



# QSIC 2007

SEVENTH INTERNATIONAL CONFERENCE ON QUALITY SOFTWARE  
 PORTLAND, OREGON, USA  
 OCTOBER 11 – 12, 2007

## FINAL PROGRAM

<b>Time</b>	<b>Wednesday, October 10, 2007</b>
4:30pm – 6:00pm	Registration

<b>Time</b>	<b>Thursday, October 11, 2007</b>		
8:00am – 8:30am	Registration		
8:30am – 9:00am	<b>Opening</b> General Chair and Program Co-Chairs		
9:00am – 10:00am	<b>Keynote Speech 1</b> Can Concurrent Software Ever Be Quality Software? <i>Edward A. Lee</i> <b>Chair of EECS and Robert S. Pepper Distinguished Professor</b> UC Berkeley		
10:00am – 10:30am	Coffee Break		
10:30am – 12:30pm	<b>Session 1A Software Testing 1</b>  Testing Non-Functional Requirements with Aspects: An Industrial Case Study ( <i>J. Metsa, M. Katara, and T. Mikkonen</i> ) Test Case Prioritization based on Varying Testing Requirement Priorities and Test Case Costs ( <i>X. Zhang, C. Nie, B. Xu, and B. Qu</i> ) Improving Model-Checkers for Software Testing ( <i>G. Fraser and F. Wotawa</i> ) Test-Driven Component Integration with UML 2.0 Testing and Monitoring Profile ( <i>D. Liang and K. Xu</i> )	<b>Session 1B Distributed Systems</b>  A QoS-enabled WorkManager Model for Web Application Servers ( <i>W. Wang, W. Zhang, J. Wei, and T. Huang</i> ) Towards Automatic Measurement of Probabilistic Processes ( <i>L. Song, Y. Deng, and X. Cai</i> ) A Pattern-based Constraint Description Approach for Web Services ( <i>Q. Wang, M. Li, N. Meng, Y. Liu, and H. Mei</i> )	<b>Session 1C Short Papers – Software Quality and Reliability</b>  Quality Assurance in Web Information Systems Development Projects ( <i>K.-D. Schewe, J. Zhao, and B. Thalheim</i> ) AOP Based Trustable SLA Compliance Monitoring for Web Services ( <i>C. Chen, L. Li, and J. Wei</i> ) A Multivariate Analysis of Static Code Attributes for Defect Prediction ( <i>B. Turhan and A. Bener</i> ) Refinement of a tool to assess the data quality in Web portals ( <i>A. Caro, C. Calero, J. E. de Salamanca, and M. Piattini</i> ) Formal Embedded Operating System Model based on Resource-Based Design Framework ( <i>J.-H. Kim, J.-H. Sim, C.-J. Kim, and J.-Y. Choi</i> ) Systematic Development of Quality Aware Decentralised Service-Oriented Systems ( <i>L. Chan and S. Karunasekera</i> )
12:30pm – 2:00pm	Lunch		
2:00pm – 3:00pm	<b>Keynote Speech 2</b> <i>S. Heddaya</i> <b>Head of Windows OS Reliability</b> Microsoft		
3:00pm – 3:30pm	Coffee Break		
3:30pm – 5:30pm	<b>Session 2A Software Security, Model Construction and Checking</b>  Security Requirements Elicitation via Weaving Scenarios based on Security Evaluation Criteria ( <i>H. Itoga and A. Ohnishi</i> ) Model Checking Security Pattern Compositions ( <i>J. Dong, T. Peng, and Y. Zhao</i> ) Real-Time Component Composition using Hierarchical Timed Automata ( <i>X. Jin, H. Ma, and Z. Gu</i> ) A Modeling-Driven Approach for Dependable Software Systems ( <i>M. Jiang and Z. Yang</i> )	<b>Session 2B Short Papers – Software Testing 2</b>  An Automated Approach to System Testing based on Scenarios and Operation Contracts ( <i>N. Raza, A. Nadeem, and M. Zohaib Z. Iqbal</i> ) Architectural Test Coverage for Component-based Integration Testing ( <i>N. L. Hashim, S. Ramakrishnan, and H. W. Schmidt</i> ) An Approach to Integration Testing for Object-Oriented Programs ( <i>Z. Li and T. Maibaum</i> ) Distribution Metric Driven Adaptive Random Testing ( <i>T.Y. Chen, F.-C. Kuo, and H. Liu</i> ) Uniform Path Selection of Feasible Paths as a Stochastic Constraint Problem	<b>Session 2C Short Papers – Software Architecture and Components</b>  Towards a Software Component Certification Framework ( <i>A. Alvaro, E. S. de Almeida, and S.L. Meira</i> ) Reduction of Complexity and Automation of Parallel Execution through Loop Level Parallelism ( <i>R.A. Teffi and R.Y. Lee</i> ) An Incremental and FCA-based Ontology Construction Method for Semantics-based Component Retrieval ( <i>X. Peng and W. Zhao</i> ) Trustworthiness Evaluation and Testing of Open Source Components ( <i>A. Immonen and M. Palviainen</i> ) Testability and Test Framework for Collaborative Real-time Editing Tools

		<p>(M. Petit and A. Gottlieb)  White box pairwise test case generation  (J. Kim, K. Choi, D. Hoffman, and G. Jung)  An Effective Iterative Metamorphic Testing Algorithm Based on Program Path Analysis (G. Dong, C. Nie, B. Xu, and L. Wang)</p>	<p>(L. Yu, L. Xu, G. Wang, C. Chi, W. Xiao, and H. Su)  Cohesion Metrics for Predicting Maintainability of Service-Oriented Software (M. Pereplechikov, C. Ryan, and K. Frampton)</p>
7:00pm – 10:00pm	<b>Conference Banquet</b>		

Time	Friday, October 12, 2007		
8:30am – 10:30am	<p align="center"><b>Distinguished Plenary Panel</b>  <b>Software Quality: Past, Present, and Future</b></p> <p><b>Panel Chair:</b> Suraj C. Kothari, Iowa State University, USA  <b>Panelists:</b> Nelson Ludlow, Mobilisa, USA  Raymond A. Paul, Department of Defense, USA  Phillip C.-Y. Sheu, University of California at Irvine, USA  Stephen S. Yau, Arizona State University, USA</p>		
10:30am – 11:00am	Coffee Break		
11:00am – 12:30pm	<p><b>Session 3A Software Testing 3</b></p> <p>Nondeterministic Testing with Linear Model-Checker Counterexamples (<i>G. Fraser and F. Wotawa</i>)  Detecting Double Faults on Term and Literal in Boolean Expressions (<i>M.F. Lau, Y. Liu, and Y.T. Yu</i>)  Alternative beta-sequences (<i>L. Duan and J. Chen</i>)</p>	<p><b>Session 3B Embedded Systems</b></p> <p>A resource scheduling design method with model checking for distributed embedded software (<i>M. Watanabe, A. Fukuda, M. Matsumoto, H. Yatsu, I. Hosotani, and S. Kido</i>)  OPTIMA: an Ontology-based Platform-specific software Migration Approach (<i>H. Zhou, J. Kang, F. Chen, and H. Yang</i>)  A certified infinite norm for the implementation of elementary functions (<i>S. Chevillard and C. Lauter</i>)</p>	<p><b>Tutorial 1: Design for Trustworthy Software: Delivering Better Software Cheaper and Faster</b>  <b>Bijay Jayaswal, Agilently Consulting Group, USA</b>  <b>Peter Patton, University of St. Thomas, USA</b></p>
12:30pm – 2:00pm	Lunch		
2:00pm – 3:30pm	<p><b>Session 4A Component-based Systems</b></p> <p>A Reinforcement-learning Approach to Failure-detection Scheduling (<i>F. Zeng</i>)  Coping with API Evolution for Running, Mission-Critical Applications Using Virtual Execution Environment (<i>B. Gharaibeh, T. N. Nguyen, and J. Morris Chang</i>)  Synthesizing Component-Based WSN Applications via Automatic Combination of Code Optimization Techniques (<i>Z. Zhang, W.K. Chan, and T.H. Tse</i>)</p>	<p><b>Session 4B Software Quality</b></p> <p>Metrics and Evolution in Open Source Software (<i>Y. Lee, J. Yang, and K.H. Chang</i>)  Failure Analysis of Open Source J2EE Application Servers (<i>J. Li, G. Huang, J. Zou, and H. Mei</i>)  Automatic Quality Assessment of SRS Text by Means of a Decision-Tree-Based Text Classifier (<i>I. Hussain, O. Ormandjieva, and L. Kosseim</i>)</p>	<p><b>STEV 2007 – Session 1</b></p> <p>Learning Effective Oracle Comparator Combinations for Web Applications (<i>S. Sprenkle, E. Gibson, and L. Pollock</i>)  Testing Against Natural Language Requirements (<i>H. Sneed</i>)  Test-based Specification of Components and Systems (<i>D. Hamlet</i>)</p>
3:30pm – 4:00pm	Coffee Break		
4:00pm – 5:30pm	<p><b>Session 5 Short Papers – Systems Modeling, Model Construction and Checking</b></p> <p>On the Collaborative Development of Para-consistent Conceptual Models (<i>E. Bagheri and A.A. Ghorbani</i>)  Increasing Software Effort Estimation Accuracy - Using Experience Data, Estimation Models and Checklists (<i>K. M. Furulund and K. Moløkken-Østvold</i>)  A Denotational Semantic Model for Validating JVM/CLDC Optimizations under Isabelle/HOL (<i>H. Yahyaoui, M. Debbabi, and N. Tawbi</i>)  Verifying UML Diagrams With Model Checking: A Rewriting Logic Based Approach (<i>F. Mokhati, P. Gagnon, and M. Badri</i>)  Verifying Noninterference in a Cyber-Physical System – The Advanced Electric Power Grid (<i>Y. Sun, B. McMillin, X. Liu, and D. Cape</i>)</p>	<p><b>Tutorial 2: Adaptive Random Testing: More Than Just Random Testing</b>  <b>T.Y. Chen, Swinburne University of Technology, Australia</b></p>	<p><b>STEV 2007 – Session 2</b></p> <p>A Scriptable, Statistical Oracle for a Metadata Extraction System (<i>K.J. Maly, S.J. Zeil, M. Zubair, A. Amrou, A. Aazahr, and N. Ratkal</i>)  Statistical Metamorphic Testing: Testing Programs with Random Output by Means of Statistical Hypothesis Tests and Metamorphic Testing (<i>R. Guderlei and J. Mayer</i>)  Abstraction in Assertion-based Test Oracles (<i>Y. Cheon</i>)  <b>Position Paper:</b> The Oracle Problem for Testing against Quantified Properties (<i>P. D. L. Machado and W. L. Andrade</i>)</p>