

## Identifying Security Vulnerabilities in Online Services via Automated Analysis of Mobile Apps

**SPEAKER** Dr Zhiqiang LIN

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**DATE** 4 October 2017 (Wednesday)

**TIME** 11:00 am - 12:30 pm

**VENUE** CSE Conference Room, B6605  
6th Floor, Blue Zone  
Yeung Kin Man Academic Building  
City University of Hong Kong  
83 Tat Chee Avenue  
Kowloon Tong

### ABSTRACT

Over the past several years, we have witnessed a huge increase of the number of mobile devices and mobile apps. As of today, there are billions of mobile users, millions of mobile apps, and millions of app service providers. However, when pushed too quickly to the market, the apps and services can be poorly engineered and may contain various vulnerabilities that can severely undermine users' security and privacy. While a significant amount of effort has focused on vetting various vulnerabilities in mobile apps, little attention has targeted remote services. In this talk, Dr Lin is going to talk about how to automatically analyze mobile apps in searching for security vulnerabilities of remote services. In the first half of his talk, he will present a generic and scalable system dubbed AutoForge to identify password brute-force vulnerabilities in mobile services by using automatic protocol reverse engineering, dynamic slicing, and API replay. In the second half of the talk, he will describe SmartGen, a system to automatically reveal the server APIs of mobile apps and enable the standard vulnerability fuzzing with remote services via selective symbolic execution. Both AutoForge and SmartGen have been evaluated with a large set of mobile apps, and found hundreds of security vulnerabilities. Responsible disclosures have been made to all the vulnerable service providers, and Dr Lin will also share this experience during his talk.

### BIOGRAPHY

Dr Zhiqiang Lin is an Associate Professor of Computer Science at The University of Texas at Dallas. He earned his PhD from Computer Science Department at Purdue University. His primary research interests are systems and software security, with an emphasis on developing program analysis techniques and applying them to secure both application programs including mobile apps and the underlying system software such as Operating Systems and hypervisors. Dr Lin is a recipient of the NSF CAREER Award and the AFOSR Young Investigator Award.

**All are welcome!**



In case of questions, please contact Dr WANG, Cong at Tel: 3442 2010, E-mail: [congwang@cityu.edu.hk](mailto:congwang@cityu.edu.hk), or visit the CS Departmental Seminar Web at <http://www.cs.cityu.edu.hk/news/seminars/seminars.html>.

