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EDUCATION

University of Science and Technology of China -- 09.2013 – 07.2018(Expected)

Ph.D in Computer Software and Theory, ♦ Joint Ph.D Program with Microsoft Research Asia
School of Computer Science and Technology
Ph.D Supervisor: Chieh-Jan Mike Liang, Enhong Chen and Feng Zhao

University of Science and Technology of China -- 08.2009 - 07.2013

B.S in Computer Science and Technology
The Talent Program in Computer and Information Science and Technology
Department of Computer Science and Technology

PUBLICATIONS

Accepted Papers:

1. **Li Lyna Zhang**, Chieh-Jan Mike Liang, Yunxin Liu, Enhong Chen, Systematically Testing Background Services of Mobile Apps. **IEEE/ACM ASE, 2017, CCF Rank A.**
2. **Li Lyna Zhang**, Chieh-Jan Mike Liang, Zhao Lucis Li, Yunxin Liu, Feng Zhao, Enhong Chen, Characterizing Privacy Risks of Mobile Apps with Sensitivity Analysis. **TMC (IEEE Transactions on Mobile Computing), 2017, CCF Rank A.**
3. **Li Lyna Zhang**, Chieh-Jan Mike Liang, Wei Zhang, Enhong Chen, Towards A Contextual and Scalable Automated-testing Service for Mobile Apps. **HotMobile, 2017.**
4. Chieh-Jan Mike Liang, Nicholas D. Lane, Niels Brouwers, **Li Zhang**, Borje F. Karlsson, Hao Liu, Yan Liu, Jun Tang, Xiang Shan, Ranveer Chandra, Feng Zhao, Caiipa: Automated Large-scale Mobile App Testing through Contextual Fuzzing, **MobiCom, 2014, CCF Rank A.**
5. Chieh-Jan Mike Liang, Jun Tang, **Li Zhang**, Feng Zhao, Sirajum Munir, John A. Stankovic, Poster Abstract: On Human Behavioral Patterns in Elevator Usages, **Buildsys, 2013.**
6. Chieh-Jan Mike Liang, Haozhun Jin, Yang Yang, **Li Zhang**, Feng Zhao, Crossroads: A Framework for Developing Proximity-based Social Interactions, **Mobiquitous, 2012.**

Papers in Submission:

7. **Li Lyna Zhang**, Chieh-Jan Mike Liang, Haoran Li, En-Hong Chen, Characterizing UI Responsiveness Defects in Android Apps.

INTERN EXPERIENCE

Microsoft Research Asia -- 06.2014 - Present

Research Intern at Cloud & Mobile Group
Mentored by Chieh-Jan Mike Liang

Microsoft Research Asia -- 07.2012 - 07.2013

Research Intern at Mobile Sensing and System Group, Mentored by Chieh-Jan Mike Liang and Feng Zhao

HONORS & AWARDS

2017 National Scholarship for Doctoral Students

2013 Stars of Tomorrow Internship, MSRA.

2012 Outstanding University Students of CCF

2012 Second Prize, Outstanding Students of University of Science and Technology of China

2011 Tencent Business Excellence Scholarship Award of Science and Technology

2010 Third Prize, Outstanding Students of University of Science and Technology of China

2010 National Encouragement Scholarship

2009 Third Prize, Scholarship for Excellent Freshman of University of Science and Technology of China

PROJECTS

Testing for Android Background Services

2015.11 - 2016.08

- ◆ Contrary to popular belief, mobile apps can spend a large fraction of time running “hidden” as background services. And, bugs in services can translate into crashes, energy depletion, device slow-down, etc. Unfortunately, without necessary testing tools, developers can only resort to telemetries from user devices in the wild.
- ◆ We design a testing framework – Snowdrop, that systematically identifies and automates background services in Android Apps. It combines static analysis techniques and nlp-based heuristics.

Targeted App Automation

2015.04 - 2015.08

- ◆ Random UI clicking is a popular strategy for developers in many testing scenarios. However, while this dynamic analysis can fuzz different dimensions of app inputs, random testing also explodes the test space.
- ◆ We design and implement TARA (Targeted App Automation) framework to automatically generate shortest achievable test execution paths for “targeted” UI elements. We use static analysis technique and generate app-specific automation models.

Privacy Risk Vetting for Android Apps

2014.10 - 2016.01

- ◆ Given the emerging concerns over app privacy-related risks, major app distribution providers (e.g., Microsoft) have been exploring approaches to help end users to make informed decision before installation.
- ◆ We build on the direction of risk rating as the way to communicate app-specific privacy risks to end users. We propose to use sensitivity analysis to infer whether an app requests sensitive on-device resources that are not required for its expected functionality. To this end, we implement a system Privet, it addresses challenges in efficiently achieving test coverage and automated privacy risk assessment.

Static Analysis Framework for Windows Universal Apps

2016.04 - 2016.06

- ◆ While Android has several static analysis tools (FlowDroid, Androguard, etc), there is an engineering gap for Windows Universal Apps. To this end, we implement a static analysis tool that can reverse engineer C# Windows Universal Apps based on Roslyn Compiler. It provides function call graph, control-flow graph and data flow analysis.

Netmon Packets Analyzer

2014.03 - 2014.05

<https://github.com/Lynazhang/NetTrafficInspection>

- ◆ While packet sniffer tools (e.g., Netmon, Wireshark) provide users every packets transmitted between app and remote servers, users have little knowledge in the actual contents transmitted without app source code. While Netmon (Microsoft Network Monitor) is a popular and widely used packet sniffer tool, we implement a network traffic analyzer library for the Netmon packets.

Windows Mobile App Performance Testing

2012.10 - 2013.10

- ◆ Today, developers have only a limited set of tools to test their apps under different mobile contexts, tools for collecting and analyzing data logs from already deployed apps require them to be first released before problems can be corrected. Through limited-scale field tests log analytics can be applied prior to public release but these tests lack broad coverage.
- ◆ We design and implement Caiipa – a prototype cloud service that can automatically probe mobile apps in search of performance issues and crash scenarios caused by certain mobile contexts.

SKILLS

Experienced in : Python, Android, Java, Latex

Familiar with : C#, R, MySQL

Experted in : Static code analysis of Android app, App automation testing, build system and analyze data