Faisal Mujawar

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Education

Royal Holloway, University of London Expected: June 2026

B.Sc. in Computer Science

- Achieved First Class in first-year results.

Projects

Codedex Hackathon: Data Bolt June 2024

- Developed a tool with **75% accuracy** in predicting Olympic trends using **pandas(data manipulation), matplotlib (for graphing), and scikit-learn (for prediction via linear regression)**.
- Utilised Kaggle(Olympics 1896-2016) and **BeautifulSoup4** (for scraping missing years), automated this process using **Pyautoinput**
- Made in under 12 hours for Codédex Hackathon.

Coreboot/Libreboot: Thinkpad X201 September 2024

- Utilised **CH341A programmer + SOIC8 clip** to flash the EPROM with custom settings and replaced the bios from stock to Coreboot for performance and security benefits, had to manually configure the Coreboot+SeaBIOS to be optimised for the tablet version of this thinkpad.
- Diagnosed and recovered **bricked firmware** by analyzing system registers and comparing them to previous images.

RISC-V Emulator: RISVEmu October 2024

- Developed a **RISC-V emulator** in **C++** from scratch, emulating the functionality of the **RV32I** instruction set.
- Utilised syscalls to enable user I/O, allowing a simple text-based "choose-your-own-adventure" game. assembled in **RV32I**, to run on the emulator.

University Management System: ImaginaryUni December 2024

- Designed and implemented a university management system using **Spring Boot** for the backend and **react+tailwind** for the frontend.
- Integrated features like student data management, course enrollment, and staff administration, and observers to update student/staff when changes corresponding to them occur.
- UML-based designs to ensure a maintainable and efficient codebase.

[ONGOING] NES Emulator: NEmuS January 2025

- Developing a Nintendo Entertainment System (Ricoh 2A03) emulator in **C++**, accurately emulating the NES hardware architecture.
- Implementing memory-mapped I/O (MMIO), memory mapping, and interrupt handling.
- Modular system architecture for PPU (Picture Processing Unit) and APU (Audio Processing Unit) emulation to be more smoothly implemented.
- Gained in-depth knowledge of hardware emulation, especially different addressing-modes, and MMIO which will be helpful for emulating the PS1 (next project).

Skills & Interests

Technical Skills: Python (Bs4, Pandas, Matplotlib, scikit-learn), MySQL/Postgres, C/C++, Java(Springboot, JUnit, Mockito)

Extracurricular Activities:

- Hackathons: Royal Hackaway v7, Codedex 2024, Headstarter Hackathon, etc.
- Lead volunteer at Saint John's Church community fridge

Experience

Headstarter Software Fellowship July - September 2024

Software Fellow

- Collaborated in a program focused on solving real-world software challenges, improving teamwork and technical skills through tools like **Trello** and **GitHub**.
- Gained hands-on experience with **NextJS**, **MaterialUI**, and **Firebase**, contributing to the development of **6 projects**.

Maths Mentor, CeDAS October 2024 - Present

Royal Holloway, University of London

- Assisted 1st-year Computer Science students with mathematics and machine fundamentals during weekly drop-in sessions, improving their understanding of key concepts.
- Developed tutoring skills by breaking down complex mathematical problems into manageable steps.
- Provided support to students from diverse academic backgrounds, helping them boost confidence and performance.