Omri Bornstein

Software Engineer

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Education

2020 In Progress	**Bachelor of Computer Science**, *Monash University*, Melbourne
2017 2019	**South Australian Certificate of Education**, *Australian Science & Mathematics School* (ASMS), Adelaide

Skills

Computer Programming Languages

Go	*server-side and command-line interfaces (CLIs)*
TypeScript	*full-stack*
JavaScript	*client-side on web browsers*
Python	*data analysis and research*
Kotlin/Java	*Minecraft plugins*
C/C++	*research*

Document Markup Languages

HTML/CSS	*client-side UI on web browsers*
TeX/LaTeX	*PDF document typesetting*
Markdown	*technical documentation and communication*

Tools

Git	*source code version control (see open-source projects for examples)*
GitHub/GitLab	*collaboration and CI/CD (see open-source projects for examples)*
MongoDB	*document non-relational database*
SQL	*relational database querying*
Docker	*container-style packaging*
Kubernetes	*container orchestration*
Vagrant	*virtual machine (VM) management*

Other

- **Platforms**: Linux, Cloud Native, web servers/browsers, macOS, Windows
- **Soft Skills**: technical writing, critical/analytical thinking, presenting/public speaking, research, troubleshooting/debugging, explaining, collaboration/teamwork

Projects

Open-Source

May 2022 Present	`raker`, *AppleGamer22/raker on GitHub* • A social media scraper that is interfaced via a server-side rendered HTML user interface (or a CLI), and is managed by a REST API and a NoSQL database. • Server-side is built with Go, MongoDB, JSON Web Tokens (JWTs) and Docker. • Client-side is built with HTML/CSS (Bootstrap). • The companion CLI utility and configuration are built with Cobra and Viper.
May 2022 Present	`stalk`, *AppleGamer22/stalk on GitHub* • A cross-platform file-watcher that can run a command after each file-system operation on a given files or simply wait once until a file is changed. • Built with Go, Cobra and FSnotify.
January 2022 Present	`cocainate`, *AppleGamer22/cocainate on GitHub* • A cross-platform re-implementation of the macOS utility `caffeinate` that keeps the screen turned on either until stopped, for a set duration of time or while another process still runs. • Built with Go and Cobra.

December 2021	**CTFtime Discord Bot**, *monsec/ctftime-discord-bot on GitHub*
	• A Discord bot for MonSec's Discord server, that fetches statistics about competing Capture the Flag (CTF) teams from CTFtime, and displays them in the Discord interface.
	• Built with Go.
June 2020	**sp**, *AppleGamer22/sp on GitHub*
January 2021	• My first attempt at building a Minecraft server plugin. This plugin adds the requirement that the player supplies the password (via a server command) before proper server interaction is allowed, and as long as the password isn't provided, the currently-unauthorized player is blinded and immobile.
	• Built with Kotlin.
April 2019	**scr-cli & scr-web**, *AppleGamer22/scr-cli on GitHub* & *AppleGamer22/scr-web on GitHub*
May 2022	• My previous attempt at building a full-stack (and a CLI) social media scraper with a single-page website framework and a RESTful server.
	• Server-side is built with TypeScript & Nest (with a Node.js runtime) MongoDB, JSON Web Tokens (JWTs) and Docker.
	• Client-side is built with Angular and Ionic.
	• The full-stack packages is bundled with Nx.
	• The CLI is built with OCLIF

Research

August 2021	**Software Contributor**, *Monash University's FIT2082 unit*, Melbourne
December 2021	• I contributed to an existing codebase, based on prior research by (Gange, Harabor and Stuckey, 2021) about *Lazy CBS*, their Multi-Agent Path Finding (MAPF) algorithm.
	○ I modified the *Lazy CBS* codebase such that the algorithm also outputs the final set of constraints that is used to rule out paths, such that *Lazy CBS* is formally an **Explainable** Multi-Agent Path Finding (XMAPF) algorithm.
	○ I learned how to enable Python-to-C++ bindings, such that the compiled *Lazy CBS* codebase can be used as a Python-facing library for future projects.
	• Built with C/C++ and Python on top of Linux.

Freelancing

June 2021	**Software Engineer**, *Contract*, Melbourne
December 2021	• I implemented a fault-tolerant file back-up system that enables the continuation of file transferring from an variably-approximate point in time before the back-up disruption.
	• Built with Go.

Experience

June 2022	**Vice President**, *Monash University's Cyber Security Club (MonSec)*, Melbourne
Present	• Coordinated collaboration with the university's Faculty of Information Technology for purposes of events and advertising.
	• Club website:
	○ Updated the theme to its latest version, and resolved new layout bugs in collaboration with other club committee members.
	○ Improved the Kali Linux virtual machine set-up guide such that it includes more details on alternative installation methods.
	• Changed our CTFd's theme. In addition, I disabled the theme's default CRT-like flicker effect by editing its CSS files, such that people with epilepsy would not get an inferior experience.
	• Club representation:
	○ Faculty of IT's Take CTRL (Cryptography & Web Hacking Workshop)
	○ Faculty of IT's Munch & Mingle
	○ Faculty of IT's open day
	○ Orientation week of 2022's 2nd semester.
	• Capture the Flag (CTF) participation:
	○ The University of Adelaide's CTF
	○ SHELL CTF
	○ DownUnderCTF
January 2022	**Secretary**, *Monash University's Cyber Security Club (MonSec)*, Melbourne
June 2022	• Organised and recorded official committee and club meetings.
	• Represented the club during the orientation week of 2022's 1st semester.
	• Organised and ran a binary-level reverse engineering workshop (a recording is available available on YouTube).
	• Started a section on the resources page of the club's website, with a detailed section with a guide on how to easily install and set-up a Kali Linux virtual machine.
May 2021	**General Representative**, *Monash University's Cyber Security Club (MonSec)*, Melbourne
January 2022	• Helped to organise and ran a workshop about brute-forcing tools used for penetration testing.
	• Participated in ångstromCTF