QSIC 2008
8th International Conference on
Quality Software

Technical Program

August 12–13, 2008
St. Edmund Hall, Queen’s Lane
Oxford, England
### QSIC 2008 Programme

#### Overview

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<td>Session 1: Software Testing Process</td>
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<td>9:30-10:30</td>
<td>Keynote 2. Rob Hierons: Testing in The Distributed Test Architecture</td>
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<td>Session 12: Software Architecture</td>
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<td>6:00-8:00</td>
<td>Social Event: Oxford City Science Walk</td>
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<td>8:00-10:00</td>
<td>Victory Party (PC members and invited delegates)</td>
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QSIC 2008 Technical Programme

11 August 2008 (Monday) Afternoon

3:30-6:30  Registration

12 August 2008 (Tuesday) Morning

8:30-9:30  Registration

9:30-9:50  Opening Session. Chair: Marie-Claude Gaudel, Université de Paris-Sud, France
           Message from the General Chair. Marie-Claude Gaudel
           Message from the Program Chair. Hong Zhu

9:50-10:50  Plenary Session

Keynote 1:  Chair: Marie-Claude Gaudel, Université de Paris-Sud, France
           Novel Applications of Machine Learning in Software Testing
           Lionel Claude Briand, Simula Research Laboratory and University of Oslo, Norway

10:50-11:20  Coffee break

11:20-1:00  Parallel Sessions

Session 1:  Software Testing Process. (11:20 -- 1:00, Room A)
           Chair: Aiman Hanna, Concordia University, Canada
           Optimizing Test Process Action Plans by Blending Testing Maturity Model and Design of Experiments
           Hyejin Oh, Byoungju Choi, EWHA Womans University, Korea
           Hyuksoo Han, Sangmyung University, Korea
           W. Eric Wong, University of Texas at Dallas, USA
           Bridging the Concept to Implementation Gap in Software System Testing
           Harry Sneed, SORING Kft., Hungary

Session 2:  Security. (11:20 -- 1:00, Room B)
           Chair: Hongji Yang, De Montfort University, UK
           MUSIC: Mutation-based SQL Infection Vulnerability Checking
           Hossain Shahriar and Mohammad Zulkernine, Queen’s University, Canada
           An Approach for Generation of J2EE Access Control Configurations from Requirements Specification
           Lianshan Sun, Gang Huang, Yanchun Sun, Hui Song and Hong Mei, Key Laboratory of High Confidence Software Technologies, Peking University, China
           Targeting Security Vulnerabilities: From Specification to Detection (Short paper)
           Aiman Hanna, Haizhou Ling, Jason Furlong, Zhenrong Yang and Mourad Debbabi, Computer Security Laboratory, CISE, Concordia University, Canada

Session 3:  Formal Methods. (11:20 -- 1:00, Room C)
           Chair: Kenji Taguchi, National Institute of Informatics, Japan
           Integrating Top-Down and Scenario-Based Methods for Constructing Software Specifications
           Shaoying Liu, Hosei University, Japan
           Path-Sensitive Reachability Analysis of Web Service Interfaces (Short paper)
           Xutao Du, Chunxiao Xing and Lizhu Zhou, Tsinghua University, China
           SMT-based Bounded Model Checking for Real-time Systems (Short paper)
           Liang Xu, State Key Laboratory of Computer Science, Institute of Software, Chinese Academy of Sciences, and Graduate University of Chinese Academy of Sciences, China
           Verifying Business Process Compatibility (Short paper)
           Peter Wong and Jeremy Gibbons, University of Oxford, UK

1:00-2:00  Lunch
12 August 2008 (Tuesday) Afternoon

2:00-3:30 Parallel Sessions

Session 4: Testing Techniques and Methods. (2:00 -- 3:30, Room A)
Chair: Hans-Dieter Ehrich, Technische Universitaet Braunschweig, Germany

Using Machine Learning to Refine Black-Box Test Specifications and Test Suites
Lionel Briand, Simula Research Laboratory and University of Oslo, Norway
Yvan Labiche and Zaheer Bawar, Carleton University, Squall Lab, Canada

Does Adaptive Random Testing Deliver a Higher Confidence than Random Testing?
T.Y. Chen, Fei-Ching Kuo, Huai Liu, Swinburne University of Technology, Australia
W. Eric Wong, University of Texas at Dallas, USA

Greedy Heuristic Algorithms to Generate Variable Strength Combinatorial Test Suite
Ziyuan Wang, Baowen Xu and Changhai Nie, Southeast University, China

Session 5: Static and Dynamic Analysis. (2:00 -- 3:30, Room B)
Chair: Ian Bayley, Oxford Brookes University, UK

An Object Oriented Approach towards Dynamic Data Flow Analysis (Short paper)
A. Cain, T.Y. Chen, Douglas D. Grant, Fei-Ching Kuo and Jean-Guy Schneider, Swinburne University of Technology, Australia

An approach to merge results of multiple static analysis tools (Short paper)
Na Meng, Qianxiang Wang, Qian Wu and Hong Mei, Peking University, China

Performance Analysis of a Composition of Middleware Patterns (Short paper)
Paul J. Vandal and Swapna S. Gokhale, Univ. of Connecticut, USA

Abstracting Execution Logs to Execution Events for Enterprise Applications (Short paper)
Zhen Ming Jiang, Ahmed E. Hassan, Queen’s University, Canada
Parminder Flora and Gilbert Hamann, Research In Motion, Canada

Workshop: ISEAT 2008 (2:00 -- 3:30, Room C)

The Third International Workshop on Integration of Software Engineering and Agent Technologies.
Co-chairs: Michael Winikoff, RMIT University, Australia
Zhi Jin, Academy of Mathematics and Systems Science, Chinese Academy of Sciences, China
Hong Zhu, Oxford Brookes University, UK

An Agent-based Middleware for Adaptive Systems
Nauman Qureshi and Anna Perini, IRST, Italy

Dynamic Event/Fault Tree Analysis of Multi-Agent Systems using Galileo
Josh Dehlinger and Joanne Dugan, University of Virginia, USA

A UML Heavyweight Extension for MAS Modeling
Manar El-Kady, Reem Bahgat and Aly Fahmy, Cairo University, Egypt

3:30-4:00 Tea Break
4:00-5:50 Parallel Sessions

Session 6: Specification-based Testing. (4:00 -- 5:50, Room A)

Chair: Victor Kuliamin, Russian Academy of Sciences, Russia

Reachability and Propagation for LTL Requirements Testing
  Gordon Fraser, Graz University of Technology, Austria
  Paul Ammann, George Mason University, USA

Coverage Based Testing with Test Purposes
  Martin Weighhofer, Gordon Fraser and Franz Wotawa, Graz University of Technology, Austria

A Boundary Checking Technique for Testing Real-Time Systems Modeled as Timed Input Output Automata (Short paper)
  Abdeslam En-Nouaary and Abdelwahab Hamou-Lhadj, Concordia University, Canada

Utilizing Formalization to Test Programs without Available Source Code (Short paper)
  Shaoying Liu, Hosei University, Japan

Session 7: Evolution and Software Process. (4:00 -- 5:50, Room B)

Chair: Thorsten Keuler, Fraunhofer Institute for Experimental Software Engineering (IESE), Germany

Developing Application Specific Ontology for Program Comprehension by Combining Domain Ontology with Code Ontology
  Hong Zhou, Feng Chen and Hongji Yang, De Montfort University, UK

Model-Based Quality Assurance of the SMB2 Protocol Documentation
  Wolfgang Grieskamp, Nicolas Kicillof, Dave MacDonald, Alok Nandan, Keith Stobie, Fred Wurden and Danpo Zhang, Microsoft Corporation,

On the Relationship between Software Aging and Related Parameters (Short paper)
  Yun-Fei Jia, Xiu-E Chen, Lei Zhao and Kai-Yuan Cai, Beijing University of Aeronautics and Astronautics, China

Web Application Development Lifecycle for Small Medium-sized Enterprises (SMEs) (Short paper)
  Wei Huang, University of Bedfordshire, UK
  Ru Li, Exxcom Ltd, UK
  Carsten Maple, University of Bedfordshire, UK
  Hongji Yang, De Montfort University, UK
  David Foskett, and Vince Cleaver, Exxcom Ltd, UK

Tutorial 1: Adaptive Random Testing, (4:00 -- 5:50, Room C)
  T. Y. Chen, Swinburne University of Technology, Australia

6:00-8:00 Social Event: Punting on Cherwell River
8:00-10:00 Conference Banquet
13 August 2008 (Wednesday) Morning

9:30-10:30  Plenary Session
Keynote 2:  Chair: T.H. Tse, The University of Hong Kong, Hong Kong
Testing in The Distributed Test Architecture
Rob Hierons, Brunel University, UK

10:30-11:00  Coffee break
11:00-12:40  Parallel Sessions
Session 8:  Software Reuse and Regression Testing. (11:00 -- 12:40, Room A)
Chair: Shaoying Liu, Hosei University, Japan
Looking for more Confidence in Refactoring? - How to Assess Adequacy of Your Refactoring Tests
Trung Dinh-Trong, Birgit Geppert, J. Jenny Li and Frank Roessler, Avaya Labs Research, USA
On Partitioning the Domain for Test-Case Reusability (Short paper)
Yunwei Dong, Northwestern Polytechnic University, China
Man Lau and Si-yu Lin, Australia
An Empirical Evaluation of Test Suite Reduction for Boolean Specifications-based Testing (Short paper)
Xiaofang Zhang, Baowen Xu, Zhenyu Chen and Leifang Li, Southeast University, Soochow University, Jiangsu Institute of Software Quality, China, China
Creating a Test Model Library for GUI Testing of Smartphone Applications (Short paper)
Antti Jääskeläinen, Antti Kervinen and Mika Katara, Tampere University of Technology, Finland

Session 9:  Measurement, Metrics and Assessment 1 . (11:00 -- 12:40, Room B)
Chair: Qianxiang Wang, Peking University, China
Steering the inspection process with prescriptive metrics and process patterns
Lasse Harjumaa, Ilkka Tervonen and Sirpa Salmela, University of Oulu, Finland
Towards an Assessment Method for Software Reuse Capability (Short paper)
Vinicius Cardoso Garcia, Liana Barachisio Lisboa, Silvio Romero de Lemos Meira, Recife Center for Advanced Studies and Systems, Federal University of Pernambuco, Brazil
Eduardo Santana de Almeida, Recife Center for Advanced Studies and Systems, Brazil
Daniel Lucr´edio, Renata Pontin de Mattos Fortes, S´ao Paulo University, Brazil
How to measure quality of software developed by subcontractors (Short paper)
Yoshihiro Iwami, Japan SPI Consortium, Japan
Towards a Method for Evaluating the Precision of Software Measures (Short paper)
Beatriz Marin, Nelly Condori-Fernández and Oscar Pastor Lopez, Universidad Politécnica de Valencia, Spain

Tutorial 2:  Architecture-based Assessment of Software Reliability, (11:00 -- 12:40, Room C)
Swapna S. Gokhale, University of Connecticut, USA; Veena B. Mendiratta, Alcatel-Lucent, USA

12:40-2:00  Lunch
13 August 2008 (Wednesday) Afternoon

2:00-3:00  Parallel Sessions

Session 10:  Service Orientation.  (2:00 -- 3:00, Room A)
Chair: Zhi Jin, Chinese Academy of Science, China

History Heuristic Based Negotiation of Service Level Agreements For Composite Service
Shiyang Ye, University of Science & Technology of China, and Institute of Software, the Chinese Academy of Sciences, China
Jun Wei, Institute of Software, the Chinese Academy of Sciences, China

Web Service Test Case Generation Based on Decision Table (Short paper)
Siripol Noikajana and Taratip Suwannasart, Chulalongkorn University, Thailand

Session 11:  Measurement, Metrics and Assessment 2.  (2:00 -- 3:00, Room B)
Chair: Lasse Harjumaa, University of Oulu, Finland

A Method for Measuring the Size of a Component-Based System Specification
Thareendhra Wijayasiriwardhane and Richard Lai, La Trobe University, Australia

Importance Measures for a Modular Software System (Short paper)
Swapna Gokhale and Lance Fiondella, Univ. of Connecticut, USA

3:00-3:30  Tea Break

3:30-5:50  Parallel Sessions

Session 12:  Software Architecture. (3:30 -- 5:50, Room A)
Chair: Richard Lai, La Trobe University, Australia

Architecture Compliance Checking at Runtime: An Industry Experience Report
Dharmalingam Ganesan, Fraunhofer Center for Experimental Software Engineering (CESE), USA
Thorsten Keuler, Fraunhofer Institute for Experimental Software Engineering (IESE), Germany
Yutaro Nishimura, Ricoh Ltd., Japan

Selecting a High-Quality Central Model for Sharing Architectural Knowledge
Peng Liang, Anton Jansen and Paris Avgeriou, University of Groningen, The Netherlands

Visual Software Architecture Description Based on Design Space
Zhang Qian, National University of Defense Technology, China

Mapping Software Architecture Specification to Rewriting Logic (Short paper)
Yujian Fu, Alabama A&M University, USA
Zhijiang Dong, Middle Tennessee State University, USA
Junhua Ding, East Carolina University, USA
Xudong He, Florida International University, USA

Session 13:  Faults and Failures.  (3:30 -- 5:50, Room B)
Chair: Edmonds Lau, Swinburne University of Technology, Australia

Fault Localization with Non-Parametric Program Behavior Model
Peifeng Hu, Zhenyu Zhang, The University of Hong Kong, Hong Kong
W.K. Chan, City University of Hong Kong, Hong Kong
T.H. Tse, The University of Hong Kong, Hong Kong

Linux Bugs: Life Cycle and Resolution Analysis
Mohamed Ahmed and Swapna Gokhale, University of Connecticut, USA

On Failure Propagation in Component-Based Software Systems
Atef Mohamed and Mohammad Zulkernine, Queen's University, Canada

Path and Context Sensitive Inter-procedural Memory Leak Detection
Zhongxing Xu and Jian Zhang, State Key Laboratory of Computer Science, Institute of Software, Chinese Academy of Sciences, China
A Coalgebraic Semantic Framework for Reasoning about UML Sequence Diagrams
Sun Meng, CWI, The Netherlands
Luis Barbosa, Department of Informatics, Minho University, Portugal

On the Composition of Design Patterns
Ian Bayley and Hong Zhu, Oxford Brookes University, UK

An executable interface specification for industrial embedded system design
Jinfeng Huang, Philips & LiteOn Digital Solutions Netherlands, Advanced Research Center, The Netherlands
Jeroen Voeten, Eindhoven University of Technology, Embedded Systems Institute, The Netherlands
Serge Wolfs, Philips & LiteOn Digital Solutions Netherlands, Advanced Research Center, The Netherlands

Model Transformation Specification and Verification
Kevin Lano and David Clark, King’s College London, UK

6:00-8:00 Social Event: Oxford City Science Walk
8:00-10:00 Victory Party (PC members and invited delegates)