Xuan Feng

Researcher
Microsoft Research Asia

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Research Overview

I am a security Researcher at Microsoft Research Asia. My current research lies at the intersection of IoT security, cyber security and network measurements. My work focus on using a data-driven approach to study threats, weakness and abuse on network/IoT devices at global scale. And to propose new methods or build tools to secure exposed network/IoT devices that help to defend the Internet's core infrastructure, guide the design and deployment of widely-used systems.

Positions

- Researcher, Microsoft Research Asia, July 2020- present

- Postdoc, Microsoft Research Asia, July 2020- present

Education

- Ph.D. in Computer Network, Institute of Information Engineering,CAS, UCAS, July 2020.
  Advisor: Prof. Limin Sun

- Visiting scholar in Indiana University Bloomington, Sep 2017 - Sep 2018.
  Advisor: Prof. XiaoFeng Wang

- B.S. in Telecommunications Engineering, Xidian University, July 2014

Honors and Awards

- 3rd Place of CSAW'19 Applied Research Competition, 2019

- Outstanding paper award in IIE-UCAS, 2018

- Zhu-Li-Yuehua Outstanding Doctoral Scholarship of UCAS, 2019

- Dean's award of excellence of UCAS, *2018*

- National Scholarship, 2017 and 2018

- Outstanding graduates of Xidian University, 2014

- The first-class scholarship of Xidian University, 2010-2013

- First prize of Shaanxi Division of National Undergraduate Electronic Design Contest, 2013

Research Projects

- National Natural Science Foundation,2014-2019
  Research on industrial control systems: discovering and understanding devices characteristic

- State Key Development Program of Basic Research, 2014-2019
  IoT device fingerprinting: extracting device information and profile it using fingerprint

- Undergraduate Electronic Design Contest, 2013-2014
  Design/implement the hardware and software and won first prize in Shaanxi Division

Selected Publications

[1] Xuan Feng, Xiaojing Liao, XiaoFeng Wang, Haining Wang, Qiang Li, Kai Yang, Hongsong Zhu, Limin Sun. **Understanding and Securing Device Vulnerabilities through Automated BugReport Analysis**. *Proceedings of The USENIX Security Symposium 2019* (SEC'19), AUGUST 14–16, 2019, SANTA CLARA, CA, USA. (CCF-A)

[2] Xuan Feng, Qiang Li, Haining Wang, Limin Sun.**Acquisitional Rule-based Engine for Discovering Internet-of-Thing Devices**. *Proceedings of the The USENIX Security Symposium 2018* (SEC'18), AUGUST 15–17, 2018, BALTIMORE, MD, USA. (CCF-A)

[3] Xianghang Mi, Xuan Feng, Xiaojing Liao, Baojun Liu, XiaoFeng Wang, Feng Qian, Sumayah Alrwais, Limin Sun, Ying Liu.**Resident Evil: Understanding Residential IP Proxy as a Dark Service**. *Proceedings 40th IEEE Symposium on Security and Privacy* (S&P 2019). (CCF-A)

[4] Nan Zhang, Xianghang Mi, Xuan Feng, XiaoFeng Wang, Yuan Tian, Feng Qian.**Dangerous Skills: Understanding and Mitigating Security Risks of Voice-Controlled Third-Party Functions on Virtual Personal Assistant Systems** *Proceedings 40th IEEE Symposium on Security and Privacy* (S&P'2019). (CCF-A)

[5] Yi Chen, Mingming Zha, Nan Zhang, Dandan Xu, Qianqian Zhao, Xuan Feng, Kan Yuan, Ya Su, Yuan Tian, Kai Chen, Xiaofeng Wang, Wei Zou. **Demystifying Hidden Privacy Settings in Mobile Apps**. *Proceedings 40th IEEE Symposium on Security and Privacy* (S&P'2019). (CCF-A)

[6] Kan Yuan, Di Tang, Xiaojing Liao，XiaoFeng Wang, Xuan Feng, Yi Chen, Menghan Sun, Haoran Lu, Kehuan Zhang. **Stealthy Porn: Understanding Real-World Adversarial Images for Illicit Online Promotion**. *Proceedings 40th IEEE Symposium on Security and Privacy* (S&P'2019).

[7] Qiang Li, Xuan Feng, Zhi Li, Haining Wang, Linmin Sun. **Towards Fine-grained Fingerprinting of Firmware in Online Embedded Devices**. *Proceedings of the IEEE International Conference on Computer Communications 2018* (Infocom'2018), April 15-19, 2018, Honolulu, HI, USA. (CCF-A)

[8] Qiang Li, Xuan Feng, Haining Wang, Limin Sun. **Automatic Discovery of Surveillance Devices in the Cyberspace**. *Proceedings of the ACM Multimedia Systems 2017 Conference* (MMsys'17), June 20-23, 2017, Taipei, Taiwan.

[9] Xuan Feng, Qiang Li, Haining Wang, Limin Sun. **Characterizing Industrial Control Equipments on the Internet** *IEEE International Conference on Network Protocols* (ICNP'16), November 8-11, 2016, Singapore. (CCF-B)

[10] Xuan Feng, Qiang Li, Qi Han, Hongsong Zhu, Yan Liu, Limin Sun. **Identification of Visible Industrial Control Devices at Internet Scale**. *IEEE International Conference on Communications* (ICC'16), May 23-27, 2016, Kuala Lumpur, Malaysia. (CCF-C)

[11] Xuan Feng, Qiang Li, Qi Han, Hongsong Zhu, Yan Liu, Jie Cui, Limin Sun.**Active Profiling of Physical Devices at Internet Scale**. *IEEE International Conference on Computer Communication and Networks* (ICCCN'16), August 1-4, 2016, Waikoloa, Hawaii, USA. (CCF-C)

[12] Qiang Li, Xuan Feng, Lian Zhao, Limin Sun.**A Framework for Searching Internet-wide Devices**. *IEEE Network*, 2017. (JCR Q1)

[13] Qiang Li, Xuan Feng, Haining Wang and Limin Sun. **Understanding the Usage of Industrial Control System Devices on the Internet**. *IEEE Internet of Things Journal*, vol. 5, no. 3, pp. 2178-2189, June 2018. (JCR Q1)