Jason Liu

liu.jason84@gmail.com · 416-206-2862 · www.linkedin.com/in/jasonliu84

Summary of Qualifications

- Software engineering student with over 5+ years of programming experience with languages including but not limited to Java, Python, C, C++ and Golang
- Information security experience centered around designing and deploying security solutions on web servers as well as embedded platforms
- Proven track record of identifying and patching security vulnerabilities with an average turnaround time of less than 10 days

Experience

Crypto4a Technologies – Cybersecurity Developer (January 2020-April 2020)

- Developed tools to ensure compatibility with the new NIST **ACVP** testing protocol resulting in Crypto4A being one of the first companies to support the new format
- Carried out security testing on the hardware security module resulting in the detection and mitigation of several flaws that could have led to a potential denial of service exploit
- Created a cryptographic benchmarking tool that measures the time to generate **RSA** and **ECDSA** signatures on a custom chipset

GooseCTF – Founder and President (August 2018-Present)

- Set up a cybersecurity training server on Amazon AWS using the Security Shepard framework to train new club members in web exploitation
- Lead a training seminar on the topic of x86 reverse engineering using the **Radare2** disassembler to an audience of **70** undergraduate and graduate students
- Established connections with the Waterloo Institute of Privacy and Security as well as professors focusing on automotive embedded security

Waterloo Institute of Cybersecurity and Privacy – Research assistant (September 2019-December 2019)

- Implemented a function hiding inner product encryption that was deployed on a **MYSQL** database using C
- Identified an incompatibility issue with OpenSSL 1.10 and the existing FHIPE implementation and proposed ideas on integrating cross compatibility
- Carried out analysis of the algorithm and provided alternate implementation options that will improve portability and ease of implementation

Stars Technologies – Application Security Engineer (April 2019-August 2019)

- Wrote a program that patched a vulnerability found in over 3000 internal files decreasing the turnaround time from potentially months to under a week
- Researched and developed enhancements to authentication system using principles from 'defense in depth' resulting in a **tenfold** decrease in successful credential stuffing attacks
- Built the framework for implementing a machine learning algorithm to detect fraudulent login attempts using **Tensorflow**

Projects

Serial port monitoring and reporting program (September 2017-Present)

- Used a Transport WR31 as a monitoring module that connects to a fire alarm panel via an RS232 link
- Created an android app that uses the firebase cloud notification system to deliver diagnostic data to a connected mobile device
- Developed a separate authentication module using an RSA PKCS11 signatures to prevent malicious users from connecting to the open port on server

Education

University of Waterloo, Waterloo ON

- Bachelor of Software Engineering (BSE) Candidate, anticipated graduation 2023