

2010 Fifth International Conference on Software Engineering Advances

(ICSEA 2010)

**Nice, France
22-27 August 2010**



**IEEE Catalog Number: CFP1091B-PRT
ISBN: 978-1-4244-7788-3**

2010 Fifth International Conference on Software Engineering Advances

ICSEA 2010

Table of Contents

Preface.....	xii
Committee.....	xiv
Reviewers.....	xviii

ICSEA 1: Advances in Fundamentals for Software Development I

PercSoft: A Novel Approach to Software Maintenance and Enhancement	1
<i>Takao Shimomura</i>	
Evaluation of Service Designs Based on SoaML	7
<i>Michael Gebhart, Marc Baumgartner, Stephan Oehlert, Martin Blersch, and Sebastian Abeck</i>	
A New General Approach to Model Event Handling	14
<i>Dong Liang and Bernd Steinbach</i>	
Supporting an Aspect-Oriented Approach to Web Accessibility Design	20
<i>Adriana Martín, Rafaela Mazalu, and Alejandra Cechich</i>	

ICSEA 2: Advances in Fundamentals for Software Development II

Home Appliance Virtualization Software Configuration for Home Network Services	26
<i>Naoki Yamauchi, Tadashi Ohta, and Kazumasa Takami</i>	
What Does Research Say about Agile and Architecture?	32
<i>Hongyu Pei Breivold, Daniel Sundmark, Peter Wallin, and Stig Larsson</i>	
The Automatic Discovery of Violations to the Normalized Systems Design Theorems: A Feasibility Study	38
<i>Kris Ven, Dieter Van Nuffel, David Bellens, and Philip Huysmans</i>	
Understanding Customer Expectations for System Development	44
<i>Xinwei Zhang, Guillaume Auriol, and Claude Baron</i>	

ICSEA 3: Advances in Fundamentals for Software Development III

A Meta-model Supporting the Decomposition of Problem Descriptions	50
<i>Luigi Lavazza, Alberto Coen-Porisini, Pietro Colombo, and Vieri del Bianco</i>	
Translating Ontological Business Transactions into Evolvable Information Systems	58
<i>Dieter Van Nuffel, Philip Huysmans, David Bellens, and Kris Ven</i>	
Issues and Challenges of Requirement Engineering in Service Oriented Software Development	64
<i>Muneera Bano and Naveed Ikram</i>	
Placement of Entities in Object-Oriented Systems by Means of a Single-Objective Genetic Algorithm	70
<i>Margaritis Basdavanos and Alexander Chatzigeorgiou</i>	

ICSEA 4: Advances in Fundamentals for Software Development IV

Supporting Service Design Decisions	76
<i>Michael Gebhart, Marc Baumgartner, and Sebastian Abeck</i>	
Status Communication in Agile Software Teams: A Case Study	82
<i>John Downs, John Hosking, and Beryl Plimmer</i>	
Adding Optimization to the Decompilable Code Editor	88
<i>Samir Ribić and Adnan Salihbegović</i>	
A Domain-Oriented Approach for GIS Component Selection	94
<i>Gabriela Gaetan, Viviana Saldaño, Agustina Buccella, and Alejandra Cechich</i>	

ICSEA 5: Advances in Fundamentals for Software Development V

An Approach to Method-Tool Coupling for Software Development	101
<i>Hermann Kaindl, Jürgen Falb, Stefan Melbinger, and Thomas Bruckmayer</i>	
On the Derivation of Class Diagrams from Use Cases and Logical Software Architectures	107
<i>Maribel Yasmina Santos and Ricardo J. Machado</i>	
CRUD-DOM: A Model for Bridging the Gap between the Object-Oriented and the Relational Paradigms	114
<i>Oscar M. Pereira, Rui L. Aguiar, and Maribel Yasmina Santos</i>	
Do the Software Architects Get the Needed Support for the Job They Perform?	123
<i>Krešimir Popović, Željko Hocenski, and Goran Martinović</i>	

ICSEA 6: Advances in Fundamentals for Software Development VI

Extending the UML Metamodel for Sequence Diagram to Enhance Model Traceability	129
<i>Mohammed Misbhauddin and Mohammad Alshayeb</i>	
CoDocent: Support API Usage with Code Example and API Documentation	135
<i>Ye-Chi Wu, Lee Wei Mar, and Hewijin Christine Jiau</i>	

An Approach for Combining Model-Based and Scenario-Based Software Architecture Analysis	141
<i>Georg Buchgeher and Rainer Weinreich</i>	
Content Server Architecture Pattern for Evolvability and Scalability	149
<i>Quyen L. Nguyen, Alla Lake, and Mark Huber</i>	

ICSEA 7: Advances in Fundamentals for Software Development VII

A Metamodel-Based Approach to Information Systems Evolution and Data Migration	155
<i>Mohammed A. Aboulsamh and Jim Davies</i>	
Agile Engineering of Internal Domain-Specific Languages with Dynamic Programming Languages	162
<i>Sebastian Günther, Maximilian Haupt, and Matthias Splieth</i>	
Syntax and Semantics of Workflows That Include Passbacks	169
<i>Osamu Takaki, Izumi Takeuti, Noriaki Izumi, and Koiti Hasida</i>	
Developing Fault Tolerant Distributed Systems by Refinement	178
<i>Elena Troubitsyna</i>	

ICSEA 8: Business Technology

Service Level Agreements Compliance Checking in the Cloud Computing: Architectural Pattern, Prototype, and Validation	184
<i>Antonin Chazalet</i>	
On Using Metadata and Compression Algorithms to Cluster Heterogeneous Documents from a Semantic Point of View	190
<i>Alexandra Cernian, Dorin Carstoiu, and Valentin Sgarciu</i>	
A Review of Productivity Factors and Strategies on Software Development	196
<i>Suzana Cândido de Barros Sampaio, Emanuella Aleixo Barros, Gibeon Soares de Aquino Júnior, Mauro José Carlos e Silva, and Silvio Romero de Lemos Meira</i>	
CuteLoop - An Approach for Networked Devices Enabled Intelligence	205
<i>Harald Sundmaeker and Tatiana Kovacikova</i>	

ICSEA 9: Software Deployment and Maintenance I

An Approach to GA-Driven Automatic Refactoring Based on Design Patterns	213
<i>Takao Shimomura, Kenji Ikeda, and Muneo Takahashi</i>	
Demarcating the Scope of a Predelivery Maintenance Process	219
<i>Ahmad Salman Khan and Mira Kajko-Mattsson</i>	
.NET Reverse Engineering with MARPLE	227
<i>Francesca Arcelli, Davide Franzosi, and Claudia Raibulet</i>	
Improving Release and Patch Management Processes: An Empirical Case Study on Process Challenges	232
<i>Hanna-Miina Sihvonen and Marko Jääntti</i>	

ICSEA 10: Software Deployment and Maintenance II

Change Impact Analysis and Software Evolution Specification for Continually Evolving Systems	238
<i>Urjaswala Vora</i>	
Demarcating the Scope of a Handover Process	244
<i>Ahmad Salman Khan and Mira Kajko-Mattsson</i>	
Rework Requirement Changes in Software Maintenance	252
<i>Bee Bee Chua</i>	
A FAQ Finding Process in Open Source Project Forums	259
<i>Wei-Chung Hu, Dung-Feng Yu, and Hewijin Christine Jiau</i>	
A Scenario of Service-Oriented Principles Adaptation to the Telecom Providers Service Delivery Platform	265
<i>Natalia Kryvinska, Christine Strauss, Bernhard Collini-Nocker, and Peter Zinterhof</i>	

ICSEA 11: Software Engineering Techniques, Metrics, and Formalisms I

Security Quality Assurance on Web-Based Application through Security Requirements Tests: Elaboration, Execution and Automation	272
<i>Rodrigo Elia Assad, Tarciana Katter, Felipe Silva Ferraz, Leopoldo Pires Ferreira, and Silvio Romeiro Lemos Meira</i>	
Business and Information System Alignment: A Formal Solution for Telecom Services	278
<i>Jacques Simonin, Emmanuel Bertin, Yves Le Traon, Jean-Marc Jézéquel, and Noël Crespi</i>	
Design Rationale Capture in the Globalised Enterprise: An Industrial Study	284
<i>Ann Nkwocha, Jon G. Hall, and Lucia Rapanotti</i>	
Living on the MoVE: Towards an Architecture for a Living Models Infrastructure	290
<i>Michael Breu, Ruth Breu, and Sarah Löw</i>	
An AspectJ Approach for Reusable Infrastructure Components	296
<i>Uwe Hohenstein and Daniel Wiese</i>	

ICSEA 12: Software Engineering Techniques, Metrics, and Formalisms II

OOPN and DEVS Formalisms for System Specification and Analysis	305
<i>Radek Kočí and Vladimír Janoušek</i>	
Experience Management for Very Small Entities: Improving the Copy-Paste Model	311
<i>Vincent Ribaud, Philippe Saliou, and Claude Y. Laporte</i>	
Measuring the Pro-Activity of Software Agents	319
<i>Fernando Alonso, José L. Fuertes, Loïc Martinez, and Héctor Soza</i>	
Understanding the Use of Elicitation Approaches for Effective Requirements Gathering	325
<i>Bee Bee Chua, Danilo Valeros Bernardo, and June Verner</i>	

A Risk Assessment Model for Offshoring Using CMMI Quantitative Approach	331
<i>Morakot Choetkiertikul and Thanwadee Sunetnanta</i>	

ICSEA 13: Advanced Design Tools for Developing Software I

Aspect-Oriented Modeling: Issues and Misconceptions	337
<i>Saqib Iqbal and Gary Allen</i>	
Cognitive Profiles in Understanding and Prioritizing Requirements: A Case Study	341
<i>Nadina Martínez Carod and Alejandra Cechich</i>	
Towards Automated Context-Aware Software Quality Management	347
<i>Gregor Grambow and Roy Oberhauser</i>	

ICSEA 14: Advanced Design Tools for Developing Software II

Supporting Hardware-Related Software Development with Integration of Development Tools	353
<i>Juho Eskeli and Päivi Parviainen</i>	
Tool Support for Software Architecture Design with Genetic Algorithms	359
<i>Hadaytullah, Sriharsha Vathsavayi, Outi Rähkä, and Kai Koskimies</i>	
Quality of Service Attributes in Web Services	367
<i>Ahmed Al-Moayed and Bernhard Hollunder</i>	
Testing-Based Selection Method for Integrability on Service-Oriented Applications	373
<i>Andres Flores, Alejandra Cechich, Alejandro Zunino, and Macario Polo Usaola</i>	

ICSEA 15: Software Economics, Adoption, and Education

Developing Domain-Ontologies to Improve Software Engineering Knowledge	380
<i>José R. Hilerá and Luis Fernández-Sanz</i>	
Methodological and Technological Framework Proposal to Capitalize Organizational Knowledge	384
<i>Arturo Mora-Soto, Maria-Isabel Sanchez-Segura, Fuensanta Medina-Dominguez, and Antonio Amescua</i>	
Transitioning to Distributed Development in Students' Global Software Development Projects: The Role of Agile Methodologies and End-to-End Tooling	388
<i>Christelle Scharff, Olly Gotel, and Vidya Kulkarni</i>	

ICSEA 16: Specialized Software Advanced Applications I

Minimizing CO2 Emissions in a Computing World	395
<i>Carlos L. Reis and Jorge M. Pacheco</i>	
Sensing WithSense - An Intelligent Interface for Participatory Sensing	400
<i>Wasif Tanveer, Martinez-Enriquez A. M., Escalada-Imaz G., and Muhammad Aslam</i>	

On the Design of a Management Platform for Antibiotic Guidelines in the Intensive Care Unit	406
<i>Femke De Backere, Kristof Steurbaut, Filip De Turck, Kirsten Colpaert, and Johan Decruyenaere</i>	

ICSEA 17: Specialized Software Advanced Applications II

Ontology-Based Similarity Measurement in Software Projects through SimReq Framework	412
<i>Muhammad Ilyas and Josef Küng</i>	
A Data Mining System for the Generation of Geographical C16 Cancer Patterns	417
<i>Joaquín Pérez-Ortega, Olivia Fragoso-Díaz, René Santaolaya-Salgado, Adriana Mexicano-Santoyo, and Fátima Henriques</i>	
Disjoint-Knowledge Analysis and Preservation in Ontology Merging Process	422
<i>Muhammad Fahad, Nejib Moalla, Abdelaziz Bouras, Muhammad Abdul Qadir, and Muhammad Farukh</i>	

ICSEA 18: Advances in Software Testing I

Testing Web-Services Using Test Sheets	429
<i>Colin Atkinson, Florian Barth, Daniel Brenner, and Marcus Schumacher</i>	
A Symbolic Execution Tool Based on the Elimination of Infeasible Paths	435
<i>Mike Papadakis and Nicos Malevris</i>	

ICSEA 19: Advances in Software Testing II

RemoteTest: A Framework for Testing Distributed Systems	441
<i>Christoph Torens and Lars Ebrecht</i>	
Implementing Software Test Management Using SpiraTeam Tool	447
<i>Ahmed Ibrahim Safana and Suhaimi Ibrahim</i>	
A Proactive Approach to Test Service Level Agreements	453
<i>Marcos Palacios, José García-Fanjul, Javier Tuya, and Claudio de la Riva</i>	
Automatic Generation of Test Suites from Decision Table - Theory and Implementation	459
<i>Mamta Sharma and Subhash Chandra B.</i>	

ICSEA 20: Software Performance

Predicting Data Access Patterns in Object-Oriented Applications Based on Markov Chains	465
<i>Stoyan Garbatov and João Cachopo</i>	
Using CPU Stubs to Optimize Parallel Processing Tasks: An Application of Dynamic Performance Stubs	471
<i>Peter Trapp, Markus Meyer, and Christian Facchi</i>	

An Availability Algorithm for Backup Systems Using Secure P2P Platform	477
<i>Marcos Pinheiro Duarte, Rodrigo Elia Assad, Felipe Silva Ferraz, Leopoldo Pires Ferreira, and Silvio Romeiro de Lemos Meira</i>	
Benchmarking the Efficiency of Array Processing for Various Types of Language Processors	482
<i>Jozo Dujmović and Nathan Luis</i>	
Evaluating Adaptation Behavior of Adaptive Systems	488
<i>Pablo Antonino, Marius Orfgen, Daniel Schneider, Tanvir Hussain, and Martin Becker</i>	
ICSEA 21: Software Security, Privacy, Safeness	
An Approach Dedicated for Web Service Security Testing	494
<i>Sébastien Salva, Patrice Laurençot, and Issam Rabhi</i>	
D-WAV: A Web Application Vulnerabilities Detection Tool Using Characteristics of Web Forms	501
<i>Lijiu Zhang, Qing Gu, Shushen Peng, Xiang Chen, Haigang Zhao, and Daoxu Chen</i>	
Identification of Security-Safety Requirements for the Outdoor Robot RAVON Using Safety Analysis Techniques	508
<i>Zhensheng Guo, Dirk Zeckzer, Peter Liggesmeyer, and Oliver Mäckel</i>	
Multiclass S-Reliability for Services in SOA	514
<i>Quyen L. Nguyen and Arun Sood</i>	
Author Index	521