

Binbin Zhao

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EDUCATION BACKGROUND

■ Zhejiang University

Sept. 2014 - June 2018

Bachelor of Engineering, Computer Science and Technology

– Overall GPA: 3.77/4.00 Major GPA: 3.84/4.00

■ National University of Singapore

July 2016 - Aug. 2016

Summer Session

– The Dark Arts, Attacks and Defenses A+

RESEARCH INTEREST

IoT security; AI security; Measurement

PUBLICATIONS

[1] **Binbin Zhao**, Shouling Ji, Raheem Beyah, “A Large-scale Empirical Study on the Vulnerability of Deployed IoT Devices”, (*in preparation*)

[2] **Binbin Zhao***, Haiqin Weng*, Shouling Ji, Jianhai Chen, Ting Wang, Qinming He, Raheem Beyah, “Towards Evaluating the Security of Image CAPTCHA in the Wild”, **AISeC 2018** (*accepted*)

RESEARCH AND WORK EXPERIENCE

Research Fellow

Advisor: Prof. Shouling Ji

Zhejiang University, NESALab

June 2018 – present

Major project: Analyzing the Vulnerability of IoT Devices at Large Scale

- Embarked on a multi-aspect comparative study on five IoT Search Engines, e.g. Shodan, Censys, Zoomeye, Fofa, NTI
- Collected millions of exposed devices from six kinds of IoT devices, e.g. Router, Webcam, Printer, Miner, Medical devices, and Industrial Control Systems (ICS)
- Succeeded in testing million-level devices in three dimensions, including weak password usage, nearly 100 N-days vulnerabilities testing, and the long-term longitudinal study
- Proposed deceptive defense technique to protect the vulnerable IoT devices

Research Assistant

Advisor: Prof. Shouling Ji

Zhejiang University, NESALab

July 2017 – Apr. 2018

Major project: Evaluating the Security of Image CAPTCHAs

- Attacked three kinds of Image Captchas by using machine learning, including Selection-based, Slide-based and Click-based Image Captchas
- Conducted a measurement study on the underground market of captcha-solving service
- Proposed several methods against the attack, such as adding adversarial noises to original captcha
- Reported one high-risk and one medium-risk vulnerabilities to NetEase Security Response Center (NSRC)
- Reported two medium-risk vulnerabilities to Tencent Security Response Center (TSRC)

Software Development Intern

Advisor: Kevin Lin

Tencent, Interactive Entertainment Group (IEG)

Apr. 2018 – June 2018

Major project: Detecting the Plug-ins Used in Mobile Game

- Detected the plug-ins used in the Naruto Mobile Game with real-time validation.
- Used frame synchronization to optimize the player experience under weak network condition.

TEACHING EXPERIENCE

Object-oriented Programming (C++) Teaching Assistant

Sept. 2017 - Feb. 2018

Lecturer: Janice Regan (Simon Fraser University)

- Managed one discussion section twice a week.
- Was responsible for 30 students from Zhejiang University and Simon Fraser University.

HONORS AND AWARDS

- **First Prize in Programming Contest**, Zhejiang University (10 out of 300) 2016
- **First Prize in ACTF Contest**, Zhejiang University (1 out of 200) 2016
- **Outstanding Exchange Student Scholarship**, Zhejiang University 2016