Wenbo Guo

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ABOUT

A graduate student at the School of Cyberspace Security of Sichuan University. My research is in the area of vulnerability detection and privacy protection. Related research is published in JIFS, C&S journals and RAID, ICDF2C conferences. My academic supervisors are Prof. Fang Yong and Prof. Cheng Huang. I will continue my research in the field of Cybersecurity in the future.

Education

Sichuan University Chengdu, China
M.E. in Cybersecurity, GPA3.82/4 (3/92) *Sept. 2020 – Current*

Sichuan University Chengdu, China
B.E. in Cybersecurity, GPA: 3.54/4(Top 10%) *Sept. 2016 – Jun. 2020*

Research Experience

Undergraduate Research Assistant Jun. 2018 – Jun. 2020
Sichuan University *School Of Cyber Science And Engineering*

- Tracking and capturing illegal activities and key hackers in underground forums.
- Proposed a key hacker identification algorithm named HackerRank.
- Built a threat intelligence analysis system named ThreatMiner for hacker forums.

Projects

Vulnerability mining system for C/C++ source code | *Graph Neural Networks, BiLSTM* Aug. 2021 – Current

- Built a database of CVE vulnerabilities in open source software.
- Proposed pruning method with code structure supplementation.
- Proposed a fused graph neural network vulnerability detection method.
- Found some unpublished vulnerabilities.

Digital Currency Fraud Website Detection System | *Machine Learning, Flask* Oct. 2020 – Mar. 2021

- Constructed a feature matrix unique to digital currency fraud sites.
- Proposed a machine learning based detection model.
- Developed a digital currency fraud website detection system.

PyVul: Python code vulnerability mining system | *Deep Learning, OVO SVMs* Sept. 2019 – Apr. 2021

- Proposed a pruning method for python code snippets.
- Proposed a vulnerability mining method that combines code detection and contextual analysis.
- Found some vulnerable code snippets in StackOverflow.

A threat intelligence analysis system for hacker forums | *Deep Learning, Flask* May. 2019 – May. 2020

- Tracked and collected data from multiple underground forums, e.g. 0x00sec, Nulled, HiddenAnswers.
- Proposed a key hacker identification algorithm that integrates text analysis and social network analysis.
- Proposed an effective method to build a hacker profile with multiple dimensions.
- Developed a threat intelligence analysis system for hackerforums.

A QR Code Logistics Privacy Systeml | *Android, RSA, Mysql* Jun. 2018 – Mar. 2019

- Design of segmented encryption and authorization mechanisms based on the principle of least privilege.
- Obfuscation of QR codes using logstics chaos algorithm.
- Developed a express Android APP with privacy protection.

Publications

- **Wenbo Guo**, Yong Fang, Haoran Ou, et al. HyVulDect: A Hybrid Semantic Vulnerability Mining System Based on Graph Neural Network[J]. Computer & Security, 2022, (Accepted).
- Haoran Ou, Yong Fang, **Wenbo Guo**, et al. Viopolicy-Detector: An Automated Approach to Detecting GDPR Compliance Violations in Websites[C]. RAID, 2022, (Accepted).
- **Wenbo Guo**, Cheng Huang*, Weina Niu, et al. Intelligent mining vulnerabilities in python code snippets[J]. Journal of Intelligent & Fuzzy Systems, 2021, 41(2): 3615-3628. doi: 10.3233/JIFS-211011.
- Cheng Huang, **Wenbo Guo**, Yongyan Guo*, et al. HackerRank: identifying key hackers in underground forums[J]. International Journal of Distributed Sensor Networks, 2021. doi: 10.1177/15501477211015145.
- Haoran Ou, Yongyan Guo, Chaoyi Huang, Zhiying Zhao, **Wenbo Guo**, et al. No Pie in The Sky: The Digital Currency Fraud Website Detection[C]. ICDF2C, 2022: 176-193. doi: 10.1007/978-3-031-06365-7_11.
- Liang Liu,**Wenbo Guo***,Yuwei Yang,Huaiyu Guo. Research on QR code logistics privacy based on segmented encryption and time-limited control[J]. Chinese Journal of Network and Information Security, 2019, 5(4): 63-70.

Awards And Honors

- Sichuan University OPPO-CTF Competition Winner — May. 2022
- Dahua Scholarship — Dec. 2021
- First-class Academic Scholarship — Oct. 2021
- Outstanding Graduate Student — Oct. 2021
- National Inspirational Scholarship — Dec. 2019
- First Prize of Sichuan University "Internet +" Innovation and Entrepreneurship Competition — Oct. 2019
- Second Prize of the National Student Cybersecurity Training Camp — Sept. 2019
- Second Prize of the 12th National Student Information Security Competition — Aug. 2019
- Third Prize of the 4th Shanghai Student Cybersecurity Competition — Nov. 2018

Technical Skills

Languages: C/C++, Java, Android, Python, MySQL, HTML/CSS

Frameworks: Flask, TensorFlow, Pytorch, Keras, DGL

Developer Tools: Linux, Git, Docker, PyCharm, Latex

Interest: Vulnerability Detection, Privacy Protection, Network Traffic Analysis, Attack Detection