

# Omri Bornstein

Software Engineer

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## Education

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

## Skills

### Computer Programming Languages

[Go](#) [raker](#), [stalk](#) & [cocainate](#) *server-side & command-line interfaces (CLIs)*  
[TypeScript](#) [scr-cli](#) & [scr-web](#) *full-stack*  
[Python](#) [FIT2082](#) research project *data analysis*  
[Kotlin/Java](#) [sp](#) *Minecraft plugins*  
[C/C++](#) [FIT2082](#) research project

### Document Markup Languages

[HTML](#) & [CSS](#) *client-side UI on web browsers*  
[T<sub>E</sub>X/L<sup>A</sup>T<sub>E</sub>X](#) *PDF document typesetting*  
[Markdown](#) *technical documentation and communication*

### Tools

[Git](#) [open-source projects](#) *source code version control*  
[GitHub/GitLab](#) [open-source projects](#) *collaboration & CI/CD*  
[MongoDB](#) [raker](#) & [scr-cli](#) & [scr-web](#) *document non-relational database*  
[SQL](#) *relational database querying*  
[Docker](#) [raker](#) & [scr-cli](#) & [scr-web](#) *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 [raker](#), [AppleGamer22/raker on GitHub](#)  
Present
  - 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 [stalk](#), [AppleGamer22/stalk on GitHub](#)  
Present
  - 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 [cocainate](#), [AppleGamer22/cocainate on GitHub](#)  
Present
  - 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.

## Experience

### Clubs & Societies

- 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 2<sup>nd</sup> 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 1<sup>st</sup> semester.
  - Organised and ran a binary-level reverse engineering workshop (a recording is 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](#)

### 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](#).