

# Abayomi Omotosho-Ikuru

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## EDUCATION

### Loughborough University

*Master of Science, Artificial Intelligence*

Loughborough, UK

Oct. 2021 – Oct. 2022

### University of Sheffield

*Bachelor of Engineering, Electronic Engineering with a Year in Industry. Class 2:1*

Sheffield, UK

Sep. 2017 – Jun. 2021

## EXPERIENCE

### SpaceDART Avionics Engineer

*Project SunrIde, University of Sheffield*

July 2021 – Present

Sheffield, UK

- Developed and implemented the Ground Station Telemetry system with Grafana and InfluxDB.
- Developed data ingestion tools for the telemetry system using Python, REST API and WebSockets.
- Deployed the system to be used remotely by SunrIde team members over the internet using Docker and Nginx.
- Contributed to the embedded avionics systems software on SunrIde rockets using C++ via Git.

### Electrical Design Engineer

*VolkerRail Ltd - Placement Year*

June 2019 – June 2020

Doncaster, UK

- Designed and developed electrical design schematics and simulations in a team for use on the railway.
- Managed the entirety of a design job; understanding the scope, rectifying issues in electrical simulations, improving design workflow with efficient organisation of project files and effective communication with parties involved.

### Electric Powertrain Systems Engineer

*Sheffield Formula Racing (IMechE Formula Student), University of Sheffield*

May 2017 – June 2021

Sheffield, UK

- Designed and developed the foundation of an electric formula student car in a team as part of a new initiative.
- Conceptualised communication and data logging systems using microcontrollers and CAN.
- Improved technical knowledge of embedded systems software in tandem with electronic and mechanical designs.
- Developed communication and teamwork skills in the inter-disciplinary team of 60 members.

### Web Development Intern

*CBC EMEA*

Aug. 2016

Lagos, Nigeria

- Expanded my knowledge on creating websites using HTML, CSS and JavaScript in an agile environment.

## VOLUNTARY EXPERIENCE

### Cybersecurity Society Technical Lead

*Student's Union, Loughborough University*

Feb. 2022 – Present

Loughborough, UK

- Delivered engaging presentations on cybersecurity topics and curated fun challenges for society members.
- Planned and organised society events in a team that encouraged member participation.

### Photography Society Publicity Officer

*Student's Union, University of Sheffield*

May 2019 – June 2021

Sheffield, UK

- Improved member engagement through an effective use of social media platforms.
- Developed illustration and animation design skills for publicity material to promote society events.

## PROJECTS

### AI Robot Arm - MSc. Project | Python, Unity

Apr. 2022 – Aug. 2022

- Researching and developing an artificially intelligent 6 DoF robot arm based on Niryo One using reinforcement learning.

### Simple Suspender Safari Extension | JavaScript, HTML/CSS

Mar. 2022 – Apr. 2022

- Solved the issue of high memory usage with many open Safari browser tabs by developing a web extension to suspend tabs manually or after a set period of time.
- Open sourced the extension on GitHub.

### Smart Room | C/C++, Linux Containers (LXC)

Feb. 2022 – Mar. 2022

- Designed and developed Internet-of-Things (IoT) devices using microcontrollers, CAD software and 3D printing.
- Deployed an instance of Home Assistant using LXC to orchestrate and facilitate the use of the IoT devices with voice assistants.

**AI Robot Car - Postgraduate Project** | *Python, Jupyter Notebook, TensorFlow, ROS* Nov. 2021

- Developed software in a team of 5 for a robot car to follow a Human using an Intel RealSense RGB-D camera.
- Utilised Mobilenet V2, a pre-trained convolutional neural network model to detect people and avoid obstacles.
- Implemented human-like behaviours for the robot to perform based on pre-determined conditions.

**Cryptocurrency Trading Bot** | *Python, Node.js, SQLite, REST API, Git* May 2021 – Aug. 2021

- Developed a terminal application to speed up the process of trading cryptocurrency pairs using the REST APIs of two prominent cryptocurrency exchanges.
- Implemented a database for logging trades using SQLite.
- Managed and responded to issues on the GitHub issue tracker for the project which has 50+ stars.
- Re-architected the project from a simple python script to an object-oriented Node.js application, allowing for extensibility and separation of concerns.

**Invisible Image Watermarking - Undergraduate Project** | *Python, OpenCV, Next.js* Sep. 2020 – May 2021

- Developed an algorithm using Python, NumPy and OpenCV to embed a watermark in the frequency domain of image that is robust to the process of dithering in physical prints.
- Deployed a full-stack web application with Flask serving as a REST API, Next.js for the frontend and Redis as a task queue to allow for testing of the watermarking algorithm online.

**HomeLab - Server and Networking** | *Linux, KVM, Kubernetes, Docker, Nginx, VPN* Mar. 2020 – Present

- Built and setup homelab infrastructure for virtualisation, experimentation and deploying personal services online.
- Implemented VLANs and a Site-to-Site VPN using WireGuard to connect a Virtual Private Server (VPS) network to my home network.
- Deployed multiple web applications hosted locally using Nginx as a reverse proxy.
- Managed self-hosted applications using a virtualised 3-node Kubernetes cluster and Docker running in LXC's.
- Implemented PCIe GPU pass-through from a KVM Hypervisor Host to a Guest VM using IOMMU.

**Video2Live - iOS App** | *Swift, SwiftUI, Google Admob* Nov. 2019 – Sep. 2020

- Developed an iOS app to convert video files to Apple's Live Photo format using Swift, for use as a Live Wallpaper.
- Published app to the Apple AppStore gaining 38K+ downloads, an average 4-star review and double-digit revenue from in-app purchases and ads.

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## TECHNICAL SKILLS

**Languages:** Rust, Python, C/C++, Arduino, Swift, JavaScript, HTML/CSS, SQL

**Frameworks:** React, Node.js, Flask, Flutter

**Developer Tools:** Git, Docker, Kubernetes, Linux, AWS, Ansible, Terraform, VS Code, Xcode, VIM

**Libraries:** NumPy, pandas, Matplotlib, TensorFlow

**Other:** Photoshop, Blender