Wenbo Guo

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Education

Sichuan University Chengdu, China
B.E. in Cybersecurity, GPA: 3.54 *Sept. 2016 – Jun 2020*

Sichuan University Chengdu, China
M.E. in Cybersecurity, Supervisor: Prof. Yong Fang *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

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.

A threat intelligence analysis system for hacker forums | *Flask,, SVM, BiLSTM* 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.

PyVul: Python code vulnerability mining system | *BiLSTM, 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.

Digital Currency Fraud Website Detection System | *Flask, Random Forest* Oct 2021 – 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.

Vulnerability mining system for C/C++ source code | *GGNN, BiLSTM, Word2vec* 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- Found some unpublished vulnerabilities.

Publications

- 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.
- Huang C, Guo Y*, **Guo W**, et al. HackerRank: identifying key hackers in underground forums[J]. International Journal of Distributed Sensor Networks, 2021.
- **Guo W**, Huang C*, Niu W, et al. Intelligent mining vulnerabilities in python code snippets[J]. Journal of Intelligent & Fuzzy Systems, 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.
- **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).

Technical Skills

Languages: Java, Python, MySQL, HTML/CSS
Frameworks: Flask, TensorFlow, Pytorch, Keras
Developer Tools: Linux, Git, Docker, PyCharm
Interest: Vulnerability mining, privacy protection, network traffic analysis, attack detection