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Omri Bornstein

applegamer22.github.io

Education

1. **2017 - 2019**: secondary education at Australian Science & Mathematics School, Adelaide, South Australia

2. **2020 - Present**: Bachelor of Computer Science at Monash University, Melbourne, Victoria

Skills

- **Computer Programming Languages**: Go, TypeScript/JavaScript, Python, Kotlin/Java, C/C++

- **Document Markup Languages**: HTML, CSS, TeX, Markdown

- **Natural Languages**: English, Hebrew

- **Tools**: Git, GitHub, Docker, Kubernetes, GoReleaser, GitHub Actions

- **Platforms**: Linux, Cloud Native, Web

- **Soft Skills**: Writing, Presenting, Collaboration

Experience

1. **May 2021 - January 2022**: General Representative at Monash Cyber Security Club.

2. **January 2022 - June 2022**: Secretary at Monash Cyber Security Club.

3. **June 2022 - Present**: Vice President at Monash Cyber Security Club.

Projects

Open-Source

- `cocainate` is 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.

- `stalk` is a cross-platform file-watcher that can run a command after each file-system operation on a given file(s) or simply wait once until a file is changed.

- `rake` is 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.

- scr-web (and its scr-cli counterpart) is my previous attempt at building a full-stack social media scraper, which was abandoned due to the excessive number of dependencies and the rather large build-size.

- sp is 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. Until as password is provided, the currently-unauthorized player is blinded and immobile.

Research

As part of the FIT2082 unit, 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. The *MAPF* problem is a subset of the path finding research field, which presents the additional requirements of multiple agents, each with a unique pair of a source and a target, such that the path between them does not intersect with another path during the same point in time. My task was to modify the *Lazy CBS* codebase such that the algorithm also outputs the final set of constraints that is used to rule out possible paths, such that the Lazy is formally an Explainable Multi-Agent Path Finding (*XMAPF*) algorithm. In addition, I added *Python-to-C++* bindings, such that the compiled *Lazy CBS* codebase can be used as a Python-facing library for future projects.

Freelancing