

Proseminar:
Software Analyse Verfahren und
Werkzeuge

Themenvorschläge

24.04.2017

Testen

- CUTE/JCUTE
 - Testing für Java (Concrete and symbolic)
 - CUTE: a concolic unit testing engine for C – Sen, Marinov, Agha, 2005
- ESC/Java
 - Check: Requirements als Code Annotationen
 - Extended Static Checking for Java – Flanagan, Leino, Lillibridge, Nelson, Saxe, Stata, 2002
- AFL Fuzzer
 - Input/Output Testgenerierung
 - Scheduling Black-box Mutational Fuzzing – Woo, Cha, Gottlieb, Brumley, 2013

Statische Analyse

- FindBugs
 - erkennt Bug-Idiome/Patterns
 - Finding Bugs is Easy – Hovemeyer, Pugh, 2004
- aiT
 - Worst Case Execution Time Analyse
 - The Worst-Case Execution-Time Problem – Overview of Methods and Survey of Tools – Wilhelm, Mitra, Engblom, Müller, Ermedahl, Puaut, Holsti, Puschner, Thesing, Staschulat, Whalley, Strenström, Bernat, Ferdinand, Heckmann, 2008

Verifikation

- Daikon
 - such nach Invarianten in C Programmen
 - Dynamically Discovering Likely Program Invariants to Support Program Evolution - Ernst, Cockrell, Griswold, 2001
- CPA Checker
 - konfigurierbare statische Analyse
 - Configurable Software Verification: Concretizing the Convergence of Model Checking and Program Analysis - Beyer, Henzinger, Théoduloz, 2007

Debugging

- VisualVM/AspectJ
 - Programm Profiler in Java
 - Profiling with AspectJ – Pearce, Webster, Berry, Kelly, 2007
- JIVE
 - Objekt- und Sequenzdiagramme mit Vor- und Zurückspulen
 - Temporal Data Model for Program Debugging – Lessa, Chomicki, Jayaraman, 2011

Software Maintenance

- CodeCity
 - Metriken und Visualisierung
 - Program Comprehension through Software Habitability – Wettel, Lanza, 2007
- Teamscale
 - Tool zur Kombination von verschiedenen Analysen
 - A Framework for Incremental Quality Analysis of Large Software Systems – Bauer, Heinemann, Hummel, Jürgens, Conradt, 2012
- JSNice/Nice2Predict
 - Vorhersage von Eigenschaften, Variablennamen und Doku
 - Programming with “Big Code”: Lessons, Techniques and Applications – Bielik, Raychev, Vechev, 2015