

2011 11th International Conference on Quality Software (QSIC 2011)

**Madrid, Spain
13 – 14 July 2011**



**IEEE Catalog Number: CFP11331-PRT
ISBN: 978-1-4577-0754-4**

2011 11th International Conference On Quality Software

QSIC 2011

Table of Contents

Message from the QSIC 2011 General Chair.....	viii
Message from the QSIC 2011 Programme Committee Chairs.....	ix
Message from WS-FMDS 2011 Programme Committee Chairs.....	x
QSIC 2011 Committees.....	xi
QSIC 2011 Programme Committee.....	xii
Additional Reviewers.....	xiv
Keynote Speakers.....	xv

Paper Session 1: Fault Localisation

Spectrum-Based Fault Localization: Testing Oracles are No Longer Mandatory	1
<i>Xiaoyuan Xie, W. Eric Wong, Tsong Yueh Chen, and Baowen Xu</i>	
A Dynamic Fault Localization Technique with Noise Reduction for Java Programs	11
<i>Jian Xu, W.K. Chan, Zhenyu Zhang, T.H. Tse, and Shanping Li</i>	
On Practical Adequate Test Suites for Integrated Test Case Prioritization and Fault Localization	21
<i>Bo Jiang, W.K. Chan, and T.H. Tse</i>	

Paper Session 2A: Testing and Defect Detection

Evolutionary Generation of Whole Test Suites	31
<i>Gordon Fraser and Andrea Arcuri</i>	
A Search-Based OCL Constraint Solver for Model-Based Test Data Generation	41
<i>Shaukat Ali, Muhammad Zohaib Iqbal, Andrea Arcuri, and Lionel Briand</i>	
Context-Sensitive Interprocedural Defect Detection Based on a Unified Symbolic Procedure Summary Model	51
<i>Yunshan Zhao, Yunzhan Gong, Li Liu, Qing Xiao, and Zhaohong Yang</i>	
Static Detection of Bugs Caused by Incorrect Exception Handling in Java Programs	61
<i>Xiaoquan Wu, Zhongxing Xu, and Jun Wei</i>	

Paper Session 2B: Performance, Real-Time and Safety

An Automatic Performance Modeling Approach to Capacity Planning for Multi-service Web Applications	67
<i>Xiang Huang, Wei Wang, Wenbo Zhang, Jun Wei, and Tao Huang</i>	
Model-Driven Design of Performance Requirements	76
<i>Antonio García-Domínguez, Inmaculada Medina-Bulo, and Mariano Marcos-Bárcena</i>	
Towards Balancing Determinism, Memory Consumption and Throughput for RTSJ-Based Real-Time Applications	86
<i>Xiaowei Zhang, Donggang Cao, Hong Mei, and Fuqing Yang</i>	
Parameterised Argument Structure for GSN Patterns	96
<i>Yutaka Matsuno and Kenji Taguchi</i>	

Paper Session 3: Measurement

An Information Retrieval Based Approach for Measuring Service Conceptual Cohesion	102
<i>Ali Kazemi, Ali Rostampour, Amin Zamiri, Pooyan Jamshidi, Hassan Haghghi, and Fereidoon Shams</i>	
The Application of a New Process Quality Measurement Model for Software Process Improvement Initiatives	112
<i>A. Selcuk Guceglioglu and Onur Demirors</i>	

Paper Session 4A: Model Based Testing

The IntiSa Approach: Test Input Data Generation for Non-primitive Data Types by Means of SMT Solver Based Bounded Model Checking	121
<i>Stefan J. Galler, Thomas Quaritsch, Martin Weiglhofer, and Franz Wotawa</i>	
A Comparison of Test Generation Algorithms for Testing Application Interactions	131
<i>Antti Nieminen, Antti Jääskeläinen, Heikki Virtanen, and Mika Katara</i>	
FSM-Based Test Derivation Strategies for Systems with Time-Outs	141
<i>M. Zhigulin, N. Yevtushenko, S. Maag, and A. Cavalli</i>	
Towards Impact Analysis of Test Goal Prioritization on the Efficient Execution of Automatically Generated Test Suites Based on State Machines	150
<i>Stephan Weißleder</i>	

Paper Session 4B: Validation, Evaluation, and Transformation

Validation of Embedded Systems Behavioral Models on a Component-Based Ericsson Nikola Tesla Demonstrator	156
<i>Aneta Vulgarakis, Cristina Seceleanu, Paul Pettersson, Ivan Skuliber, and Darko Huljenic</i>	
A Comparative Evaluation of Cache Strategies for Elastic Caching Platforms	166
<i>Xiulei Qin, Wenbo Zhang, Wei Wang, Jun Wei, Hua Zhong, and Tao Huang</i>	

Improving the Modifiability of the Architecture of Business Applications	176
<i>Xulin Zhao, Foutse Khomh, and Ying Zou</i>	
BAM: A Requirements Validation and Verification Framework for Business Process Models	186
<i>Sven Feja, Sören Witt, and Andreas Speck</i>	
Paper Session 5A: Quality and Security	
Data Quality Maintenance by Integrity-Preserving Repairs that Tolerate Inconsistency	192
<i>Hendrik Decker</i>	
Quality Requirements Analysis Using Requirements Frames	198
<i>Haruhiko Kaiya and Atsushi Ohnishi</i>	
Automatic Checking of Quality Best Practices in Software Development Documents	208
<i>Andreas Dautovic, Reinhold Plösch, and Matthias Saft</i>	
A Hierarchical Security Assessment Model for Object-Oriented Programs	218
<i>Bandar Alshammari, Colin Fidge, and Diane Corney</i>	
Paper Session 5B: Workshop WS-FMDS	
Implementing Service Collaboration Based on Decentralized Mediation	228
<i>Xiaoqiang Qiao and Jun Wei</i>	
Program Debugging Using Constraints—Is it Feasible?	236
<i>Franz Wotawa and Mihai Nica</i>	
Saving Time in a Space-Efficient Simulation Algorithm	244
<i>J. Markovski</i>	
Formal and Model-Based Testing of Concurrent Workflows	252
<i>Chen-Wei Wang, Alessandra Cavarra, and Jim Davies</i>	
Author Index	260