Ashwin **Gur**

Computer Science · Mechatronics · University of Sydney

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Education

University of Sydney

Sydney, AU

BEng (Hons) in Mechatronics and BSc in Computer Science — *Feb. 2020 - Present*

- Weighted Average Mark: 85.7% • Dean's List of Excellence in Academic Performance • Dalyell Scholar

Experience

Software Engineer

Sydney, AU

USYD Rocketry Team — *Feb. 2022 - Present*

- Working on the Ironbark team whose purpose is to develop a complete rocket modelling and simulation system which the other teams will eventually use
- Using an OOP approach with Python
- Continued collaboration and meetings with other student engineers to ensure a smooth workflow and integration of tasks

Software Engineer Intern

Sydney, AU

Company: CUAVA — *Oct. 2021 - Present*

- Working under a lead engineer, in a team of 6 people to help develop a satellite system, CubeOS
- Coding in Rust to maintain or refactor existing modules and create new ones

Android App Developer

Sydney, AU

Company: Streamplate — *Jul. 2021 - Oct 2021*

- Assisting new interns/employees who have joined the Front End team (such as the required tasks and how the APIs work)
- Communicate effectively with the Front End and Back End teams in order to implement new features and fix bugs
- Responsible for pushing updates to the Play Store and reviewing feedback to improve user experience
- Maintaining a high standard of work in the higher stress environment of a startup and considering which tasks to prioritise

Projects

CHIP-8 Emulator

Code

Personal Project — *Dec. 2021*

- A CHIP-8 Emulator written in Rust using the sdl2 library for the interface and input controls
- Follows all the specifications outlined by the CHIP-8 Technical reference
- Consolidated understanding of low level programming and features such as ram, stack, registers and instructions

Stock Price Tracker

Code

Android Application — *Jul. 2021*

- A stock tracking tool for a web game's stock system that notifies a user when their selected triggers are reached
- Used Retrofit2 to make queries on the REST API and Services to make periodic queries while the app is closed.
- Used an Object Relational Mapper (Android Room) for the SQLite database to provide robust and efficient data management
- Strictly follows the MVVM architecture to maintain a separation of concerns between UI, business logic and databases

TEA Encrypted BTree

Code

University Project • Systems Programming — *2021 Semester 1*

- Implementation of a BTree in C that stores data using a TEA encryption and is threadsafe
- Implemented a threadpool to speed up the encryption and decryption process by distributing tasks
- Thorough E2E testing using a bash script

Turret-Spinner

Code

Personal Project • Indie Game — *Jan. 2022*

- Component pattern used for making the code very modular
- State pattern used for implementing the bosses to encode more complex behaviour
- Extensive use of OOP principles such as inheritance to reuse code and be able to effectively implement new game object ideas.

Skills

Languages C • Java • Python • MatLab • Kotlin • Rust • C# • Assembly

Applications/Systems VScode • Android Studio • LaTeX • Linux/Unix