Xueqiang Wang

xueqiang.wang@ucf.edu, +1 832 983 5394

Research Interests

Software Supply Chain Security, Security and Privacy of Mobile/IoT System, Cybercrime Analysis

Work Experience

10/2022 – Now: University of Central Florida, Orlando, FL
- Assistant Professor, Computer Science Department and Cyer Security and Privacy Cluster

04/2020 – 10/2022: Amazon Lab126, Sunnyvale, CA
- Security Engineer, Amazon Device Security
- Manager: Howard Lew

05/2019 – 08/2019: NIO, San Jose, CA
- Security Research Intern, Automotive Security
- Mentor: Mark Hoy
- Manager: Dr. Qiyan Wang

05/2018 – 08/2018: Symantec Research Labs, Mountain View, CA
- Security Research Intern, Generating IoT Device Fingerprints for Vulnerability Discovery.
- Mentor: Dr. Yuqiong Sun
- Manager: Dr. Petros Efstathopoulos

Education

08/2015 – 01/2021: Indiana University Bloomington
- Ph.D. in Computer Science (Minor: Artificial Intelligence)
- Thesis: Towards Intelligent and Scalable Security Analysis of Mobile and IoT Systems
- Advisor: Prof. XiaoFeng Wang

09/2012 – 06/2015: Institute of Information Engineering, Chinese Academy of Sciences (CAS)
- Master in Computer Science and Technology. Graduated with **Dean's Award**
- Advisors: Dr. Yuewu Wang and Prof. Jiwu Jing

09/2008 – 06/2012: University of Science and Technology of China (USTC)
- Bachelor in Information Security. Awarded *National Scholarship* for Two Consecutive Years

Conference Publications

(* means equal contribution)

- Zhaoxin Cai, Yuhong Nan, **Xueqiang Wang**, Mengyi Long, Qihua Ou, Min Yang, Zibin Zheng. "DARPA: Combating Asymmetric Dark UI Patterns on Android with Run-time View Decorator." In DSN'23. Available from: `https://ieeexplore.ieee.org/document/10202645` DOI: 10.1109/DSN58367.2023.00052
- [Top-Tier] **Wang Xueqiang**, Zhang Yifan, Wang XiaoFeng, Jia Yan, Xing Luyi. "Union under Duress: Understanding Hazards of Duplicate Resource Mismediation in Android Software Supply Chain." In USENIX Security'23. Available from: `https://www.usenix.org/conference/usenixsecurity23/presentation/wang-xueqiang-duress`
- [Top-Tier] **Wang Xueqiang**, Sun Yuqiong, Susanta Nanda, Wang XiaoFeng. "Credit Karma: Understanding Security Implications of Exposed Cloud Services through Automated Capability Inference." In USENIX Security'23. Available from: `https://www.usenix.org/conference/usenixsecurity23/presentation/wang-xueqiang-karma`

- [Top-Tier] Nan Yuhong*, **Wang Xueqiang***, Xing Luyi, Liao Xiaojing, Wu Ruoyu, Wu Jianliang, Zhang Yifan, Wang XiaoFeng. "Are You Spying on Me? Large-Scale Analysis on IoT Data Exposure through Companion Apps." In USENIX Security'23. Available from: https://www.usenix.org/conference/usenixsecurity23/presentation/nan (*co-first authors)
- [Top-Tier] Jice Wang, Yue Xiao, **Xueqiang Wang**, Yuhong Nan, Luyi Xing, Xiaojing Liao, JinWei Dong, Nicolas Serrano, XiaoFeng Wang, Yuqing Zhang, Haoran Lu. "Understanding Malicious Cross-library Data Harvesting on Android". In USENIX Security'21. Available from: https://www.usenix.org/conference/usenixsecurity21/presentation/wang-jice
- [Top-Tier] Haoran Lu, Luyi Xing, Yue Xiao, Yifan Zhang, Xiaojing Liao, XiaoFeng Wang, **Xueqiang Wang**. "Demystifying Resource Management Risks in Emerging Mobile App-in-App Ecosystems". In CCS'20. Available from: https://doi.org/10.1145/3372297.3417255
- [Top-Tier] **Wang Xueqiang**, Sun Yuqiong, Susanta Nanda, Wang XiaoFeng. "Looking from the Mirror: Evaluating IoT Device Security through Mobile Companion Apps." 28th USENIX Security Symposium (USENIX Security 19); 2019; c2019. Available from: https://www.usenix.org/conference/usenixsecurity19/presentation/wang-xueqiang
- [Top-Tier] Lee Yeonjoon*, Wang Xueqiang*, Lee Kwangwuk, Liao Xiaojing, Wang XiaoFeng, Li Tongxin, Mi Xianghang. "Understanding iOS-based Crowdturfing Through Hidden UI Analysis." 28th USENIX Security Symposium (USENIX Security 19); 2019; c2019. Available from: https://dl.acm.org/doi/10.5555/3361338.3361391 (*co-first authors)
- [Top-Tier] Wei You, **Xueqiang Wang**, Shiqing Ma, Jianjun Huang, Xiangyu Zhang, XiaoFeng Wang, Bin Liang. "ProFuzzer: On-the-fly Input Type Probing for Better Zero-day Vulnerability Discovery". In Oakland'19. Available from: https://ieeexplore.ieee.org/abstract/document/8835384 DOI: 10.1109/SP.2019.00057
- [Top-Tier] Xiaokuan Zhang, **Xueqiang Wang**, Xiaolong Bai, Yinqian Zhang, XiaoFeng Wang. "OS-level Side Channels without Procfs: Exploring Cross-App Information Leakage on iOS", In NDSS'18. Available from: http://dx.doi.org/10.14722/ndss.2018.23260
- [Top-Tier] Yue Duan, Mu Zhang, Abhishek Vasist Bhaskar, Heng Yin, Xiaorui Pan, Tongxin Li, **Xueqiang Wang**, XiaoFeng Wang. "Things You May Not Know About Android (Un)Packers: A Systematic Study based on Whole-System Emulation". In NDSS'18. Available from: http://dx.doi.org/10.14722/ndss.2018.23296
- Jun Tang, Aleksandra Korolova, Xiaolong Bai, **Xueqiang Wang**, XiaoFeng Wang. "Privacy Loss in Apple's Implementation of Differential Privacy on MacOS 10.12". In TPDP'17. Available from: https://doi.org/10.48550/arXiv.1709.02753
- [Top-Tier] Tongxin Li, **Xueqiang Wang**, Mingming Zha, Kai Chen, XiaoFeng Wang, Luyi Xing, Xiaolong Bai, Nan Zhang, Xinhui Han. "Unleashing the Walking Dead: Understanding Cross-App Remote Infections on Mobile WebViews". In CCS'17. Available from: https://doi.org/10.1145/3133956.3134021
- [Top-Tier] Xiaorui Pan, **Xueqiang Wang**, Yue Duan, XiaoFeng Wang, Heng Yin. "Dark Hazard: Learning-based, Large-Scale Discovery of Hidden Sensitive Operations in Android Apps." In NDSS. 2017. Available from: http://dx.doi.org/10.14722/ndss.2017.23265
- [Top-Tier] Kai Chen, **Xueqiang Wang**, Yi Chen, Peng Wang, Yeonjoon Lee, XiaoFeng Wang, Bin Ma, Aohui Wang, Yingjun Zhang, Wei Zou. "Following Devil's Footprints: Cross-Platform Analysis of Potentially Harmful Libraries on Android and iOS." In 2016 IEEE Symposium on Security and Privacy (SP), pp. 357-376. IEEE, 2016. Available from: https://ieeexplore.ieee.org/document/7546512 DOI: 10.1109/SP.2016.29
- [Top-Tier] **Wang, Xueqiang**, Kun Sun, Yuewu Wang, Jiwu Jing. "DeepDroid: Dynamically Enforcing Enterprise Policy on Android Devices." In the Network and Distributed System Security Symposium (NDSS'15); 2015; c2015. Available from: https://www.ndss-symposium.org/wp-content/uploads/2017/09/02_5_1.pdf

- **Wang, Xueqiang**, Yuewu Wang, Limin Liu, Lingguang Lei, Jiwu Jing. "Wrapdroid: Flexible and Fine-Grained Scheme Towards Regulating Behaviors of Android Apps." In Information Security and Cryptology-ICISC 2014: 17th International Conference, Seoul, South Korea, December 3-5, 2014, Revised Selected Papers 17, pp. 255-268. Springer International Publishing, 2015. Available from: https://link.springer.com/chapter/10.1007/978-3-319-15943-0_16

Journal Publications

(* means equal contribution)

- [Top-Tier] Yeonjoon Lee, **Xueqiang Wang**, Xiaojing Liao, XiaoFeng Wang. "Understanding illicit UI in iOS apps through hidden UI analysis." IEEE Transactions on Dependable and Secure Computing 18, no. 5 (2019): 2390-2402. Available from: https://ieeexplore.ieee.org/abstract/document/8888213 DOI: 10.1109/TDSC.2019.2950253
- **Wang Xueqiang**, Lei Lingguang, Wang Yuewu. "An Easy-To-Deploy Behavior Monitoring Scheme for Android Applications." In Journal of University of Chinese Academy of Sciences, 2015, 32(5): 689-694. Available from: http://journal.ucas.ac.cn/CN/10.7523/j.issn.2095-6134.2015.05.016 (In Chinese)
- **Wang Xueqiang**, Lei Lingguang, Wang Yuewu. "A Review of Security Threats of Mobile Internet." In NetInfo Security, 2014, 14(9): 30-33. Available from: http://netinfo-security.org/CN/10.3969/j.issn.1671-1122.2014.09.007 (In Chinese)

Patents

- Yuqiong Sun, **Xueqing Wang**, Susanta Nanda, and Petros Efstathopouloss. "Determining security vulnerabilities of Internet of Things devices". Patent #: 11132447
- Yuqiong Sun, **Xueqing Wang**, Susanta Nanda, Yun Shen, Pierre-Antoine Vervier, and Petros Efstathopoulos. "Systems and methods for fingerprinting devices". Patent #: 11122040

Talks

Invited Talks

- 2023, RUC Seminar Series: Relibability of Foundational Software and Intelligent Systems, "Understanding Security Hazards of Third-Party Dependencies in the Android Application Supply Chain", Virtual
- 2023, Statistical and Data Science Colloquium, UCF, "Understanding Security Hazards of Third-Party Dependencies in the Android Application Supply Chain", Orlando, FL
- 2023, SMST Seminar Series, UCF, "Combating Mobile-Based Cybercrime with Semantic Analysis", Orlando, FL
- 2022, CECS Virtual Seminar, UCF, "Improving Security and Privacy Transparency of Mobile and IoT Systems, and their Supply Chains", Orlando, FL
- 2022, Business Information Technology Department at Virginia Tech, "Software Supply Chain Security: An Overview and Case Studies", Virtual
- 2019, NIO USA, "New Techniques and Discoveries on Mobile and IoT Security", San Jose, CA
- 2019, Symantec Research Labs, "Looking from the Mirror: Evaluating IoT Device Security through Mobile Companion Apps", Sunnyvale, CA

Other

- 2023, USENIX Security, "Are You Spying on Me? Large-Scale Analysis on IoT Data Exposure through Companion Apps", ANAHEIM, CA
- 2023, USENIX Security, "Credit Karma: Understanding Security Implications of Exposed Cloud Services through Automated Capability Inference", ANAHEIM, CA
- 2023, Camp Connect I, UCF, CS Track - "Cybersecurity", Orlando, FL

- 2022, EECS Colloquium, Washington State University, "Towards Intelligent and Scalable Security Analysis of Mobile and IoT Systems: New Threats and Opportunities", Virtual
- 2019 USENIX Security, "Looking from the Mirror: Evaluating IoT Device Security through Mobile Companion Apps", Santa Clara, CA
- 2015 Network and Distributed System Security Symposium (NDSS), "DeepDroid: Dynamically Enforcing Enterprise Policy on Android Devices", San Diego, CA
- 2014 International Conference on Information Security and Cryptology, "Wrapdroid: Flexible and Fine-Grained Scheme Towards Regulating Behaviors of Android Apps", Seoul, Korea

Sponsored Research and Funding

- Research Cloud Starter Award, $1,000 Credit, Oracle, Support Identifier 27502287
- NSF #2320974, "Collaborative Research: Implementation: Medium: Secure, Resilient Cyber-Physical Energy System Workforce Pathways via Data-Centric, Hardware-in-the-Loop Training", $59,302, UCF PI (100%), (This is part of a multi-institution grant led by Dr. Yufei Tang at Florida Atlantic University.)

Honors and Awards

- **Vulnerability Bounty Reward**, $5000, Google, 2019.
- **Best Applied Security Paper Award TOP-10 Finalists**, CSAW 2019.
- **Best Applied Security Paper Award TOP-10 Finalists**, CSAW 2018.
- **Vulnerability Bounty Reward**, $9500, Facebook, 2017.
- **2015 Dean's Award**, Institute of Information Engineering, CAS.
- **2011 Outstanding Student Scholarship**, University of Science and Technology of China.
- **National Scholarship**, Ministry of Education of the P.R. China 2010, 2009.

Services

External Services

- **Program Committee Member:** EuroS&P (2024), ACNS (2023), CCS (2024)
- **Journal Reviewer**: TDSC (2023), TIFS (2023), TOPS (2021), IEEE Security & Privacy (2022), Journal of Computer Science and Technology (JCST, 2021)
- **Organizing Committee:** CCS 2024 (Registration Chair)
- **Grant Panel**: NSF OAC (2024)
- **Sub-reviewer**: USENIX Security (2016, 2017), CCS (2017), S&P (2018, 2019), NDSS (2018), IoT S&P (2017).
- **Volunteer**: Management of Paper Submission and Assignment Systems for CCS 2018, 2019.

University Services

- **Search Committee Member**: Cyber Security and Privacy Areas (2023), Admin Coordinator III (2023)
- **Thesis/Advisory Committee**: Kieran Human (CS MS), Soohyeon Choi (CS PhD), Mohammed Alqadhi (CS PhD), Mohammed Al kinoon (CS PhD), ibrahim Alwhbi Alharbi (CS PhD), Konstantin Metz (CyberSP MS, CyberCorps SFS Studnet)

Teaching

Spring 2024, Instructor, CDA 3103 Computer Logic and Organization, UCF

Fall 2023, Instructor, CAP 5150 0001 Foundations of Computer Security and Privacy, UCF
Teaching Evaluations: Overall 4.25 out of 5.00
16 of 49 students responding
Department: 4.03; University: 4.16

Fall 2023, Instructor, CAP 5150 0V61 Foundations of Computer Security and Privacy, UCF
Teaching Evaluations: Overall 4.14 out of 5.00
14 of 40 students responding
Department: 4.03; University: 4.16

Spring 2023, Instructor, CDA 3103 Computer Logic and Organization, UCF
Teaching Evaluations: Overall 2.05 out of 5.00
99 of 172 students responding
Department: 3.98; University: 4.17
(*First time teaching*)

Fall 2016, Guest Lecturer, CSCI P438 Computer Networks, Indiana University

Advising or Mentoring

PhD Students

- Jingzhou Ye, UCF, PhD Student, 2023
- Zhaojie Hu, UCF, PhD Student, 2023
- Sungbin Park, Hanyang University, PhD Student, 2022
- Yifan Zhang, Indiana University, PhD Student, 2019

REU Students

- Omar Saleme, Universidad de Puerto Rico, CAHSI REU Student, 2024
- Edelma Saenz, UCF, CAHSI REU Student, 2023
- Jourdan Beverly, Indiana University, IU REU/SROC Student, 2016

Others

- Autumn Li, UC Berkeley, Software Engineering Intern at Amazon Lab126, 2021