingrid Nunes, Uira Kulesza, Camila Nunes, Carlos J. P. de Lucena 745

Model-Based Software Engineering IV

A Study of the Model Explosion Problem in CTL Model Update
Yulin Ding, Yan Zhang 752

Feature Modeling for Context-Aware Software Product Lines <i>Paula Fernandes, Claudia Werner, Leonardo Murta</i>	758
---	-----

MEtaGile: A Pragmatic Domain-specific Modeling Environment (S) <i>Olivier Buchwalder, Claude Petitpierre</i>	764
---	-----

Software Requirements Engineering II

Obtaining Well-Founded Practices about Elicitation Techniques by Means of an Update of a Previous Systematic Review (S) <i>Oscar Dieste, Marta Lopez, Felicidad Ramos</i>	769
---	-----

Automatic Discovery of Interactions Between Software Requirements <i>Edgar S. Calisaya, Marcos R. S. Borges, Maria Luiza M. Campos</i>	773
---	-----

A Model-driven Approach for Software Product Lines Requirements Engineering <i>Mauricio Alferez, Uira Kulesza, Andre Sousa, Joao Santos, Ana Moreira, Joao Araujo, Vasco Amaral</i>	779
--	-----

Model Interpretation for Executable Observation Specifications (S) <i>Mathias Funk, Piet van der Putten, Henk Corporaal</i>	785
--	-----

Security Technology & Systems

Network Intrusion Detection Based on Bayesian Networks (S) <i>Alma Cemerlic, Li Yang, Joseph M. Kizza</i>	791
--	-----

Supremum of Agent Number Needed in Analyzing Security Protocols Based on Horn Logic <i>Feng Liu, Zhoujun Li, Ti Zhou, Mengjun Li</i>	795
--	-----

Towards the Detection of Emulated Environments via Analysis of the Stochastic Nature of System Calls <i>Tauhida Parveen, William Allen, Scott Tilley, Gerald Marin, Richard Ford</i>	802
--	-----

SE of Autonomic Grid Computing Systems and Applications I

Self-managed Deployment in a Distributed Environment via Utility Functions
Debzani Deb, Michael J. Oudshoorn, John Paxton 808

Design of a Fault-tolerant Job-flow Manager for Grid Environments Using Standard Technologies, Job-flow Patterns, and a Transparent Proxy
Gargi Dasgupta, Onyeka Ezenwoye, Liana Fong, Selim Kalayci, S. Masoud Sadjadi, Balaji Viswanathan 814

Supporting Context-awareness in Web-based Groupware Development (S)
Jose Maria N. David, Marcos R. S. Borges, Jose A. Pino 820

Software Engineering Methodology V

Object-Z to Java/OO-Perl: A Conversion from Object-Z to Executable Skeletal Code with Dynamically Checkable Design Contracts
Sherri M. Sanders, Cui Zhang 824

An Empirical Study on Modularization of Object Oriented Software
Jing Liu, Bin Liu, Chi K. Tse, Keqing He 830

Bridging the Gap Between Slicing and Model-based Diagnosis
Franz Wotawa 836

Dynamic Analysis and Design Pattern Detection in Java Programs (S)
Lei Hu, Kamran Sartipi 842

Service Oriented Technology and Web Technology V

Active Ontologies - an Approach for Using Ontologies as Semantic Web Services Interfaces (S)
Tiago Cordeiro Marques, Marcio Gurjao Mesquita, Julio Cesar Campos Neto, Pedro Porfirio Muniz Farias 847

Failure Prediction Based Self-healing Approach for Web Service Composition (S)
Yu Dai, Lei Yang, Bin Zhang, Kening Gao 853

A Web-based data Management and Analysis System for CO2 Capture (S) <i>Yuxiang Wu, Christine W. Chan</i>	857
---	-----

Software Test Automation and Practice II

Integrating Random Testing with Constraints for Improved Efficiency and Diversity <i>Yoonsik Cheon, Antonio Cortes, Gary T. Leavens, Martine Ceberio</i>	861
---	-----

Properties of Machine Learning Applications for Use in Metamorphic Testing <i>Christian Murphy, Gail Kaiser, Lifeng Hu, Leon Wu</i>	867
--	-----

Fault Injection Testing of User-space File Systems Using Traditional and Aspect-based Techniques (S) <i>Jonathan Hittle, Sudipto Ghosh</i>	873
---	-----

Evaluation of Personalized Information Systems: Application in Intelligent Transport System (S) <i>M. Soui, C. Kolski, M. Abed, G. Uster</i>	877
---	-----

SE of Autonomic Grid Computing Systems and Applications II

Dynamis: Dynamic Overlay Service Composition for Distributed Stream Processing <i>Farshad A. Samimi, Philip K. McKinley</i>	881
--	-----

Wings4Symbian: A Pervasive Computing Middleware for Symbian OS Mobile Devices <i>Olympio C. Silva Filho, Danilo F. S. Santos, Angelo Perkusich, Emerson Loureiro, Hyggo Almeida</i>	887
--	-----

An OWL/SWRL Based Diagnosis Approach in a Pervasive Middleware <i>Weishan Zhang, Klaus Marius Hansen</i>	893
---	-----

Model-Based Software Engineering V

A Constraint Model for Automated Deployment of Automotive Control Software <i>Mihai Nica, Bernhard Peischl, Franz Wotawa</i>	899
---	-----

Applying Critical Pair Analysis in Graph Transformation Systems to Detect Syntactic Aspect Interaction in UML State Diagrams <i>Zaid Altahat, Tzilla Elrad, Luay Tahat</i>	905
Model Comparison: a Strategy-Based Approach <i>Kleinner Oliveira, Toacy Oliveira</i>	912
Ontologies II	
Towards Metrics for Ontology Balance <i>Steffen Mencke, Martin Kunz, Reiner R. Dumke</i>	918
Techniques for De-fragmenting Mobile Applications: A Taxonomy <i>Damith C. Rajapakse</i>	923
Identifying NFRs Conflicts Using Quality Ontology <i>Taiseera Al Balushi, Pedro R. Falcone Sampaio, Mitul Patel, Oscar Corcho, Pericles Loucopoulos</i>	929
Ontology-based Process Modeling and Execution Using STEP/EXPRESS <i>Arndt Muhlenfeld, Wolfgang Mayer, Franz Maier, Markus Stumptner</i>	935
Reviewer's Index	941
Author's Index	944

Note: (S) means short paper.