

# Xiang Gao

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## Research Interest

Program Analysis, Android Security, Software Testing, Software Repair

## Education

- National University of Singapore, Singapore

Ph.D., Computer Science, Fall 2016 - Present

◆ GPA: 4.7/5 (until now)

Fall 2016 - Present

◆ Advisor : Abhik Roychoudhury

- Shandong University, Computer Science and Technology, China

Bachelor, Computer Science, Fall 2012 – June 2016

◆ GPA: 90.34/100

Fall 2012 – June 2016

◆ Advisor : Lei Ju

## Projects

- **Android applications analysis**

May, 2017 - Present

Ongoing project. Building a hybrid execution platform to enable analysis techniques designed for Java program to analyze Android apps. Using concolic execution to augment existing GUI testing techniques.

- **Repairing crashes of Android applications**

May, 2017 - Present

Analyzing the common pattern of Android application crashes. Building a search-based program repair framework for automatically fixing crashes in Android apps.

- **F1X - Automated program repair tool**

Jan, 2017 - Jul, 2017

Test-driven automated program repair tool for C/C++ programs to increase the efficiency and effectiveness of program repair.

## Work Experience

- **System Engineer Intern — Alibaba**

Jul, 2015 - Oct, 2015

Use Security Enhanced Android (SEAndroid) to increase security properties of android system based on Mandatory Access Control (MAC).

- **Research Assistant — National University of Singapore** Jul,2017 - Present  
 Conduct research on dynamic Android program analysis in **TSUNAMI** (Trustworthy Systems from UN-trusted component AMalgamations) lab. Building a dynamic program analysis platform for Android.
  
- **Teaching Assistant — National University of Singapore**  
 Tutor for Computer Organization (CS2100) AY 2016/2017 Semester 2 Jan,2017 - Apr, 2017  
     - Conduct tutorial sessions consisting of 70 students for 4 hours per week.  
 Teaching Assistant in Formal Methods (CS4211) AY 2017/2018 Semester 1 Aug, 2017 - Dec, 2017  
     - Design assignment for model checking of Robotic Assistant System.
  
- **External Reviewer**  
 Sub-reviewing papers for Foundations of Software Engineering (FSE/ESEC '17).

## Skills

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| Languages   | English (fluent), Mandarin Chinese (native).                     |
| Programming | Java, C, C++, Python.<br>Other: Bash, C#, Javascript, R and etc. |

## Publications

- **Repairing Crashes in Android Apps**  
 Shin Hwei Tan, Zhen Dong, Xiang Gao, and Abhik Roychoudhury  
 40th International Conference on Software Engineering(ICSE), 2018 (to appear)
- **Partitioning Patches into Test-equivalence Classes for Scaling Program Repair**  
 Sergey Mechtaev, Xiang Gao, Shin Hwei Tan and Abhik Roychoudhury  
 arXiv 1707.03139
- **Write-back aware shared last-level cache management for hybrid main memory**  
 Deshan Zhang, Lei Ju, Mengying Zhao, Xiang Gao, Zhiping Jia  
 53rd Design Automation Conference (DAC), 2016

## Awards

- **President's Graduate Fellowship** Aug,2016 - Jul, 2020