YIDING (AIDEN) WANG

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EDUCATION

Rice University Aug. 2021 - Dec. 2022
Master of Computer Science (GPA:3.87/4.0) **Houston, TX**

Sichuan University Sep. 2017 - Jun. 2021
Bachelor of Engineering in Cybersecurity (GPA:3.63/4.0) **Sichuan, China**

SKILLS

Programming: Python, Go, SQL, Java, JavaScript, C, C++, MATLAB, PHP.
Security: Kali Linux, BurpSuite, Metasploit, Nmap, SQLmap, Wireshark, Snort, Fortify SCA, IDA.
Development: GitHub, Google Cloud, k8s, BigQuery, BigTable, AppEngine, Docker, MySQL.

WORK EXPERIENCE

Security Engineer Intern (Open Source) @ Google, Sunnyvale, CA May 2022 - Aug. 2022

- Implemented Dependency-diff API & CLI for the open source repository **security baseline assessment** tool **[Scorecard, 3.1K stars]**, surfacing Scorecard's security check results for dependency changes between two branches or commits to identify unhealthy dependencies and get better security postures.
- Developed the Dependency-diff **GitHub Action** that runs on a Pull Request (PR) as a pre-submit check to visualize Scorecard security checks for dependency-diffs as PR comments and code annotations.
- Deployed an endpoint serving **REST API**s for automatic BigQuery service authentication, enabling Scorecard and Scorecard Action to retrieve information from the BigQuery dataset Open Source Insights statelessly; cooperated with a global Google Cloud team to improve the granularity of data fields in BigQuery.
- Added scanning support for Go, C, and C++ language-specified fuzzing functions as a part of Scorecard's fuzzing check to further improve the **fuzz testing** coverage of open source projects on GitHub.

Web Security Intern @ Tianrongxin CyberSec Inc., Sichuan, China Jun. 2020 - Jul. 2020

- Tested server authorization issues using two **BurpSuite** extensions AuthMatrix & Authz, identified multiple **IDOR** broken access control exploiting points on several app routes.
- Performed black-box **penetration testing** for authorized websites, reported multiple injection exploits in their servers; $\sim$ 25% of the detected known vulnerabilities have a CVSS3Score $>$ 7.0 (high risk).

PROJECTS

Crypto Election: A Voting System Feb. 2022 - Apr. 2022

- Implemented a cryptographical voting system that can distribute, collect, and count election ballots with security assurance using **ElGamal**, **SHA-256**, and the **Chaum-Pedersen Zero-knowledge Proof**.
- Used the **additive homomorphism** feature of ElGamal to count votes securely, also its **partial decryption** feature for election trustees to decrypt cipher ballots with jointed public and secret keys authoritatively.
- Adopted SHA-256 as the ballot digest and utilized the zero-knowledge proof to provide ballots validation.

Backdoor Webshell-in-log Detection Mar. 2021 - Jun. 2021

- Implemented a heuristic Web malware (Webshell) detection model using the backend history log.
- Proposed two significant features for detecting Webshell-in-log: **Isolation Page** and **Minimal Unique IP Access**, model reached $\sim$ 96% prediction F1-Score and an FPR $<$ 2.0% on the testset.

Cross-site Scripting Guardian: A Static Code Analyzer Dec. 2019 - Jun. 2020

- **Publication:** proposed a novel XSS scanner by tracing the source-sink data stream in the backend code.
- Optimized a PHP source code tokenizer "VLD", added **data stream specified features**, and rewrote its output format from standard output stream to JSON, making it easier to use (see in **aidenwang9867/vld**).