

# Omri Bornstein

Software Engineer

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in [omri-bornstein](#)  
🎮 [AppleGamer22](#)

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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 & cocaineate | 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            |
| TEX/LATEX  | 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, <a href="#">AppleGamer22/raker on GitHub</a>   |
| Present      | <ul style="list-style-type: none"><li>• 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.</li><li>• Server-side is built with <a href="#">Go</a>, <a href="#">MongoDB</a>, <a href="#">JSON Web Tokens</a> (JWTs) and <a href="#">Docker</a>.</li><li>• Client-side is built with HTML/CSS (<a href="#">Bootstrap</a>).</li><li>• The companion CLI utility and configuration are built with <a href="#">Cobra</a> and <a href="#">Viper</a>.</li></ul> |
| May 2022     | stalk, <a href="#">AppleGamer22/stalk on GitHub</a>   |
| Present      | <ul style="list-style-type: none"><li>• 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.</li><li>• Built with <a href="#">Go</a>, <a href="#">Cobra</a> and <a href="#">FSnotify</a>.</li></ul>  |
| January 2022 | cocainate, <a href="#">AppleGamer22/cocainate on GitHub</a>   |
| Present      | <ul style="list-style-type: none"><li>• A cross-platform re-implementation of the macOS utility <a href="#">caffeinate</a> that keeps the screen turned on either until stopped, for a set duration of time or while another process still runs.</li><li>• Built with <a href="#">Go</a> and <a href="#">Cobra</a>.</li></ul>   |

- 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

- 2023 **President**, [Monash Cyber Security Club \(MonSec\)](#), Melbourne
- June 2022 **Vice President**, [Monash 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 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 **Assistant Member Training Officer**, [Monash Cyber Security Club \(MonSec\)](#), Melbourne
- January 2022
  - Helped to organise and ran a workshop about brute-forcing tools used for penetration testing.
  - Assisted in the club's management and operations.
  - Participated in [ångstromCTF](#).

## Freelancing

- June 2021 **Software Engineer**, *Contract*, Melbourne
- December 2021
  - 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](#).