Sean Maher

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Personal Info

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Education

Hons. BSc Computer Science, Hons. BSc Math (Data Science)
University of Ottawa

CS Accomplishments

CPTC 2020 Global Finalist

Languages

C, Common Lisp, Python, x86-64 assembly, C++, Java, bash

Tools I use

git, emacs, gdb, unix text processing tools, radare2, Splunk, Elastic,

Natural Languages

English, French

Interests

Currently singing with the Capital Chamber Choir (capitalchamberchoir.ca)
9th grade RCM Voice,
over 9 years of singing in choirs,
over 13 years of music

Experience

Google SWE Intern (Summer 2020)

- Worked on the WebAssembly Standards team to port ARM Neon SIMD code to Wasm using a header-swap library in portable C
- Contributed over 50 classes of intrinsic, each comprising 5-20 intrinsic functions, for a total of over 70k LoC and 52 merged PRs
- Built a disassembler into radare2 for Wasm SIMD instructions

Bank of Canada Monitoring SOC (Summer 2019)

- Worked with a team of 5 analysts to monitor the Bank of Canada.
- Developed an application from the ground up in Python and VB to analyze email and automate tedious parts of the team's workflow
- Collaborated to build detections in Splunk for various TTPs, notably privilege escalation, lateral movement, and defense evasion

Projects

Bloatcheck (WIP) | *Common Lisp, distributed systems*
Current progress: Built a distributed web-crawler, built a structured data serialization protocol, designed a secure communication protocol built on said serialization protocol, designed an authentication system (similar to Kerberos), and designed an architecture for the finalized backend.

discfs | *Common Lisp, Discord*
A content-addressable filesystem, implemented with Discord messages as its backend

Text Editor (Sug) | *C, font rendering, graphics pipeline*
A handmade graphical text editor for X11
Implemented font parsing and rendering from scratch

spkr | *Python, Flask, Hackathon*
A small web-app written in Python with flask which allows users to login with their Spotify account, and will curate a playlist to cater to each user

Regular Expression Parser | *C, simple compiler internals*
Implemented recursive descent parser and interpreter for regex

Flow (Won MLH Local Hack Day) | *Python, Bash [in team of 3]*
Used a RasPi to monitor density of people via network traffic
Developed website and Android app to display said data

Malware Reverse Engineering | *C, Asm, OS Components*
Know x86-64 assembly, operating system internals, and built crackmes.