

Jason Ngo

Computer Science Major @ UBC

+1 587-890-5411 | work@jasonn.dev | github.com/Green-Avocado | www.jasonn.dev

Skills Summary

Application Security	Buffer overflow, Format-string exploits, Return-oriented programming, Reverse engineering
Web Security	SQL injection, Cross-site scripting, Template injection, Local file inclusion, Prototype pollution
Systems development	Rust, x86 Assembly, C / C++, Java
Web development	NodeJS, REST APIs, NGINX, Google Firebase
System administration	Linux, Docker, SQL

Work Experience

2020/04 - Present	Freelance Software Development <ul style="list-style-type: none"> Wrote detailed technical documentation using LaTeX.
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Technical Extracurriculars

2019/09 - Present	CTF Competitions https://github.com/Green-Avocado/CTF <ul style="list-style-type: none"> Reverse engineered binaries without symbols using Ghidra and Radare2. Performed dynamic analysis and debugged exploits using GDB. Identified vulnerabilities in binary applications and web services. Defeated common exploit mitigations such as position independent executables, address-space layout randomization, stack canaries, and relocation read-only. Created writeups to explain vulnerabilities and exploit techniques used in each challenge.
2017/09 - 2020/02	Vex Robotics Club https://github.com/Green-Avocado/3388D-vex-robotics-edr-2020 <ul style="list-style-type: none"> Wrote firmware in C++ which used the Vex API to receive instructions from a controller. Used feedback from sensor data to guide autonomous routines and aid user control. Created a user interface for the controller display screen to configure the robot at runtime. Our team won a programming award and we were invited to compete in the international event.

Hackathon Projects

2022/01	Language Exchange https://github.com/Green-Avocado/Language-Exchange <ul style="list-style-type: none"> Created a website for connecting language students with complementary strengths and goals.
2021/11	Speak-able https://devpost.com/software/speak-able-inclusive-unconferencing <ul style="list-style-type: none"> Created a website for encouraging inclusivity in participant-driven meetings.
2020/08	Study Tinder https://devpost.com/software/study-tinder <ul style="list-style-type: none"> Created a website for helping students connect and help each other study while social distancing.
2020/08	BikePath https://devpost.com/software/bikepath-dkpstx <ul style="list-style-type: none"> Created a website to help users find alternative locations that would permit eco-friendly alternatives to driving, such as walking or biking.

2020/08

COVID Wait

<https://devpost.com/software/covid-wait>

- Created a website to help users avoid highly populated areas and reduce the risk of exposure to COVID-19.

Cybersecurity Projects

2021/03 - Present

pwndocker

<https://github.com/Green-Avocado/pwndocker>

- The program is frequently used by myself in CTF competitions to create an environment for testing and debugging exploits.

2022/02

BBY Stealer Malware Analysis

<https://github.com/Green-Avocado/bbystealer-malware-analysis>

- Helped affected victims with incident response.

2021/10 - 2022/01

UBC MapleCTF

<https://github.com/ubcctf/maple-ctf-ubc-2022>

- Wrote challenges in C with intentional vulnerabilities to progressively introduce and test binary exploitation techniques.
- Used Docker to containerize challenges.

2021/09 - 2021/12

EasyROP

<https://github.com/Green-Avocado/EasyROP>

- Wrote a program in Java to automate writing scripts for binary exploitation.

Personal Projects

2020/12 - Present

website

<https://github.com/Green-Avocado/website>

- Used NodeJS with Express to serve web pages which are generated using a templating engine.
- Set up a reverse proxy using NGINX which secures connections using TLS and forwards requests to internal services.
- Used Docker to containerize internal services, allowing each service to be modified and restarted independently.
- Tested the website and scanned for vulnerabilities using continuous integration.

2021/11 - 2022/01

atom-ide-rust

<https://github.com/rust-lang/atom-ide-rust>

- Contributed to an open source plugin for integrating rust-analyzer into the Atom text editor.
- Used NodeJS to read config files, parse JSON data, and interface with a language server.
- Wrote documentation using markdown to explain the usage of the plugin with examples.
- The plugin has been downloaded over 164 000 times.

2021/12

discord-balance-tracker

<https://github.com/Green-Avocado/discord-balance-tracker>

- Wrote a Rust application to track balances of users on Discord.
- Used asynchronous programming to interact with the Discord API for sending and receiving interactions.
- The application was used by my roommates and myself to keep track of our shared finances.

2021/03

Etwahl

<https://github.com/Green-Avocado/Etwahl>

- Wrote a program in C++ to bind signals from an electronic piano to simulated keypresses.
- Received MIDI signals over a USB connection using the open source RtMidi library.
- Used CMake, X11 libraries, and Windows libraries to develop a multi-platform application.

Awards

2022/01

CyberSci Vancouver Regionals - First Place

2020/03

Vex EDR Alberta Provincial Tournament - Think Award

2019/04

U of Calgary Science Engineering and Technology Challenge - First Place

Education

