Greater Melbourne Area
Australia
omribor@gmail.com
applegamer22.github.io
omri-bornstein
AppleGamer22
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Omri Bornstein

Software Engineer

Education

2020 – In Progress **Bachelor of Computer Science**, *Monash University*, Melbourne

2017 – 2019 **South Australian Certificate of Education**, *Australian Science & Mathematics School (ASMS)*, Adelaide

Experience

Volunteering

2023 **President**, *Monash Cyber Security Club (MonSec)*, Melbourne

- Coordinated collaboration with the university's Faculty of Information Technology for purposes of events and advertising.
- Added to the club's website a footer with social media links and a tree-like content organisation system.
- Added more Azure infrastructure and an automation pipeline to the club's CTFd server with Terraform and GitHub Actions.
- Successfully registered the club for Canva and GitHub non-profit licenses.

June 2022 – December 2022 **Vice President**, *Monash Cyber Security Club (MonSec)*, Melbourne

- Coordinated collaboration with the university's Faculty of Information Technology for purposes of events and advertising.
- Organised and ran an introductory-level workshop about steganography (a recording is available on YouTube).
- Represented the club at Faculty of IT's Take CTRL and Munch & Mingle.
- Capture the Flag (CTF) participation: The University of Adelaide's CTF, SHELL CTF, DownUnderCTF

January 2022 – June 2022 **Secretary**, *Monash Cyber Security Club (MonSec)*, Melbourne

- Organised and recorded official committee and club meetings.
- Represented the club during the orientation week of 2022's 1st semester.
- Organised and ran an introductory-level binary 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.
- Wrote a Python data visualisation program in order to analyse membership data, such that it would be easier for future committees to compile reports, to understand registration trends and to apply for student association grants.

May 2021 – January 2022 **Assistant Member Training Officer**, *Monash Cyber Security Club (MonSec)*, Melbourne

- 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.

Research

2023 Semester 1 & 2 **Research Assistant**, *Monash University's FIT3144 unit*, Melbourne

- Extending a browser-based tool (Wagner et al., 2023) used for building evolutionary algorithms in educational settings.

2021 Semester 2 **Research Assistant**, *Monash University's FIT2082 unit*, Melbourne

- 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 – December 2021 **ProgrammerFreelance**, *Contract*, Melbourne

- Implemented a custom fault-tolerant file back-up system that enables the continuation of file transferring from a variably-approximate point in time before the back-up disruption.
- Built with Go.

Open-Source Projects

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 set of 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.

June 2020 – January 2021 — **`sp`**, *`AppleGamer22/sp` on GitHub*

- 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 – May 2022 — **scr-cli/scr-web**, *`AppleGamer22/scr-cli` on GitHub*/*`AppleGamer22/scr-web` on GitHub*

- 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 package is bundled with Nx.
- The CLI is built with OCLIF

Skills

Computer Programming Languages

Go	`raker`, `stalk` & `cocainate`	*server-side & command-line interfaces (CLIs)*
JavaScript	FIT3144 research project, 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*
Terraform		*infrastructure definitions as code*

Other

- **Platforms**: Linux, Cloud Native, web servers/browsers, macOS, Windows