Joshua Walker

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MEng Computing student in my **penultimate year** at Imperial College London looking for a **6-month placement** from April - September. I have an interest in **games and software development**, explored through game jams and university projects which helped me build foundational teamworking skills and further my interest in design and implementation.

Education

Imperial College London   *(2022 - current)*

MEng Computing course, currently in 3rd year. Achieved **first class honours** in 2nd year

Shrewsbury Sixth-Form College   *(2020 - 2022)*

A Levels: Computer Science - *A**, Physics - *A**, Maths - *A**, Further Maths - *A*

Work Experience and Volunteering

IC Hack   *(2023, 2024)*

Europe's largest student-run hackathon, hosted on South Kensington Campus

- Volunteered to help secure the premises and cater for the hundreds of participants and industry representatives
- Participated to learn more about different sectors of the industry through the workshops, while experiencing the challenge of the hackathon.

In-Comm (formerly Marches Centre of Manufacturing Technology)   *(2019)*

Completed a week's work experience among a group of automotive apprentices, studying engines in a practical environment to better understand how software engineering techniques can be applied to different engineering disciplines.

Projects

Lettuce Eat (Group Project) - *Flutter, Firebase, Dart*   *(2024)*

Studied **Human-Centered Design techniques** with the Royal College of Art in order to build a student recipe-based social media Android app. Applied paired-programming and iterative techniques to build the frontend, whilst learning about the difficulties of fullstack development from teammates who worked on the backend.

WACC Compiler (Group Project) - *Rust*   *(2024)*

Built an optimising compiler from scratch in **Rust**, using the CLAP, Chumsky and Ariadne crates to provide a command-line interface and clear error reporting. Designed using internal intermediate representation to allow for code generation into both **Arm32** and **Intel x86-64** assembly code.

Sorts TUI - *Rust*   *(2024)*

Developed an in-terminal utility for visualising sorting algorithms - built entirely in Rust using the Ratatui and CLAP crates.

Pintos (Group Project) - *C*   *(2023)*

Extended a simple **operating system framework** into a complex and developed system with features such as a priority-based thread scheduler, synchronisation primitives, system calls and virtual memory. Explored foundational concepts of OS architectures and delved into the pre-existing codebase to understand their practical implementations. Managed workload between group members and wrote detailed design reports.

Weather Wallpaper - *Rust*   *(2022 - 2024)*

Built a **command-line wallpaper engine** that dynamically changes the user's desktop wallpaper to reflect the local weather. Learnt how to access online API data and used the Dialoguer crate to provide a clean terminal menu interface for selecting weather tags for user-provided wallpaper images.

Origame - *Unity, C#*   *(2022 - 2024)*

Designed and developed a **2D puzzle platformer game** for A-Level coursework - attained an **A/A*** grade and has been expanded upon after submission. Learnt problem-solving and bug-fixing techniques during the design of the complex central mechanic: 'folding' paper platforms in order to progress, providing the illusion using vector mathematics and sprite redrawing. Practiced **level and puzzle design**, and learnt how to limit a design appetite to maintain a cohesive vision. Completed a comprehensive design document explaining game's inspirations and design methodology.

Painball - *Unity, C#*   *(2021)*

Pinball game developed in **7 days** for the 2021 Ludwig Jam. The theme of the jam was Foddian: a game which emulates the frustration of popular Bennett Foddy games. I learnt the importance of **user testing and feedback** - by watching people play, I could calibrate the difficulty to ensure the game remained fun whilst adhering to the design brief.

Skills and Interests

Languages and Technologies: C, C++, C#, Rust, Java, Kotlin, Haskell, React, JS, HTML, CSS, Git, Unity, Latex
Archery: former member of Audco Archers, an archery club based at Archery GB's training facilities; training with Olympic and Paralympic archers was hugely inspiring.
Guitar: self-taught guitarist; I learnt acoustic guitar to keep busy during the Covid-19 lockdown and have kept playing since.