Yongjian Hu

CONTACT INFORMATION

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RESEARCH INTERESTS

Software reliability, programming languages, static and dynamic analysis, debugging, deterministic replay and race detection for event-driven mobile systems, static information flow analysis.

EDUCATION

University of California Riverside, Riverside, California USA

Ph.D. Candidate, Computer Science & Engineering, (2012.9 - Present)

- GPA: 3.967/4.0
- Advisor: Prof. Iulian Neamtiu

Donghua University, Shanghai, China

M.S., Computer Science, 2010.3

Donghua University, Shanghai, China

B.S., Computer Science, 2007.6

EXPERIENCE

University of California Riverside, Riverside, CA USA

Research Assistant **2013.7 - present**

Research on designing a light-weighted record and replay tool for event-driven mobile system. The current target is Android. Traditional whole system replay tools are too heavy-weighted and not suitable for mobile devices. Our insight is that we could capture only a portion of the events that are enough for reproducting event-driven concurrent bugs.

Microsoft Research, Redmond, WA USA

Research Intern **2016.6 - 2016.9**

Leverage program analysis techniques to analyze deep links for mobile applications. Details cannot be disclosed due to NDA. Advised by Oriana Riva and Suman Nath.

Intel Corporation, Shanghai, China

Software Engineer **2010.4 - 2012.7**

Member of Binary Translation Team, SSG. I join the "Houdini" project. "Houdini" is a dynamic binary translator that translates Arm code to x86. It allows Android applications which contain native Arm code to seamlessly run on x86 devices. My main job is to develope tools to ensure product quality and performance. I have developed a code/path coverage tool to provide metrics of the software quality. The performance tool is based on sampling and instrumentation techniques to detect and breakdown the overhead of the product.

PUBLICATIONS

Yongjian Hu, Iulian Neamtiu, Arash Alavi. Automatically Verifying and Reproducing Event-based Races in Android Apps. The International Symposium on Software Testing and Analysis (ISSTA'16), July 2016.

Yongjian Hu, Iulian Neamtiu. VALERA: An Effective and Efficient Record-and-replay Tool for Android. IEEE/ACM International Conference on Mobile Software Engineering and Systems (MobileSoft 2016), May 2016.

Yongjian Hu, Iulian Neamtiu. Fuzzy and Cross-App Replay for Smartphone Apps. The 11th IEEE/ACM International Workshop on Automation of Software Test (AST 2016), May 2016.

Yongjian Hu, Tanzirul Azim, Iulian Neamtiu. Versatile yet Lightweight Record-and-Replay for Android. Proceedings of the 2015 ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages, and Applications(OOPSLA), Pages 349-366, October 2015.

Yongjian Hu, Tanzirul Azim, Iulian Neamtiu. Improving the Android Development Lifecycle with the VALERA Record-and-replay Approach. Third International Workshop on Mobile Development Lifecycle(MobileDeli), October 2015.

Yongjian Hu, Wei Xiao. A System-level Path Coverage Tool for Software Validation. Intel Software Professionals Conference (SWPC), October 2011.

Wei Xiao, Haihao Shen, Yongjian Hu. A Multi-platform System-level Path Coverage Tool. Intel Design and Test Technology Conference(DTTC), June 2011.

Professional Experience

OOPSLA 2016 Artifact Evaluation Committee.

ICSME 2014 External Reviewer.

QRS 2016 External Reviewer.

Honors and Awards

University of California Riverside Graduate Fellowship, 2012.

Excellent Graduate Student of Donghua University, 2010.

Excellent Undergraduate Student of Shanghai. 2007.

Bronze Medal, ACM/ICPC Asia Regional, Beijing 2006.

Bronze Medal, ACM/ICPC Asia Regional, Beijing 2005.

Computer Skills

- Programming Languages: Java, C/C++, OCaml, Ruby.
- Tools: Vim, Eclipse, Git, Subversion.
- Operating Systems: Linux, Mac OSX, Windows.