

MUHAMMAD HANNAN JAVED

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Education

The University of Hong Kong

September 2022 – May 2026

Bachelor Of Engineering – Computer Science

Hong Kong

- **Honors:** HKU Belt and Road Scholarship - 100% Tuition Fee
- **Relevant Coursework:** Data Structures & Algorithms, Data Science, Software Engineering, Database Management Systems, App Development, Cybersecurity, Graphics and Animation, Operating Systems, Networks

The University of Western Australia

February 2025 – June 2025

Exchange Semester – Computer Science

Perth, Australia

Experience

Institute for the Humanities and Social Sciences – The University of Hong Kong

March 2024 – May 2025

Research Assistant

Hong Kong

- Constructed a statistical group allocation algorithm based on MCADSS model that assigns students into groups by maximising in-group diversity based on traits e.g., gender, while minimizing violations e.g., age bias in group.
- Able to place **10000** students under **60 seconds** with **30%** less constraint violations compared to manual grouping.
- Designed a database system and automated CGPA calculation for students, reducing processing time by **95%**.
- Resolved **100+** inconsistencies and design discrepancies during the migration of the IHSS department website.

Farmio HK Limited

August 2024

Software Engineer

Remote

- Implemented a customer assistant AI chatbot using Vercel AI SDK, Nextjs with app router, and Langchain with Retrieval-Augmented Generation (RAG) for enhanced response relevance and increased privacy.
- Boosted query accuracy by **40%** by integrating chat history for context-aware responses.

Datality Labs Limited

June 2024 – July 2024

Computer Scientist

Hong Kong

- Developed a real-time monitoring dashboard for **800+** communication skills assessment videos, fetching status and metadata from a backend API, with pagination, customizable filters and configurable settings.
- Built a full-stack autism survey platform with React and Node.js, streamlining data collection and analysis for **1000+** survey responses, resulting in a **40%** reduction in analysis time.

Projects

MTR Transit Link | Python

March 2025

- Created an app that minimizes transit time by **1-2 minutes** for **1,000,000+** daily MTR passengers using closest exit-cabin allocation, resulting in **500+ hours** saved **each day**.
- Mapped **98** stations, totaling **703** exits and **227** train lines with **98%** accuracy for the closest exit-cabin.
- Achieved **95%** accuracy with image pixel analysis and OCR text extraction using Google Vision API.

HKU Event Ease | Flutter

November 2024

- Developed a cross-platform mobile app using Microsoft Azure that aggregates HKU event information in real-time from emails, featuring calendar integration, event filtering, and automated backend data processing.

Class Schedule Planner HKU | Python

July 2024

- Created a console-based application to handle **25000+** courses' data and integrate with Google Calendar API to assist students in scheduling classes and managing clashes.
- Accomplished multithreading for loading animations, customization options course data integration, and caching which saved a total of **50+ hours** on loading times across users.

2048 Tile Game | C++

April 2023

- Collaborated in a team effort to develop a C++ version of the 2048 game.
- Designed a file handling system capable of processing over **1,000** save states per second.

Technical Skills

Languages: Python, C++, C, Java, Kotlin, Typescript, JavaScript, R, SQL

Frameworks: Next, React, Tailwind, Three, Flask, Flutter

Developer Tools: GitHub, VS Code, Postman, RStudio, MySQL Workbench, Eclipse

Cloud & DevOps: AWS (EC2), Docker, Linux shell, Bash scripting, Git, RESTful API