Chris Cohen

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EDUCATION

Aug. 2017 – May 2021

Bachelor of Science at Purdue University

- Software Engineering and Cybersecurity
- 8x Dean's List, 7x Semester Honors
- 3.83 GPA

EMPLOYMENT

May 2021 – Present

Qualcomm, Secure Systems Group

Software Engineer – San Diego, CA

- Developed a feature to create a device-unique, secure, verifiable boot certificate chain (BCC), which attests to the exact state of hardware and software running on the device.
- Took full ownership over creating the BCC library, which will be stamped in ROM on an upcoming Qualcomm chipset, and ended up being over 2,500 lines.

May 2020 – May 2021

Qualcomm, Government Division (QGOV)

Software Engineering Intern – Worked Remotely

- Developed an Android app for a Qualcomm chipset feature that ensures secure wireless connection, communicating information about malicious access points to the user.
- Innovated an AI-powered system that processes media from non-AI devices, and plots important objects onto a map.

May 2019 – Aug. 2019

Naval Surface Warface Center, Crane

Software Engineering Intern – Crane, IN

- Improved US Navy missile sustainment efforts by upgrading an existing natural language processing algorithm to process failure databases.
- Held a valid 'secret' level security clearance given by the US Government.

EXPERTISE

Languages: C, C++, Python, ARM/x86 Assembly, Bash, Javascript

Memory Management

- Paging, Virtualization
- Cache Memory Hierarchy
- Stack and Heap Management for ARM/x86

OS and Systems Programming

- Software/Hardware Interrupts and Device Management
- Asynchronous Inter-Process Communication (IPC)
- Return-Oriented Programming (ROP)
- Concurrency and Parallelism (Semaphores, Locks, Forking, Threading, Scheduling)

OSI/ISO 7-Layer Model

- TCP, UDP, HTTP
- IP addressing/routing, DHCP, DNS translation
- MAC addressing/routing, ARP
- Basic cryptography and security approaches

PROJECTS

April 2020

Web Server Honeypot (Extracurricular)

- Hosted an HTTPS Honeypot Server to lure attackers and collect information
- Automatic blacklisting for clients sending excessive requests in a short period of time
- Analyzed logs and learned about different types of attacks on web servers

March 2020

Process Hijacking in XINU (Operating Systems)

- Manipulated a victim process by locating and modifying return addresses and local variables in the runtime stack
- Learned about protection against this sort of attack (i.e. stack canaries)
- Studied how x86 interrupts, system calls, and function calls affect the runtime stack