

2012 19th Asia-Pacific Software Engineering Conference

(APSEC 2012)

**Hong Kong, China
4 – 7 December 2012**

**Volume 1
Pages 1-891**



**IEEE Catalog Number: CFP12154-PRT
ISBN: 978-1-4673-4930-7**

2012 19th Asia-Pacific Software Engineering Conference

APSEC 2012

Table of Contents

Volume - 1

Message from the General Chairs.....	xvi
Message from the Program Chairs	xvii
Message from the Emerging Research Track Chair.....	xviii
Steering Committee.....	xix
Organizing Committee.....	xx
Program Committee.....	xxii
Emerging Research Track Program Committee.....	xxv
Additional Reviewers	xxvi
Keynotes.....	xxviii

Session 1A: Formal Methods I

A Context-Based Integrity Framework	1
<i>Mark Anderson, Paul Montague, and Benjamin Long</i>	
Integration of Safety Verification with Conformance Testing in Real-Time	
Reactive System	10
<i>Haiying Sun, Jing Liu, and Debui Du</i>	
Modular Heap Abstraction-Based Memory Leak Detection	
for Heap-Manipulating Programs	20
<i>Longming Dong, Ji Wang, and Liqian Chen</i>	
A CSP-theoretic Framework of Checking Conformance of Business Processes	30
<i>Suman Roy, Sidharth Bibary, and Jose Alfonso Corso Laos</i>	

Session 1B: Context-aware and Intelligent Systems

Applying Recommendation Systems for Composing Dynamic Services for Mobile Devices	40
--------------------------------------------------------------------------------------------	----

*Jari Pääkkö, Mikko Raatikainen, Varvana Mylläri-
niemi, and Tomi Männistö*

Towards an Adaptive Service Degradation Approach for Handling Server Overload	52
----------------------------------------------------------------------------------------	----

Ziyou Wang, Minghui Zhou, and Hong Mei

Session 1C: Software Security, Reliability and Privacy

A Preference and Honesty Aware Trust Model for Web Services	61
-------------------------------------------------------------------	----

Rui Song, Bixin Li, Xiaona Wu, Cuicui Liu, and Shanshan Qi

Trust-Based Service Composition and Optimization	67
--------------------------------------------------------	----

Xiaona Wu, Bixin Li, Rui Song, Cuicui Liu, and Shanshan Qi

A Trust Impact Analysis Model for Composite Service Evolution	73
---------------------------------------------------------------------	----

Shanshan Qi, Bixin Li, Cuicui Liu, Xiaona Wu, and Rui Song

Modeling and Verification of Context-Aware Systems	79
----------------------------------------------------------	----

Minh H. Tran, Alan Colman, Jun Han, and Hongyu Zhang

The Case for Using Simulation to Validate Event-B Specifications	85
------------------------------------------------------------------------	----

Faqing Yang, Jean-Pierre Jacquot, and Jeanine Souquieres

Semi-Automated Verification of Defense against SQL Injection in Web Applications	91
-------------------------------------------------------------------------------------------	----

Kaiping Liu, Hee Beng Kuan Tan, and Lwin Khin Shar

Session 2A: Requirements Engineering I

Discovering Early Aspects through Goals Interactions	97
------------------------------------------------------------	----

Jonathan Lee, Kuo-Hsun Hsu, Shin-Jie Lee, and Wen-Tin Lee

Automated Functional Scenarios-Based Formal Specification Animation	107
---------------------------------------------------------------------------	-----

Mo Li and Shaoying Liu

DRE-specific Wikis for Distributed Requirements Engineering: A Review	116
-----------------------------------------------------------------------------	-----

Rong Peng and Han Lai

Service-Driven Migrating of Enterprise Information Systems: A Case Study	127
--------------------------------------------------------------------------------	-----

Ziyan Xu, Haibong Zhao, Sheau Ling Tan, and Lin Liu

Session 2B: Product-Line Software Engineering

Supporting Awareness during Collaborative and Distributed Configuration of Multi Product Lines	137
<i>Gerald Holl, Paul Grünbacher, Christoph Elsner, and Thomas Klambauer</i>	
Leveraging CVL to Manage Variability in Software Process Lines	148
<i>Emmanuelle Rouillé, Benoît Combemale, Olivier Barais, David Touzet, and Jean-Marc Jézéquel</i>	
Relationships Formalization for Model-Based Product Lines	158
<i>Stephen Creff, Joël Champeau, Arnaud Monégier, and Jean-Marc Jézéquel</i>	

Session 2C: Software Verification and Validation

Debugging Model-to-Model Transformations	164
<i>J. Schönböck, G. Kappel, M. Wimmer, A. Kusel, W. Retschitzegger, and W. Schwinger</i>	
Model-Checking C Programs against JML-like Specification Language	174
<i>Masahiro Sakai, Kohei Maruchi, and Takeo Imai</i>	
Resynchronizing Model-Based Self-Adaptive Systems with Environments	184
<i>Lingbao Zhang, Chang Xu, Xiaoxing Ma, Tianxiao Gu, Xuezhi Hong, Chun Cao, and Jian Lu</i>	
Software-Based Online Monitoring of Cache Contents on Platforms without Coherence Fabric	194
<i>Adriaan Schmidt and Oliver Horst</i>	

Session 3A: Software Engineering Environments and Tools

An Experimentation Platform for the Automatic Parallelization of R Programs	203
<i>Frank Padberg and Michael Mirold</i>	
Discovering Domain Concepts and Hyponymy Relations by Text Relevance	
Classifying Based Iterative Web Searching	213
<i>Lili Mou, Ge Li, Zhi Jin, Yangyang Lu, and Yiyang Hao</i>	
Semi-static Detection of Runtime Type Errors in Component-Based Java Programs	223
<i>Xiaowei Zhou, Wenbo Zhang, and Jianhua Zhang</i>	
Protego: In-Memory Version Control System in the Cloud	232
<i>Filippo Gioachin, Qianhui Liang, Yuxia Yao, and Bu-Sung Lee</i>	

Session 3B: Software Maintenance and Evolution I

An Empirical Study on Improving Severity Prediction of Defect Reports Using Feature Selection	240
<i>Cheng-Zen Yang, Chun-Chi Hou, Wei-Chen Kao, and Ing-Xiang Chen</i>	
Linking Functions and Quality Attributes for Software Evolution	250
<i>Hongji Yang, Shang Zheng, William Cheng-Chung Chu, and Ching-Tsorng Tsai</i>	
Bug Prediction Metrics Based Decision Support for Preventive Software Maintenance	260
<i>Girish Maskeri, Deepthi Karnam, Sree Aurovindh Viswanathan, and Srinivas Padmanabhuni</i>	

Session 3C: Software Project Management and Applications

An Approach to Generate Actor-Oriented Activity Charts from Use Case Requirements	270
<i>Saurabh Tiwari, Santosh Singh Rathore, Abhijeet Singh, Abhinav Singh, and Atul Gupta</i>	
Process Model of Software Method Transition	276
<i>Natalja Nikitina and Mira Kajko-Mattsson</i>	
A Design Pattern to Build Executable DSMLs and Associated V&V Tools	282
<i>Benoît Combemale, Xavier Crégut, and Marc Pantel</i>	
Evaluation Metric for Multiple-Bug Localization with Simple and Complex Predicates	288
<i>Yiwei Zhang, Eric Lo, and Ben Kao</i>	
Dependency Based Approach for Software Analysis Web Services Replacement	294
<i>Chaman Wijesiriwardana, Giacomo Ghezzi, Emanuel Giger, Atsushi Sawada, and Harald Gall</i>	
Testing of Component-Based Systems	300
<i>Bilal Kanso, Marc Aiguier, Frédéric Boulanger, and Christophe Gaston</i>	

Session 4A: Code Analysis and Testing

Precise Analysis of Large Industry Code	306
<i>Priyanka Darke, Mayur Khanzode, Arun Nair, Ulka Shrotri, and R. Venkatesh</i>	
An Experience Report on Analyzing Industrial Software Systems Using Code Clone Detection Techniques	310
<i>Noribiro Yoshida, Yoshiki Higo, Shinji Kusumoto, and Katsuro Inoue</i>	
Enhancing Symbolic Execution to Test the Compatibility of Re-engineered Industrial Software	314
<i>Susumu Tokumoto, Tadahiro Uehara, Kazuki Munakata, Haruyuki Ishida, Toru Eguchi, and Masafumi Baba</i>	

Test Case Selection Based on Path Conditions of Symbolic Execution	318
<i>Kazuki Munakata, Shoichiro Fujiwara, Susumu Tokumoto, and Tadahiro Uehara</i>	

Session 4B: Requirement Modelling and Analysis

The NORMAP Methodology: Lightweight Engineering of Non-functional Requirements for Agile Processes	322
<i>Weam M. Farid</i>	

Automated Analysis of Textual Use-Cases: Does NLP Components and Pipelines Matter?	326
------------------------------------------------------------------------------------------	-----

Naveen Kulkarni, Deepti Parachuri, Madhuri Dasa, and Abhishek Kumar

Empirical Analysis of the Impact of Requirements Traceability Quality to the Productivity of Enterprise Applications Development	330
----------------------------------------------------------------------------------------------------------------------------------------	-----

Shinobu Saito, Takashi Hoshino, Mutsuki Takeuchi, Masatoshi Hiraoka, Tsuyoshi Kitani, and Mikio Aoyama

Session 4C: Novel Techniques

SaaS Application Framework Using Information Gateway Enabling Cloud Service with Data Confidentiality	334
-------------------------------------------------------------------------------------------------------------	-----

Kiyoshi Nishikawa, Kenji Oki, and Akibiko Matsuo

Towards Accurate Monitoring of Extra-Functional Properties in Real-Time Embedded Systems	338
------------------------------------------------------------------------------------------------	-----

Mehrdad Saadatmand and Mikael Sjödin

Implementing Virtual Agent as an Interface for Smart Home Voice Control	342
-------------------------------------------------------------------------------	-----

Shimpei Soda, Masahide Nakamura, Shinsuke Matsumoto, Shintaro Izumi,

Hiroshi Kawaguchi, and Masahiko Yoshimoto

Determining and Selecting the Optimal Sets of Risk Treatments under Project Constraints	346
-----------------------------------------------------------------------------------------------	-----

Tak Wah Kwan and Bryan Cheung

Session 5A: Empirical Software Engineering I

Validating the Effectiveness of Object-Oriented Metrics over Multiple Releases for Predicting Fault Proneness	350
---------------------------------------------------------------------------------------------------------------------	-----

Santosh Singh Rathore and Atul Gupta

An Empirical Study of Reliability Growth of Open versus Closed Source Software through Software Reliability Growth Models	356
---------------------------------------------------------------------------------------------------------------------------------	-----

Najeeb Ullah and Maurizio Morisio

An Empirical Analysis of the Impact of Comment Statements on Fault-Proneness of Small-Size Module	362
---------------------------------------------------------------------------------------------------------	-----

Hirohisa Aman

Diffusion of Software Features: An Exploratory Study	368
<i>Ferdian Thung, David Lo, and Lingxiao Jiang</i>	

Incorporating Expert Judgment into Regression Models of Software Effort Estimation	374
------------------------------------------------------------------------------------------	-----

Masateru Tsunoda, Akito Monden, Jacky Keung, and Kenichi Matsumoto

A Model-Driven Prototype Evaluation to Elicit Requirements for a Sensemaking Support Tool	380
-------------------------------------------------------------------------------------------------	-----

Fan Yang-Turner, Lydia Lau, and Vania Dimitrova

Session 5B: Empirical Software Engineering II

Software Development Practices in New Zealand	386
<i>Diana Kirk and Ewan Tempero</i>	

An Exploratory Study of API Usage Examples on the Web	396
<i>Lijie Wang, Yanzhen Zou, Lu Fang, Bing Xie, and Fuqing Yang</i>	

An Overview of Software Defect Density: A Scoping Study	406
<i>Syed Muhammad Ali Shah, Maurizio Morisio, and Marco Torchiano</i>	

Session 6A: Requirements Engineering II

Software Requirements Triage and Selection: State-of-the-Art and State-of-Practice	416
<i>Mahvish Khurum, Niroopa Uppalapati, and Ramya Chowdary Veeramachaneni</i>	

Software Architecture Matching by Meta-model Extension and Refinement	422
<i>Luxi Chen, Linpeng Huang, Chen Li, and Weichao Luo</i>	

Efficient Modelling of Embedded Software Systems and their Formal Verification	428
<i>Vladimir Estivill-Castro, René Hexel, and David A. Rosenblueth</i>	

Model Transformation Patterns for Introducing Suitable Information Systems	434
<i>Haruhiko Kaiya, Shunsuke Morita, Shinpei Ogata, Kenji Kaijiri, Shinpei Hayashi, and Motoshi Saeki</i>	

A Problem Oriented Approach to Modeling Feedback Loops for Self-Adaptive Software Systems	440
<i>Chun Liu, Wei Zhang, Haiyan Zhao, and Zhi Jin</i>	

Capturing Strategic Business Requirements: An Exploratory Study	446
<i>Abdul Babar and Bernard Wong</i>	

Session 6B: Software Systems and Management

An Integrated Risk Analysis Method Using Spatial Interpolation	452
<i>Peng Zhou and Hareton K.N. Leung</i>	

Who is Accountable for Asynchronous Exceptions?	462
<i>Benjamin Morandi, Sebastian Nanz, and Bertrand Meyer</i>	

Pattern-Based Model Transformation Using QVT	472
<i>Sunuk Park, Dae-Kyoo Kim, and Sooyong Park</i>	

Session 7A: Formal Methods II

Behavioural Analysis for Distributed Simulations	482
<i>Patrice Carle, Christine Choppy, Romain Kervarac, and Ariane Piel</i>	
Extending Linden Scripting Language on OpenSim	488
<i>Bo Sun, Xiaohong Zhang, and Hao Wu</i>	
Architecture Based Development with DYNACOMM: Incorporating Dynamic Reconfiguration and Hierarchical Design into CommUnity	493
<i>Xiang Ling and Tom Maibaum</i>	
Calculating Preconditions for Parallel Workflows	499
<i>Chen-Wei Wang</i>	
A Formal Approach for the Iterative Design of Behavioural Models	505
<i>Chen-Wei Wang</i>	
Invariant-preserved Transformation of State Machines from Equations into Rewrite Rules	511
<i>Min Zhang and Kazuhiko Ogata</i>	

Session 7B: Software Maintenance and Evolution II

Comparison of Seven Bug Report Types: A Case-Study of Google Chrome Browser Project	517
<i>Sangeeta Lal and Ashish Sureka</i>	
Javelus: A Low Disruptive Approach to Dynamic Software Updates	527
<i>Tianxiao Gu, Chun Cao, Chang Xu, Xiaoxing Ma, Linghao Zhang, and Jian Lu</i>	
Pattern-Based Dynamic Maintenance of Software Systems	537
<i>Hadaytullah, Allan Grgersen, and Kai Koskimies</i>	

Session 8A: Software Analysis, Understanding and Quality Measurement

Software Feature Location Based on Topic Models	547
<i>Kunming Nie and Li Zhang</i>	
A Verification Method of Elicited Software Requirements Using Requirements Ontology	553
<i>Dang Viet Dzung and Atsushi Ohnishi</i>	
Permission Assurance for Semantic Aspects of Design Patterns	559
<i>Yang Zhao, Lingnan Song, Gongxuan Zhang, and John Boyland</i>	
Software Project Team Characteristics and Team Performance: Team Motivation as a Moderator	565
<i>Pei-Chi Chen, Ching-Chin Chern, and Chung-Yang Chen</i>	

An Approach to Estimating Cost of Running Cloud Applications Based on AWS 571

Huibong He, Zhiyi Ma, Xiang Li, Hongjie Chen, and Weizhong Shao

A Case Study on Specifying Quality Requirements Using a Quality Model 577

K. Lochmann, D. Méndez Fernández, and S. Wagner

Session 8B: Software Architecture and Design

A Change Impact Analysis Approach for the Software Development Phase 583

Nazri Kama and Faizul Azli

Studying the Understandability of Aspect State Machines through the Weaving

Activity 593

Shaukat Ali and Tao Yue

Towards Tool Integration through Artifacts and Roles 603

*Weiqing Zhang, Vincent Leildé, Birger Møller-Pedersen, Joël Champeau,
and Christophe Guychard*

Session 9A: Formal Methods III

On Accelerating SMT-based Bounded Model Checking of HSTM Designs 614

*Weiqiang Kong, Leyuan Liu, Yoriyuki Yamagata, Kenji Taguchi, Hitoshi Ohsaki,
and Akira Fukuda*

Hybrid Interface Automata 624

Yan Zhang and Tian Zhang

Parametric Transformations for Flexible Analysis 634

Juliana Bowles and Dulani Meedeniya

Using Monterey Phoenix to Formalize and Verify System Architectures 644

Jiexin Zhang, Yang Liu, Mikhail Auguston, Jun Sun, and Jin Song Dong

Session 9B: Formal Methods IV

An Approach to Low-fidelity Prototyping Based on SOFL Informal Specification 654

Fauzia Binti Zainuddin and Shaoying Liu

An Algebraic Approach to Formal Analysis of Dynamic Software Updating
Mechanisms 664

Min Zhang, Kazuhiko Ogata, and Kokichi Futatsugi

Proving Liveness Property under Fairness Requirements 674

Teng Long and Wenhui Zhang

Debug Concurrent Programs with Visualization and Inference of Event Structure 683

Xiaoquan Wu, Jun Wei, and Xu Wang

Session 10A: Emerging Ideas I

Importance Sampling of Runtime Interference	693
<i>Shin Nakajima</i>	
Model-Based Software Architecture Evolution and Evaluation	697
<i>Ana Dragomir and Horst Lichter</i>	
Proactive Enforcement of Data Consistency by Business Processes	701
<i>Xi Liu, Jianwen Su, and Xuandong Li</i>	
Syntax Map: A Modeling Language for Capturing Requirements of Graphical DSML	705
<i>Hyun Cho, Jeff Gray, and Eugene Syriani</i>	
Understanding OSS Peer Review Roles in Peer Review Social Network (PeRSOn)	709
<i>Xin Yang, Raula Gaikovina Kula, Camargo Cruz Ana Erika, Noribiro Yoshida, Kazuki Hamasaki, Kenji Fujiwara, and Hajimu Iida</i>	
Toward Comprehension of Side Effects in Framework Applications as Feature Interactions	713
<i>Izuru Kume, Masahide Nakamura, and Etsuya Shibayama</i>	

Session 10B: Emerging Ideas II

Mining Software Revision History Using Advanced Social Network Analysis	717
<i>Bharath Cheluvaraju, Kartikay Nagal, and Anjaneyulu Pasala</i>	
Empowering Non-conservative Parallelizing Refactoring by Non-monotonic Reasoning	721
<i>Mikhail Chalabine</i>	
A Guided Mashup Framework for Rapid Software Analysis Service Composition	725
<i>Chaman Wijesiriwardana, Giacomo Ghezzi, and Harald Gall</i>	
Factorising the Multiple Fault Localization Problem: Adapting Single-Fault Localizer to Multi-fault Programs	729
<i>Cheng Gong, Zheng Zheng, Yunqian Zhang, Zhenyu Zhang, and Yunzhi Xue</i>	
A Visualization Technique for Metrics-Based Hierarchical Quality Models	733
<i>Uaychai Chotjaratwanich and Chonlameth Arpnikanondt</i>	

Session 11A: Software Process, Quality and Education

A Stochastic Simulation Model for Risk Management Process	737
<i>Peng Zhou and Hareton K.N. Leung</i>	
Automated Comparison of Process Improvement Reference Models Based on Similarity Metrics	743
<i>Simona Jeners, Horst Lichter, and Elena Pyatkova</i>	

Execution Plan for Software Engineering Education in Taiwan	749
<i>Jonathan Lee, Alan Liu, Yu Chin Cheng, Shang-Pin Ma, and Shin-Jie Lee</i>	

Analysis of Adaptive Policy-Based Approach to Avoid Policy Conflicts	754
<i>Abdehamid Abdelhadi Mansor, Wan M. N. Wan Kadir, Toni Anwar, and Shamsul Sabibuddin</i>	

Assessing Platform Suitability for Achieving Quality in Guest Applications	760
<i>Balwinder Sodhi and T.V. Prabhakar</i>	

Augmenting Product Lines	766
<i>Xiaorui Zhang, Øystein Haugen, and Birger Møller-Pedersen</i>	

Session 11B: Software Quality Assurance and Component-Based Systems

Towards a Better Understanding of Testing if Conditionals	772
<i>Shimul Kumar Nath, Robert Merkel, Man Fai Lau, and Tanay Kanti Paul</i>	

Search Based Combinatorial Testing	778
<i>Changhai Nie, Huayao Wu, Yalan Liang, Hareton Leung, Fei-Ching Kuo, and Zheng Li</i>	

Modeling Executable Test Actors: Exploratory Study Done in Executable and Translatable UML	784
<i>Rogardt Heldal, Daniel Arvidsson, and Fredrik Persson</i>	

PBDDR: Probe-Based Deadlock Detection and Recovery Strategy for Component-Based Systems	790
<i>Chen Li, Linpeng Huang, Luxi Chen, Weichao Luo, and Xu Li</i>	

A Graph-Based Approach to Web Service Matchmaking	796
<i>Shang-Pin Ma and Jonathan Lee</i>	

BuOA: An Architecture Style for Modular Web Applications	802
<i>Wei Ye, Ruici Luo, Shikun Zhang, Xueyang Liu, and Wenhui Hu</i>	

Session 12A: Empirical Software Engineering III

Assessing the Representativeness of Open Source Projects in Empirical Software Engineering Studies	808
<i>Hao Zhong, Ye Yang, and Jacky Keung</i>	

Investigating the Use of Duration-Based Moving Windows to Improve Software Effort Prediction	818
<i>Chris Lokan and Emilia Mendes</i>	

Classification of Software Transfers	828
<i>Claes Wohlin and Darja Šmite</i>	

A Heuristic Rule Reduction Approach to Software Fault-proneness Prediction	838
<i>Akito Monden, Jacky Keung, Shuji Morisaki, Yasutaka Kamei, and Ken-Ichi Matsumoto</i>	

Session 12B: Web-Based Software Engineering

Automated Insertion of Exception Handling for Key and Referential Constraints	848
<i>Kaiping Liu and Hee Beng Kuan Tan</i>	
Data Depedency Based Trust Evaluation for BPEL Processes	857
<i>Cuicui Liu, Bixin Li, Shanshan Qi, Xiaona Wu, and Rui Song</i>	
Engineering an Open-Web Educational Game Design Environment	867
<i>Navid Ahmadi, Mehdi Jazayeri, and Alexander Repenning</i>	
Web Platform API Design Principles and Service Contract	877
<i>Yonghong Chen, Xiwei Xu, and Liming Zhu</i>	
Author Index	887

2012 19th Asia-Pacific Software Engineering Conference

(APSEC 2012)

**Hong Kong, China
4 – 7 December 2012**

**Volume 2
Pages 1-166**



**IEEE Catalog Number: CFP12154-PRT
ISBN: 978-1-4673-4930-7**

2012 19th Asia-Pacific Software Engineering Conference

APSEC 2012

Table of Contents

Volume - 2

Message from the Chairs of SQAM 2012.....	viii
Message from the Chairs of SATA 2012.....	ix
Workshops Keynote	x

International Workshop on Software Quality and Management—SQAM 2012

SQAM-A: Process and Quality

Software Development Team Dynamics in SPI: A VSE Context	1
<i>Shuib Basri and Rory V. O'Connor</i>	
Metrics for Measuring the Quality of Modularization of Scala Systems	9
<i>Miguel Nicolas Gubitosi, Basava Raju M., and Allahbaksh M. Asadullah</i>	
Software Quality Construction: Empirical Study on the Role of Requirements, Stakeholders and Resources	17
<i>Frank Philip Seth, Erja Mustonen-Ollila, Ossi Taipale, and Kari Smolander</i>	
Constructing Traceability between Features and Requirements for Software	
Product Line Engineering	27
<i>Dongjin Yu, Peng Geng, and Wei Wu</i>	

SQAM-B: Maintenance and Tools

Relating Requirement and Design Variabilities	35
<i>Jean-Vivien Millo and S. Ramesh</i>	
Supporting Maintenance of Web Applications Using User-Centered Technique	43
<i>Siti Nor Asikin Kamalzaman, Sharifah Mashita Syed-Mohamad, Shahida Sulaiman, and Kamal Z. Zamli</i>	
Experimental Study of Quantitative Analysis of Maintenance Effort Using Program Slicing-Based Metrics	50
<i>Raula Gaikovina Kula, Kyohei Fushida, Noribiro Yoshida, and Hajimu Iida</i>	

On Accuracy-Performance Tradeoff Frameworks for Energy Saving: Models and Review	58
-------------------------------------------------------------------------------------------	----

Chunbai Yang, Changjiang Jia, W. K. Chan, and Y. T. Yu

Quality-Aware Academic Research Tool Development	66
--------------------------------------------------------	----

Hyun Cho, Jeff Gray, and Yu Sun

International Workshop on Software Analysis, Testing and Applications—SATA 2012

SATA-A: Testing

Light-Weight Test Oracles for Resource Leaks Based on Finalizers	73
------------------------------------------------------------------------	----

Ziying Dai, Xiaoguang Mao, Yuhua Qi, and Kerong Ben

Exploring an Approach to Model-Based Testing from Behavior Trees	80
------------------------------------------------------------------------	----

Niusha Hakimipour and Paul Strooper

Generation of Character Test Input Data Using GA for Functional Testing	87
-------------------------------------------------------------------------------	----

Nihar Sharma, Anjaneyulu Pasala, and Rupa Kommineni

Memory Modeling-Based Automatic Test Data Generation for String-Manipulating Programs	95
------------------------------------------------------------------------------------------------	----

Feiyu Li and Yunzhan Gong

SATA-B: Analysis

Understanding the Effects of Code Clones on Modularity in Software Systems	105
----------------------------------------------------------------------------------	-----

Liguo Yu, S. Ramaswamy, and A. Vaidyanathan

An Investigation on Software Bug-Fix Prediction for Open Source Software Projects—A Case Study on the Eclipse Project	112
--------------------------------------------------------------------------------------------------------------------------------	-----

*Akinori Ihara, Yasutaka Kamei, Akito Monden, Masao Ohira, Jacky Wai Keung,
Naoyasu Ubayashi, and Ken-Ichi Matsumoto*

Preprocessing of Metrics Measurement Based on Simplifying Program Structures	120
------------------------------------------------------------------------------------	-----

*Yui Sasaki, Tomoya Ishihara, Keisuke Hotta, Hideaki Hata, Yoshiki Higo,
Hiroshi Igaki, and Shinji Kusumoto*

Design Patterns Based Pre-processing of Source Code for Plagiarism Detection	128
------------------------------------------------------------------------------------	-----

Allabbaksh Asadullah, Basavaraju M., Ilan Stern, and Vasudev D. Bhat

An Interval-Based Model for Detecting Software Defect Using Alias Analysis	136
----------------------------------------------------------------------------------	-----

Hongbo Zhou, Dabai Jin, and Yunzhan Gong

Tutorials

A Survey of Domain Engineering	145
--------------------------------------	-----

Dines Bjørner

Requirements Engineering Based on REBOK (Requirements Engineering Body Of Knowledge) and Its Practical Guide	146
<i>Mikio Aoyama and Shinobu Saito</i>	
Product Line Requirements Reuse Based on Variability Management	148
<i>Mike Mannion and Hermann Kaindl</i>	
 Postgraduate Symposium	
A Two-Level Prioritization Approach for Regression Testing of Web Applications	150
<i>Deepak Garg, Amitava Datta, and Tim French</i>	
Query by Drawing Examples of UML Model	154
<i>Xuelin Zhang, Tian Zhang, and Xuandong Li</i>	
A Memory-Based Abstraction Approach to Handle Obfuscation in Polymorphic Virus	158
<i>Binh T. Nguyen, Binh T. Ngo, and Tho T. Quan</i>	
Towards Generating Local High-Coverage Tests for Evolving Software	162
<i>Yi Zhou, Mengxiang Lin, Yang Lu, and Xiaomei Hou</i>	
 Workshops Author Index	166