Shin Hwei Tan

Contact Information
School of Computing
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Research Interests
My main research interest is on program repair and software testing I have proposed new methods and developed tools to facilitate dynamic code-comment analysis using test case generation tool and automated repair of software regressions. I am currently looking at methods to improve existing techniques for program repair.

Education

National University of Singapore, Singapore
Ph.D., School of Computing, August 2012-present **CAP: 4.38/5.00**
Thesis Topic: Automated repair of software regressions
Adviser: Abhik Roychoudhury

University of Illinois at Urbana-Champaign, Champaign, IL
M.S., Computer Science, May 2012 **GPA: 3.91/4.00**
Thesis Topic: @tComment: Testing Javadoc Comments to Detect Comment-Code Inconsistencies
Advisers: Darko Marinov, Lin Tan
B.S. (Hons), Computer Science, May 2010 **GPA: 3.68/4.00**
Thesis Topic: Theories/Parameterized tests for JUnit
Adviser: Darko Marinov

Conference Publications

1. S. H. Tan, H. Yoshida, M. Prasad and A. Roychoudhury. Anti-patterns in Search-based Program Repair, In:Foundations of Software Engineering (FSE 2016), Nov 2016 (acceptance: 27.1%)
2. S. H. Tan, A. Roychoudhury. Relifix: Automated Repair of Software Regressions, In: International Conference on Software Engineering (ICSE 2015), May 2015 (acceptance: 18.5%)
3. J. Yi, D. Qi, S. H. Tan, A. Roychoudhury. Software Change Contracts, In ACM Transactions on Software Engineering and Methodology (TOSEM), To Appear
4. J. Yi, D. Qi, S. H. Tan, A. Roychoudhury. Expressing and Checking Intended Changes via Software Change Contracts. In: International Symposium on Software Testing and Analysis (ISSTA 2013), Lugano, Switzerland, July 2013. (acceptance: 26%)
5. S. H. Tan, D. Marinov, L. Tan, and G. T. Leavens. @tComment: Testing Javadoc Comments to Detect Comment-Code Inconsistencies. In: International Conference on Software Testing, Verification, and Validation (ICST 2012), pages 260-269, Montreal, Canada, April 2012. (acceptance: 27%)
6. B. Daniel, D. Dig, T. Gvero, V. Jagannath, J. Jiaa, D. Mitchell, J. Nogiec, S. H. Tan, and D. Marinov. ReAssert: A Tool for Repairing Broken Unit Tests. In: International Conference on Software Engineering, Demonstrations Track (ICSE Demo 2011), pages 1010-1012, Honolulu, HI, May 2011. (acceptance: 37%)

Professional Activities

- ISSTA 2014, Artifact Evaluation Committee
- ICSE 2015 (NIER), Co-reviewer

Teaching Experience

National University of Singapore, Singapore
Teaching Assistant for *CS 4218 Software Testing* **August 2012 to May 2012**
- Designed courses structure and prepared material for first software testing class
- Graded weekly programming homework

University of Illinois at Urbana-Champaign, Champaign, IL
Teaching Assistant for CS242: Programming Studio Laboratory **August 2011 to May 2012**
- Supervised programming assignments presentation for 5-6 students per section

Teaching Assistant for CS427: Software Engineering I **August 2010 to May 2011**
- Fall 2010 and Fall 2011

- Advised student for course project for Eclipse refactoring engines
- Graded bi-weekly programming assignments for 20 groups of students

Teaching Assistant for CS428: Software Engineering II **January 2010 to December 2011**

- Spring 2011
- Provided support for online students through the Illinois Internet Computer Science Program(I2CS)
- Graded bi-weekly programming assignments for 20 groups of students

Undergraduate Assistant for Railroad Department **August 2007 to May 2009**

- Carried out an independent project on automated web retrieval
- Maintained MS Access database for daily tank car accident reports
- Debugged and programmed using Visual Basic, Ruby and HTML

Working Experience

Fujitsu Laboratories of America, Sunnyvale, CA, USA

Research Intern **Feb 2015 to May 2015**

- Developed techniques for improving search-based automated program repair

Intel Corporation, Penang, Malaysia

Summer Intern for Testing Hole Resolution(THR) **June 2011 to August 2011**

- Developed automation for improving efficiency in running automated tests.
- Implemented features and developed error handling for program in Perl and Tcl

Awards and Honors

- Dean's Graduate Research Excellence Award (2016)
- Google Anita Borg Memorial Scholarship (2015)
- Research Achievement Award (2015)
- David J. Kuck Outstanding MS Thesis Award (2013)
- Singapore International Graduate Award (2012-2015)
- ACM-W Scholarship (2012)
- Malaysian Government Scholarship (2006-2010)
- Rockwell Collins Scholarship (2009)
- Motorola Academic Scholarship (2008)

Software Skills

- Computer Programming: Java, Python, C, C++, OCAML
- Version Control: DVCS (Mercurial, Git), and VCS (CVS, SVN)
- Software Test: Randoop, Junit, KLEE

Language Skills

Fluent in Mandarin, Cantonese, English and Malay