

ISSTA 2012 Advance Program

Tuesday, July 17, 2012

08:45 – 09:00 Opening (Chair: Mats Heimdahl and Zhendong Su)

09:00 – 10:30 Keynote 1 (Chair: Zhendong Su)

Ensuring Secure Acceptable Execution via Comfort Zone Enforcement
Martin Rinard
(Massachusetts Institute of Technology, USA)

11:00 – 12:30 Session 1: Dynamic Analysis

RefaFlex: Safer Refactorings for Reflective Java Programs
Andreas Thies and Eric Bodden
(Fernuniversität in Hagen, Germany; TU Darmstadt, Germany)

THeME: A System for Testing by Hardware Monitoring Events
Kristen Walcott-Justice, Jason Mars, and Mary Lou Soffa
(University of Virginia, USA)

Multi-slicing: A Compiler-Supported Parallel Approach to Data Dependence Profiling
Hongtao Yu and Zhiyuan Li
(Purdue University, USA)

14:00 – 15:30 Session 2: Web Applications

Remedying the Eval that Men Do
Simon Holm Jensen, Peter A. Jonsson, and Anders Møller
(Aarhus University, Denmark)

State Aware Test Case Regeneration for Improving Web Application Test Suite Coverage and Fault Detection
Nadia Alshahwan and Mark Harman
(University College London, UK)

ViewPoints: Differential String Analysis for Discovering Client and Server-Side Input Validation Inconsistencies
Muath Alkhalaf, Tefvik Bultan, Shauvik Roy Choudhary, Mattia Fazzini, Alessandro Orso, and Christopher Kruegel
(UC Santa Barbara, USA; Georgia Tech, USA)

16:00 – 18:00 Session 3: Test Generation

Search-Based System Testing: High Coverage, No False Alarms
Florian Gross, Gordon Fraser, and Andreas Zeller
(Saarland University, Germany)

Swarm Testing
Alex Groce, Chaoqiang Zhang, Eric Eide, Yang Chen, and John Regehr
(Oregon State University, USA; University of Utah, USA)

Compositional Load Test Generation for Software Pipelines
Pingyu Zhang, Sebastian Elbaum, and Matthew Dwyer
(University of Nebraska-Lincoln, USA)

Combining Model-Based and Combinatorial Testing for Effective Test Case Generation
Cu Duy Nguyen, Alessandro Marchetto, and Paolo Tonella
(FBK, Italy)

Wednesday, July 18, 2012

09:00 – 10:30 Session 4: Security

A First Step Towards Algorithm Plagiarism Detection
Fangfang Zhang, Yoon-Chan Jhi, Dinghao Wu, Peng Liu, and Sencun Zhu
(Pennsylvania State University, USA; Samsung, Korea)

A Quantitative Study of Accuracy in System Call-Based Malware Detection
Davide Canali, Andrea Lanzi, Davide Balzarotti, Christopher Kruegel, Mihai Christodorescu, and Engin Kirda
(Eurecom, France; UC Santa Barbara, USA; IBM Research, USA; Northeastern University, USA)

Undangle: Early Detection of Dangling Pointers in Use-after-Free and Double-Free Vulnerabilities
Juan Caballero, Gustavo Grieco, Mark Marron, and Antonio Nappa
(IMDEA Software Institute, Spain; Universidad de Rosario, Argentina)

11:00 – 12:30 Session 5: Symbolic Execution

Memoized Symbolic Execution
Guowei Yang, Corina Pasareanu, and Sarfraz Khurshid
(University of Texas at Austin, USA; CMU, USA; NASA Ames, USA)

Abstracting Path Conditions
Jan Strejček and Marek Trtík
(Masaryk University, Czech Republic)

Probabilistic Symbolic Execution
Jaco Geldenhuys, Matthew Dwyer, and Willem Visser
(Stellenbosch University, South Africa; University of Nebraska, USA)

14:00 – 15:30 Session 6: Empirical Studies

A Human Study of Patch Maintainability
Zachary P Fry, Bryan Landau, and Westley Weimer
(University of Virginia, USA)

Understanding User Understanding: Determining Correctness of Generated Program Invariants
Matt Staats, Shin Hong, Moonzoo Kim, and Gregg Rothermel
(KAIST, Korea; University of Nebraska-Lincoln, USA)

Empirical Investigation of Search Algorithms for Environment Model-Based Testing of Real-Time Embedded Software
Muhammad Zohaib Iqbal, Andrea Arcuri, and Lionel Briand
(Simula Research Laboratory, Norway; Schlumberger, Norway; University of Luxembourg, Luxembourg)

16:00 – 18:00 Session 7: Concurrency

Testing Concurrent Programs to Achieve High Synchronization Coverage
Shin Hong, Jaemin Ahn, Sangmin Park, Moonzoo Kim, and Mary Jean Harrold
(KAIST, Korea; Georgia Tech, USA)

CARISMA: a Context-sensitive Approach to Race-condition sample-Instance Selection for Multithreaded Applications
Ke Zhai, Boni Xu, W. K. Chan, and T. H. Tse
(The University of Hong Kong, Hong Kong; City University of Hong Kong, Hong Kong)

Cooperative Types for Controlling Thread Interference in Java
Jaeheon Yi, Tim Disney, Stephen Freund, and Cormac Flanagan
(UC Santa Cruz, USA; Williams College, USA)

Finding Errors in Multithreaded GUI Applications
Sai Zhang, Hao Lu, and Michael D. Ernst
(University of Washington, USA)

Thursday, July 19, 2012

09:00 – 10:30 Keynote 2 (Chair: Mats Heimdahl)

Model-based Testing for Fun and Profit
Rance Cleaveland
(University of Maryland, College Park, USA)

11:00 – 12:30 Session 8: Static Analysis

Static Memory Leak Detection Using Full-Sparse Value-Flow Analysis
Yulei Sui, Ding Ye, and Jingling Xue
(University of New South Wales, Australia)

Static Detection of Brittle Parameter Typing
Michael Pradel, Severin Heiniger, and Thomas Gross
(ETH Zurich, Switzerland)

Measuring Enforcement Windows with Symbolic Trace Interpretation: What Well-Behaved Programs Say
Devin Coughlin, Bor-Yuh Evan Chang, Amer Diwan, and Jeremy Siek
(University of Colorado at Boulder, USA; Google, USA)

14:00 – 15:30 Session 9: Bug Detection and Diagnosis

Detecting Inconsistencies via Universal Reachability Analysis
Aaron Tomb and Cormac Flanagan
(Galois, USA; UC Santa Cruz, USA)

Residual Investigation: Predictive and Precise Bug Detection
Kaituo Li, Christoph Reichenbach, Christoph Csallner, and Yannis Smaragdakis
(University of Massachusetts, USA; University of Texas at Arlington, USA; University of Athens, Greece)

Isolating Failure Causes through Test Case Generation
Jeremias Rößler, Gordon Fraser, Andreas Zeller, and Alessandro Orso
(Saarland University, Germany; Georgia Tech, USA)

16:00 – 17:00 Session 10: Regression Testing

Efficient Regression Testing of Ontology-Driven Systems

Mijung Kim, Jake Cobb, Mary Jean Harrold, Tahsin Kurc, Alessandro Orso, Joel Saltz, Andrew Post, Kunal Malhotra, and Sham Navathe

(Georgia Tech, USA; Emory University, USA)

Regression Mutation Testing

Lingming Zhang, Darko Marinov, Lu Zhang, and Sarfraz Khurshid

(University of Texas at Austin, USA; University of Illinois at Urbana-Champaign, USA; Peking University, China)

17:00 – 17:15 Closing (Chair: Mats Heimdahl and Mauro Pezzè)