Akash Raj

akashrajk1@gmail.com +44 7394413632 https://www.linkedin.com/in/-akashraj-

Portfolio website : https://akash-raj2003.github.io/portfolio/

PROFILE

I'm a 3rd year Electronics and Computer Systems Engineering student studying in Loughborough University. I love learning new skills and have a desire to apply my understanding of electronic circuits and computer languages to industrial projects and businesses.

EDUCATION

LOUGHBOROUGH UNIVERSITY **(2022 - 2026)**

Electronic and Computer Systems Engineering (Integrated Masters)

- Modules (year 1) : Electronic circuits, AC circuit analysis, Digital Systems, Programming and Software Engineering, Core Mathematics, Electrical Science, Industrial Group Project.
- Achieved a **first** in Year 1.

- Modules (year 2) : Embedded Systems Programming, Electronics, Computer Architecture, Communications, Robotics Project Design and Management, Advanced Mathematics 1, Advanced Mathematics 2.
- Achieved a **first** in Year 2.

- Modules (year 3) : Cybersecurity for embedded systems, Deployment of machine learning inference models, electronic system design with FPGAs, Embedded system design and implementation, engineering management: finance, law and quality, state space control.
- Achieved **2:1** in Year 3.

PARAMEKKAVU VIDYA MANDIR **(2016-2022)**

- **All India Senior School Certificate Examination (AISSCE)-** Achieved an average of **92.4%** (Physics-95%,Computer Science-94%,Mathematics-90%).
- **Grade 11-** Achieved an average of **94.2%** (Physics-98%,Mathematics-97%,Computer Science-97%).
- **All India Secondary School Examination (AISSE)-** Achieved an average of **91.8%**.

ACADEMIC PROJECTS

- Developed and built a prototype for a fleet vehicle system for campus transportation as part of the third year individual project using computer vision to detect traffic lights and lanes as well as a private server for multiple vehicles to communicate with one another.
- Developed a **line-following delivery bot** with **collision avoidance skills** as a six-person team.
- Our four-person team used **C** to program the microphones and ultrasonic sensor and **Python** to program the camera to **build a robot** that responds and moves in the direction of to musical cues.
- Programmed the **STM32F3** board to accept user input and do tasks accordingly.
- Utilised **Assembly programming** to devise a solution for the "trapping rainwater problem," demonstrating the capacity of a specific structure to retain units of water effectively.
- Made a program in **python** that **scraped the Play Store** to retrieve data (Such as app name, average stars, downloads, reviews, company name, email, etc) from hundreds of apps.
- **Collaborated** as a group of six to enhance the university building's lecture hall sensor systems.
- **Simulated** a virtual pizza delivery environment in **Python** using **object-oriented programming** to pick up, transport, deliver pizza, and charge delivery robots.
- Utilising JK flip-flops on **MultiSim**, I created a virtual seven-segment display of my student ID number.
- Created a coin-operated virtual coffee machine on **MultiSim** by encoding **Karnaugh Maps** for implementation.
- Utilised **Matlab's** signals transformation tools to replicate the behaviour of RLC circuits.

SKILLS

- Programming languages such as **Python**(Advanced), **C/C++**(Advanced), **SQL**(intermediate), **Assembly**(intermediate), **Linux**(Beginner), **VHDL**(Beginner), **Verilog**(Beginner) and **Rust**(Beginner).
- **CAD**, **HTML**, **CSS**, **LaTeX**, **MS Word**, **MS Excel** and **MS PowerPoint**.
- **Trilingual** (proficient in Hindi and Malayalam).

VOLUNTEERING/ WORK EXPERIENCE

Events officer | International Students Network **(Sept 2024 - Present)**

- **Planned and Organised** events and activities for international students in Loughborough university, fostering an inclusive and welcoming environment.
- **Created opportunities** for students to connect and build friendships through social, cultural and networking events.
- **Collaborated** with fellow team members to ensure events were executed smoothly.

Website and Automation Developer | Editors For a Better World (Non-Profit Organization) **(Dec 2024 - Present)**

- **Designed, developed, and maintained** a responsive and user-friendly website for a socially conscious non-profit organisation providing video editing and design resources.
- **Created a bot** that tracks the workflow and tasks for the organisation, increasing transparency and efficiency.

Research Intern | Loughborough University **(June 2024 - Sept 2024)**

- Worked as part of a multidisciplinary team conducting experiments and integrating hardware and software innovations.
- **Developed and Optimised Sensor Technology**: Contributed to the research and development of sensors for detecting frailty in the elderly, enhancing their efficiency and functionality.
- **Created a private network** for sensor operations, ensuring data privacy and reliability compared to its previous public network setup.
- Improved the user interface for the sensor system, making it more accessible and user-friendly.
- **Utilised MQTT servers** to enable efficient communication and data transfer between devices, showcasing Internet of Things (IoT) expertise.

Badminton Activator **(Sept 2023 - June 2024)**

- **Organised** and oversaw bi-weekly badminton sessions for 70 students, implementing meticulous organizational strategies.
- Cultivated a secure and inclusive environment, fostering social interactions among participants while facilitating their personal and competitive growth in the game.

Wolfson School Student Ambassador **(Nov 2023 - June 2024)**

- **Guided** groups of up to 15 people on university tours on open days, showing them to the campus buildings and facilities.
- Engaged with prospective students and their parents during university open days.
- **Shared insights** about university life while addressing inquiries.

AWARDS AND CERTIFICATIONS

Encode Club AI Hackathon **(Mar 2024)**

- Achieved **second place** in one of the categories in the 2024 Encode Club AI Hackathon, a competition held in Canary Wharf.
- Category was set by Cambridge University AI Ethics Society for proficiency in identifying algorithmic biases within a Harry Potter-inspired annual income prediction dataset.
- Displayed proficiency in both AI modeling and ethical awareness, as evidenced by successful participation in the competition.

Udemy Course **(Jan 2024 - Mar 2024)**

- Completed a course on ”Python programming for **Machine Learning** and **Data Analytics**” .
- Learnt about Python basics for Machine Learning, Artificial neural networks, Naive Bayers Classifiers, Linear and Logistic regression, and introduction to K-Means clustering.

INTERESTS

- I enjoy **social sports** because it allows me to meet new people and form friendships.
- Part of the Loughborough University’s badminton league.
- Playing the piano.
- Exploring diverse cultures through travel.

References available upon request