Rayyan Abhram

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Skills

Programming Languages: C, C++, Python, RUST, Java script
Libraries & Frameworks : Pandas, NumPy, Sci-kit learn, PyTorch, Zephyr RTOS, LVGL, QMK
Software: Altium designer, KiCad, Fusion 360, OnShape, Creo, Visual Studio, GitHub
Hardware & Tools: ESP32, NRF52, STM32 SoCs, SMD Reflow soldering, SWD/JTAG
Prototyping: FDM / SLA 3D printing, CNC machining, Silicone casting, Vacuum casting
IT: Microsoft office, LaTex, MATLAB

Education

Queen Mary University of London – 1st Class BEng Robotics Engineering — June 2025
Plovdiv Medical University – Diploma: Dental Medicine — May 2022
Norlington School & Sixth form –*A Levels*: Biology (A), Math (B), Chemistry (B) — June 2020

Experience

***Hardware Engineer Intern*, Fiddlie Technologies – London, UK** **May 2024 – Aug 2025**

- Engineered multilayer (Rigid & flex) PCBs in Altium designer for project specific applications, with readable documentation and BoM optimised boards cutting costs up to 15%.
- Evaluated the performance of hand assembled prototypes and validated hardware designs using oscilloscopes, power profilers and DMMs.
- Implemented real-time firmware in Zephyr/FreeRTOS with I2C, SPI, and UART support, enabling external device integration, LVGL compatible interfaces and low power consumption, achieving sub-10µA current consumption.
- Fabricated and assembled hardware using Fusion 360 and CircuitMind, outputting components through CNC machining and SLA/FDM 3D printing, producing functional enclosures in <24 hours for rapid iteration.

***Low Voltage Systems Engineer*, QMFS – London, UK** **Sept 2023 – Jun 2024**

- Senior member of QMFS electric vehicle department, directed the design of two distinct safety systems; placed 4th in a nationwide competition.
- Rear Lighting System: designed brake-light PCB using FET-switched LED array, translating driver braking status into clear visual signaling.
- Designed break system plausibility device using comparator based logic to detect and prevent simultaneous break and throttle engagement.

***Research Associate*, Multi-Modal human interaction Lab** **Oct 2023 – May 2024**

- Invented a novel EEG platform using soft-robotic actuators for adaptive electrode positioning using closed loop pneumatic control.
- Produced 20+ precision silicone actuators using Ecoflex 30 to achieve consistent and compliant pneumatic responses.
- Programmed a Python-based control system for sensor feedback, valve actuation, and real-time adaptation with minimal latency.

Founding Board Member, QMCUR **Oct 2023 – May 2024**

- Launched the Queen Mary Center for undergraduate research as a founding member, establishing a cross faculty platform for student led research.
- Organized and hosted campus wide events, working in multidisciplinary student teams to promote undergraduate research to higher academic bodies through both presenting and hosting.
- Created promotional materials and spearheaded outreach campaigns, boosting student engagement and participation in research events to 80+ students within a single academic year.
- Forged strong relationships with partner institutions to foster center growth and collaboration to expand research opportunities across disciplines.

Technical Projects

NB: For more projects see: www.rayyanabhram.com