

Wenbo Guo

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ABOUT

A graduate student at the School of Cyberspace Security of Sichuan University, my research interests are vulnerability mining, privacy protection and network attack detection. My academic supervisors are Prof. Fang Yong and Prof. Cheng Huang. I have published papers in this field, and I hope to continue my research in the field of vulnerability mining in the future.

EDUCATION

Sichuan University

B.E. in Cybersecurity, GPA: 3.54

Chengdu, China

Sept. 2016 – Jun 2020

Sichuan University

M.E. in Cybersecurity, Supervisors: Prof. Yong Fang and Prof. Cheng Huang

Chengdu, China

Sept. 2020 – Current

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 mining 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- Found some unpublished vulnerabilities.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 System | *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 logistics chaos algorithm.
- Developed a express Android APP with privacy protection.

PUBLICATIONS

- **Wenbo Guo**, Yong Fang, Cheng Huang*, et al. HyVulDect: A Hybrid Semantic Vulnerability Mining System Based on Graph Neural Network[J]. Computer & Security, (Second Review).
- **Wenbo Guo**, Cheng Huang*, Weina Niu, et al. Intelligent mining vulnerabilities in python code snippets[J]. Journal of Intelligent & Fuzzy Systems, 2021.
- Cheng Huang, Yongyan Guo*, **Wenbo Guo**, et al. HackerRank: identifying key hackers in underground forums[J]. International Journal of Distributed Sensor Networks, 2021.
- 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, 2021.
- 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.

AWARDS AND HONORS

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| • Dahua Scholarship | Dec 2021 |
| • First-class Academic Scholarship | Oct 2021 |
| • Outstanding Graduate Student Officer | Oct 2021 |
| • National Inspirational Scholarship | Dec 2019 |
| • First Prize of Sichuan University "Internet +" Innovation and Entrepreneurship Competition | Oct 2019 |
| • Second Prize for the individual in 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, Python, MySQL, HTML/CSS

Frameworks: Flask, TensorFlow, Pytorch, Keras, DGL

Developer Tools: Linux, Git, Docker, PyCharm

Interest: Vulnerability mining, privacy protection, network traffic analysis, attack detection