

MAIRAJ Muhammad

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PROFESSIONAL SUMMARY

Highly motivated Electrical Engineering student at PolyU with a focus on AI and Data Analysis. Possess hands-on experience in software development, and Electrical and Electronics Systems through internships and academic projects. Skilled in Electronics, Machine Learning, Data Analysis, Hardware Programming, Signal processing and web development with a proactive mindset and a passion for innovation.

EDUCATION

The Hong Kong Polytechnic University (PolyU)

Aug 2023 - May 2027 (Expected)

- Bachelor of Engineering (Honors) in Electrical Engineering

CGPA: 3.45

Relevant Coursework:

Electronics (A), AI and Data Analytics (B+), Python Programming (A-), Electrical Energy Systems (A-)

Overseas Learning:

- Mathematics and AI at Cambridge University**
Linear Algebra, Data Analysis, AI Algorithms, Python Programming
- Engineering Entrepreneurship at NU Singapore**
Engineering Entrepreneurship, Problem Solving, Communication, Pitching

Summer 2025

Summer 2025

WORK EXPERIENCE

Software and Design Intern at HYR

July 2025-Aug 2025

- Redesigned the UI/UX of a staffing solution app using **Figma**, improving shift-booking flows and reducing user complaints by 30%, while boosting worker sign-up conversion by 25%.
- Collaborated with developers to implement the new design in **Flutter**, fixing critical bugs and enhancing app stability, leading to a 40% improvement in reliability and smoother onboarding for businesses and workers.

Data Analyst Intern at Gryfyn

Mar 2025-Apr 2025

- Conducted rigorous testing and developed new features for Mootiez, a social media platform catering to K-pop and anime fans, while collecting user feedback from 500+ users to drive product improvements.
- Built a **Flask-based** analytics dashboard to aggregate multi-platform user data, providing actionable insights for the development team to prioritize enhancements and accelerated team decisions by 20%

Software Engineer Intern at Century Innovation Labs

July 2024-Aug 2024

- Developed a **React** web app with Chatbot for Chinese Literature education at Chinese University of Hong Kong, empowering more than 1500 students to improve their language proficiency and literary analysis.
- Engineered prompt-based chatbots to assist students with Chinese writing styles and grammar, and built **Flutter** app for scanning/uploading essays for analysis.

PROJECTS

PolyU GUR Course Reviews Platform

Personal Project

- Developed a full-stack web platform with **Flask, SQLite, and Bootstrap 5** enabling PolyU students to discover, review, and rate General University Requirement (GUR) courses, integrating **50+ courses across all GUR categories** with advanced filtering options.
- Implemented features such as **grade distribution analytics, teacher ratings, and personalized dashboards**, projected to streamline course selection for **500+ students annually** and reduce course-selection inquiries to seniors by **60%**.

Sound Level Analyzer for PolyU Library

Role: Data Analyst in a team of 4

- Coordinated data collection from sound sensors installed across library floors, utilizing **Python** to gather and store decibel readings in **Redis** for short-term storage
- Performed **data analysis** using Python to categorize sound levels into color-coded ranges (red for high, blue for low) based on predefined thresholds
- Developed a web-based visualization tool using **D3.js** and **Python backend (FastAPI)** to dynamically plot real-time decibel data on 2D library floor maps, enabling noise level monitoring

3-Phase Brushless Permanent Magnet Generator (PMG)

Role: Arduino Programmer in a team of 6

- Applied knowledge of physics and electromagnetism to design and construct a brushless PMG, including creating a stator with six coils of enameled copper wire and designing a rotor with properly aligned magnets to generate power efficiently
- Utilized Arduino and an **INA219 power meter sensor** to measure the generator's power output, displaying the data on an **LCD1602A display** for real-time monitoring and analysis

PolyU Industrial Centre Lighting Design

Engineering Drawing Module Project

- Developed a detailed lighting system layout in **AutoCAD** for PolyU's Industrial Centre, ensuring compliance with **illumination standards and safety codes**.
- Calculated **lighting loads and distribution** to enhance visibility and reduce power consumption by an estimated **15%**.

EV Car Park MEP Design

Engineering Drawing Module Project

- Designed a full MEP layout for an electric vehicle car park using **AutoCAD**, focusing on electrical distribution, ventilation, and safety systems.
- Applied building services principles to optimize **energy efficiency and load distribution**, preparing scalable design documentation for practical implementation.

SKILLS

Equipment: Signal Generator, Oscilloscope, DC Supply, Digital Multimeter, Soldering & Breadboard circuits

Electronics: BJTs, MOSFETs, Op-Amps, Frequency Analysis, Arduino, Raspberry Pi, INA219 Sensor

Programming: Python, C/C++, R, MATLAB, Version Control (Git), JavaScript

Software Tools: AutoCAD, SolidWorks, VS Code, PSpice, Simulink, Jupyter Notebook, Microsoft Office

Soft Skills: Problem Solving, Teamwork, Effective Communication, Attention to Detail, Leadership

Languages: English (Native), Chinese-Mandarin (Basic), Urdu (Native)

AWARDS & ACHIEVEMENTS

- Awarded with PolyU full ride Entry Scholarship for exceptional academic performance
- Earned Gold Medal and Government Scholarship for securing 94% marks in HSSC Examinations
- Received Duke of Edinburgh's International Bronze Award for 200+ hours of community service

EXTRA-CURRICULARS

- **Engineering and Entrepreneurship Society:** Arduino programmer for underwater robotics team
- **Technical Lead at Google Developers Group:** Taught coding to 60+ university students
- **Volunteer Services:** Served as an Internal Vice President of PolyU Hall Community Service Group