# Scott Moore

**Software Engineer**

+61 466 724 224 | me@scottwillmoore.au | scottwillmoore.au | @scottwillmoore | Melbourne, Australia


A passionate engineer who is enraptured by mathematics, electronics, and software development. Well-rounded, detail-oriented, and tenacious. Breadth of knowledge in a wide range of skills and technologies. Proud of my work and strive to maintain a high standard of workmanship. Enthusiastic and eager to learn. Seeking a position that will challenge and expand my experience in this profession.

## Qualifications

### Bachelor of Electrical Engineering (Honours) and Computer Science

**Monash University (February 2017 – June 2022)**

Electives: Computer Vision (ECE4076), Intelligent Systems (FIT3080), PCB Design and Manufacture (Colorado University, ECEN 4013), Quantum Computing (Colorado University, PHYS 3090).

- First Class Honours.
- Grade Point Average (GPA) of 3.56.
- Weighted Average Mark (WAM) of 80.6%.
- Faculty of Engineering Dean's Honours List from 2017 – 2020.

### Victorian Certificate of Education (VCE)

**Mentone Grammar School (January 2010 – December 2016)**

Units: English Language, Interactive Digital Media, Mathematical Enhancement Studies, Mathematical Methods, Physics, Specialist Mathematics, Software Development.

- ATAR of 99.15.
- Academic Full Colours in 2015, 2016.
- Premier's Award for Interactive Digital Media (Highest mark in Victoria).
- High Distinction (91%) in Mathematical Enhancement Studies (Monash University, MTH1040).

## Experiences

### Research Scholarship

**Monash Summer Research Program (November 2021 – February 2022)**

- Examined academic literature on the topic of robot trajectories in VR.
- Developed a VR application for the **Oculus Quest 2** to control a Fetch Mobile Manipulator robot.
- Created a VR interface in **C#** using the **Unity** game engine.
- Controlled the robot with services written in **Python** on the Robot Operating System (**ROS**).

### Exchange Student

**Monash University Malaysia (July 2019 – December 2019)**

**University of Colorado Boulder (January 2020 – April 2020)**

### IT Support Officer

**Mentone Grammar (January 2018 – July 2019)**

- Provided IT support to staff members and students.
- Managed the Microsoft Deployment Toolkit (**MDT**) server.
- Organised and managed IT assets and leases across the organisation.
- Designed **SQL** queries to process assets in bulk to improve productivity in larger rollouts.
- Developed an interactive installer in **C#** to improve the user experience in the deployment of Office 365.

### Tutor

**Mentone Grammar (February 2017 – December 2018)**

**Independent (February 2017 – July 2019)**

- Provided consultation at the library for students.
- Hosted a weekly mathematics support group for students in year 7, 8, and 9.
- Provided one-on-one assistance for students in mathematics.

### Labourer

**Black Rock Balustrades (December 2016 – January 2017)**

# Projects

## Fetch Teleoperation in VR

**https://github.com/scottwillmoore/fetch_vr**

- A virtual reality application (VR) written in **C#** with the **Unity** game engine.
- A collection of services written in **Python** to control the robot using the Robot Operating System (**ROS**).

## Short Links Plugin for Obsidian

**https://github.com/scottwillmoore/obsidian-short-links**

- A plugin for **Obsidian**, a note-taking application, to shorten internal links.
- It is implemented in **TypeScript** and interfaces with the **Obsidian** API and the **CodeMirror** API.

## Klondike Solitaire

**https://github.com/scottwillmoore/klondike**

- An implementation of Klondike solitaire with a solver written as a **Rust** library.
- A TypeScript library which binds to the **Rust** library with **WebAssembly**.
- A web application built with **TypeScript** and **React**, which uses the **TypeScript** library.
- A reproducible development and deployment environment built with **Nix**.
- Still under development in my free time.

## Project Euler Solutions

**https://github.com/scottwillmoore/project-euler-solutions**

- Solutions to over fifty problems written in Python.

# Skills

**HTML** and **SVG**. Modern **CSS**: Content and border box model. Flow, flexbox, and grid layouts. Container and media queries. Variables. Architectures: **BEM** and utility-first libraries such as **Tailwind**. Preprocessors: **PostCSS** and **SASS**.

Modern **JavaScript**: ES5, ES6+. Event loops. Web workers. Asynchronous programming: callbacks and promises. Object-oriented programming: classes, inheritance, and composition. Functional programming: closures, pure functions, and higher-order functions. Reactive programming: observables, and signals. **TypeScript**: Configuration. Generics. Conditional, discriminated and union types. Type assertions. Knowledge of the built-in types.

Front-end development. **Web APIs**: DOM, canvas, and WebGL. Fetch. Intersection and resize observers. **Node APIs**. Package management: **NPM** and **Yarn**. JavaScript bundlers compilers, and tools: Vite, Parcel, Esbuild, Webpack, Prettier, ESLint and Rome. **React**: JSX, MDX, and TSX. Class and function components. State management strategies: hooks, contexts, and popular libraries such as **Redux** and **Jotai**. CSS strategies: **CSS modules** and **CSS-in-JS** with **Emotion**, or **Styled Components**. Server-side rendering (**SSR**), and static-site generation (**SSG**) with **Next**. Some experience with **Vue**, **Svelte** and **Astro**.

Back-end development. Databases: Use of **SQL**. Aware of relational databases and **NoSQL** alternatives. Protocols: **IP**, **UDP**, **TCP** and **HTTP**. Use of both **WebSockets** and **WebRTC**.

**Python**: Algorithms and data structures. Scientific computation with NumPy and Matplotlib. **MATLAB**: Engineering problems. Simulink for control system analysis. **Java**: Game development. **C#**: VR application development with **Unity**. Desktop application development with Windows Presentation Foundation (**WPF**). **C**, **C++**, **Rust**: CLI development. Embedded development on an Arduino. Game development. WebAssembly. **Haskell**: Algebraic data types. Combinators. New (nominal) types. Standard classes: functors and monads. Limited experience with: **Lua**, **Go** and **PHP**.

**Git**: CLI. GitHub features such as actions, issues, and workflows. Continuous integration and deployment (**CI**, **CD**).

Experienced user on **Windows**, **MacOS**, and **Linux**. Linux distributions: **Ubuntu**, **Fedora**, **Arch Linux** and **NixOS**. Use of shells such as **PowerShell** (for Windows) and **Bash** (for Linux). Reproducible development and deployment with **Docker**, and **Nix**. Some experience with cloud platforms such as Amazon Web Services (**AWS**) and Google Cloud platform (**GCP**).

Significant experience with **Adobe Photoshop**, **Adobe Illustrator**, and **Figma**. Some experience with other **Adobe Creative Cloud** applications, **Blender**, **Altium Designer** and **KiCad**.