

Haoran Lu

✉ haoranlu07@gmail.com

☎ 757-332-6530

http://homes.sice.indiana.edu/haorlu/

EXPERIENCE

Facebook, Inc

California, USA

Software Engineer Intern

May 2020 - Aug 2020

- Working on **harmful URL detection** based on landing page contents across Facebook products.
- Developed a **phishing detection** system that protects user from thousands of attack everyday.
- Developed a matching system which can identify similar URLs based on **text and image similarity** at scale.
- Implemented data collection pipelines and detection/matching algorithms with **PHP**, **Haskell**, and **Python**.

Institute of Computing Technology, Chinese Academy of Science

Beijing, China

Software Engineer Intern

Aug 2015 - May 2016

- **Fullstack** development with focus on backend data stream computation.
- Implement and optimize Union-Find based user profile system taking advantage of **Redis** and **MySQL**;
- Front-end data visualization utilizing **Echarts** library
- Built a General **ETL framework** which allows user-defined data transform function using **Python** scripts.

SELECTED PROJECTS

App-in-app ecosystem Security Analysis

Jun 2017 - Jan 2018

- Find three types of security vulnerabilities/ design pitfall in Wechat and Chrome caused by the design of Progressive Web App(**PWA**) and Wechat Mini-program.
- 6 Bug reports confirmed by Chromium/Apple/Tencent/Alipay Security Team (Bounty rewarded).
- Write Proof-of-Concept demo in the form of **Android App** and **Web Application**
- Dynamic Program analysis with customized **Xposed** module on android and **Cydia Tweak** on iOS

Understanding Dark Jargons In Black Market

Jun 2017 - Jan 2018

- Understand the jargon criminals use in the underground market, find the closest meaning hypernym.
- Modified the original **Word2vec** model, capture semantic differences of the same word in different context.
- Identified 3,462 jargons with an accuracy of 91%

ACHIEVEMENTS

- **CVE found by me:** CVE-2019-5767
- **Opera Security Hall of Fame** <https://security.opera.com/hall-of-fame/>
- **Tencent Security Hall of Fame** <https://en.security.tencent.com/index.php/thanks>

SKILLS

- **Programming Languages:** Python, Java, R, Javascript, C/C++..
- **Professional Software and Environment Skills:** Eclipse, Matlab, MySQL, Redis, Shell, RStudio, Latex
- **Other:** Good soldering and spot welding skills, Can write well organised and structured reports. (I wrote bug reports accepted by Chromium and W3C group)

EDUCATION

Indiana University

Bloomington, IN

PhD student, focusing in Cyber Security

Aug 2018 - Current

College of William and Mary

Williamsburg, VA

MS in Computer Science GPA: 3.94/4.0

Aug 2016 - May 2018

PUBLICATIONS

1. **Lu, Haoran**, Luyi Xing, Yue Xiao, Yifan Zhang, Xiaojing Liao, XiaoFeng Wang, and Xueqiang Wang. Demystifying resource management risks in emerging mobile app-in-app ecosystems. In *ACM Conference on Computer and Communications Security (CCS)*, 2020 (to appear)
2. Kan Yuan, **Lu, Haoran**, Xiaojing Liao, and XiaoFeng Wang. Reading thieves' cant: automatically identifying and understanding dark jargons from cybercrime marketplaces. In *27th USENIX Security Symposium (USENIX Security 18)*, pages 1027–1041, 2018
3. Kan Yuan, Di Tang, Xiaojing Liao, XiaoFeng Wang, Xuan Feng, Yi Chen, Menghan Sun, **Lu, Haoran**, and Kehuan Zhang. Stealthy porn: Understanding real-world adversarial images for illicit online promotion. In *40th IEEE Symposium on Security and Privacy May, 2019*