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-)

WORK EXPERIENCE

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

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

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