

2011 IEEE 22nd International Symposium on Software Reliability Engineering

(ISSRE 2011)

**Hiroshima, Japan
29 November – 2 December 2011**



**IEEE Catalog Number: CFP11087-PRT
ISBN: 978-1-4577-2060-4**

2011 22nd IEEE International Symposium on Software Reliability Engineering

ISSRE 2011

Table of Contents

Message from the General Chair.....	viii
A Word from the Program Committee Chair.....	ix
Organizing Committee.....	x
Sponsors.....	xvii

Session 1: Software Security

Using Behavioral Profiles to Detect Software Flaws in Network Servers	1
<i>João Antunes and Nuno Fuentecilla Neves</i>	
Diversity for Security: A Study with Off-the-Shelf AntiVirus Engines	11
<i>Peter Bishop, Robin Bloomfield, Ilir Gashi, and Vladimir Stankovic</i>	
Server Side Detection of Content Sniffing Attacks	20
<i>Anton Barua, Hossain Shahriar, and Mohammad Zulkernine</i>	

Session 2: Software Safety

A Model-Driven Engineering Approach to Support the Verification of Compliance to Safety Standards	30
<i>Rajwinder Kaur Panesar-Walawege, Mehrdad Sabetzadeh, and Lionel Briand</i>	
The Early Identification of Detector Locations in Dependable Software	40
<i>Arshad Jhumka and Matthew Leeke</i>	
Experiences with Assurance Cases for Spacecraft Safing	50
<i>Elisabeth A Nguyen and Alex G. Ellis</i>	

Session 3: Data Driven Software Reliability Studies

Mining Cause-Effect-Chains from Version Histories	60
<i>Kim Herzig and Andreas Zeller</i>	
Statistical Evaluation of Complex Input-Output Transformations	70
<i>Gang Shu, Zhuofu Bai, and Andy Podgurski</i>	

Uncertainty Propagation through Software Dependability Models	80
<i>Kesari Mishra and Kishor S. Trivedi</i>	
Feature Interaction Faults Revisited: An Exploratory Study	90
<i>Brady J. Garvin and Myra B. Cohen</i>	
Session 4: Unit Testing	
JavaScript Errors in the Wild: An Empirical Study	100
<i>Frolin S. Ocariza Jr., Karthik Pattabiraman, and Benjamin Zorn</i>	
Efficiently Running Test Suites Using Abstract Undo Operations	110
<i>Shadi Abdul Khalek and Sarfraz Khurshid</i>	
PACOGEN: Automatic Generation of Pairwise Test Configurations from Feature Models	120
<i>Aymeric Hervieu, Benoit Baudry, and Arnaud Gotlieb</i>	
Adaptive Regression Testing Strategy: An Empirical Study	130
<i>Md. Junaid Arafeen and Hyunsook Do</i>	
Session 5: System Testing	
Impact Analysis of Configuration Changes for Test Case Selection	140
<i>Xiao Qu, Mithun Acharya, and Brian Robinson</i>	
A Hybrid Directed Test Suite Augmentation Technique	150
<i>Zhihong Xu, Yunho Kim, Moonzoo Kim, and Gregg Rothermel</i>	
LOFT: Redundant Synchronization Event Removal for Data Race Detection	160
<i>Yan Cai and W.K. Chan</i>	
An Empirical Study of JUnit Test-Suite Reduction	170
<i>Lingming Zhang, Darko Marinov, Lu Zhang, and Sarfraz Khurshid</i>	
Session 6: Formal Development and Analysis	
Rigorous Development of Dependable Systems Using Fault Tolerance Views	180
<i>Ilya Lopatkin, Alexei Iliasov, and Alexander Romanovsky</i>	
PAT 3: An Extensible Architecture for Building Multi-domain Model Checkers	190
<i>Yang Liu, Jun Sun, and Jin Song Dong</i>	
Safety Analysis of Trampoline OS Using Model Checking: An Experience Report	200
<i>Yunja Choi</i>	
Session 7: Software and System Reliability	
WSPred: A Time-Aware Personalized QoS Prediction Framework for Web Services	210
<i>Yilei Zhang, Zibin Zheng, and Michael R. Lyu</i>	

Software Reliability Growth Models Based on Local Polynomial Modeling with Kernel Smoothing	220
<i>L. Sandamali Dharmasena, P. Zeephongsekul, and Chathuri L. Jayasinghe</i>	
Efficient Analysis of Fault Trees with Voting Gates	230
<i>Jianwen Xiang, Kazuo Yanoo, Yoshiharu Maeno, Kumiko Tadano, Fumio Machida, Atsushi Kobayashi, and Takao Osaki</i>	
Session 8: Software Aging and Rejuvenation	
Workload Characterization for Software Aging Analysis	240
<i>Antonio Bovenzi, Domenico Cotroneo, Roberto Pietrantuono, and Stefano Russo</i>	
Optimal Resource Allocation in a Virtualized Software Aging Platform with Software Rejuvenation	250
<i>Javier Alonso, Íñigo Goiri, Jordi Guitart, Ricard Gavaldà, and Jordi Torres</i>	
Injecting Memory Leaks to Accelerate Software Failures	260
<i>Jing Zhao, Yuliang Jin, Kishor S. Trivedi, and Rivalino Matias Jr.</i>	
Author Index	270