

# Omar Ibrahim

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## Education

**Imperial College London, MEng in Design Engineering** Sept 2023 – Jul 2027

- On track for a First Class Honors
- **Relevant Coursework:** Engineering Mathematics, Finite Element Analysis, Human Centered Design, Industrial & Sustainable Design Engineering, Thermofluids, Mechatronics, and Signals, Systems, and Control

## Experience

**Intern Product Design Consultant, Javelo Health – Remote** Aug - Oct 2025

- Designed and developed cable management systems taking existing company technologies to new markets
- Produced a **go-to-market strategy** and iterative CAD prototypes informed by **empirical data** and stakeholder feedback
- Applied **design-to-cost** techniques that **reduced production cost by 75%** without sacrificing quality
- Produced **photorealistic renders** using Keyshot for investor and marketing presentations

**Research Assistant, HEAD Lab, Imperial College London, UROP – London, UK** Jun - Nov 2025

- Currently developing a **sports agnostic machine learning model** to predict point specific brain strain from head acceleration data taken from instrumented mouthguards
- Created, using Python, a pipeline to transform NIfTI files to GLB files to **visualise large brain datasets as coloured point clouds**, optimised for web and mobile applications, **in less than 3s** start to finish
- Heavily contributed to the **UI/UX design** on mobile app prototypes and wrote engaging copy, gathering feedback and optimising for user retention, education, and understanding

## Projects

**Portfolio Website** Feb - Oct 2025

- Designed, developed, and deployed a responsive portfolio website (v3) using **Figma, HTML, CSS, and JavaScript**
- Currently working on version 4 programmed using **NextJS and Tailwind CSS** and including elements of animations and user **interaction using GSAP**
- **Tools Used:** Figma, NextJS, Tailwind CSS, GSAP, HTML, CSS, JavaScript

**Muscle Controlled Camera App** May - Jun 2025

- Developed, using **Kotlin and C++**, a muscle contraction triggered camera app using an EMG sensor and sent via Bluetooth on an ESP32, integrating **real-time signal processing techniques** for reliable activation
- Worked with a team of 4 to integrate the app and help **design a prosthetic and removable gimbal attachment** for below elbow amputees
- **Tools Used:** Android studio, Kotlin, C++, Arduino

**Finite Element Analysis of Condyle Temporomandibular Implant** Apr 2025

- Designed, modeled and simulated the performance of the condyle portion of a temporomandibular implant and compared it to a benchmark model to test stress and frequency performance
- Achieved a **12% weight reduction**, a **49% average reduction in max stress** and **20% higher fundamental frequency values** compared to the benchmark model
- **Tools Used:** Fusion 360, ANSYS

**Industrial Design of a Sustainable Aircraft Seat** Oct - Dec 2024

- Lead a team of 4 for the design of a sustainable alternative to current economy class seats in short haul flights
- Achieved an MCI score of **0.89** and an end of life potential energy of **1520 MJ, 5 times the industry standard**

- Evaluated sustainability data for the design by conducting multiple **Eco Audits** for different design iterations
- **Tools Used:** ANSYS CES Edupack, Fusion 360, Keyshot

#### Aerodynamically optimised Supercar Body

Feb - Mar 2025

- Designed and CFD-tested the **aerodynamically optimised body of a supercar** featuring specialty designed diffusers, vents, and rear wing geometry
- Achieved a drag and lift coefficient of **0.26 and -1.14** respectively in CFD testing and verified, using **wind tunnel data** from a 3D printed model, seeing a **<0.1%** drag and **29%** lift deviation from predictions
- **Tools Used:** Fusion 360, ANSYS

#### Mirroring Robot Arm

Nov - Dec 2024

- Designed and built, along with a partner, a **3 axis** model prosthetic limb able to mirror human motion using the computer vision library **OpenCV and serial communication** to an Arduino and Servos that also included touch based interactions
- Iterated and tested new versions
- **Tools Used:** Fusion 360, Arduino & Arduino IDE, Python, Circuit Design, Component Selection

### Supplementary Experience

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#### STEM Tutor, STEM Muslims, Imperial College London – London

Oct 2025 - Present

- Taught STEM topics and software through seminar style presentations, building on **previous professional experience teaching computer science and STEM to children**
- Lead a team of 3 in delivering an interactive tutorial session that taught Figma to students from scratch

#### UI / UX Designer & Content Creator, SusatinaPod – Hybrid (London, Remote)

Aug 2024 - Mar 2025

- Worked part time, alongside my studies, for a sustainability startup aimed at educating young people on sustainability and connecting them with industry professionals
- Contributed to the **design of multiple web pages** that released in late 2024 identifying user interests and catering to them to **improve engagement**
- Designed and deployed thumbnails for multiple videos and **boosted viewership by 50%** on average while also helping plan and execute new videos

#### Project Leader, Uber Hackathon – Remote

Feb - Jun 2022

- Lead a team of 3 in the creation of the **UI / UX for a trading and finance app** designed to both allow users to trade stocks and educate them on how to do so safely and responsibly
- Created **detailed reports and animated videos** as part of the deliverables, becoming **nationally ranked**

### Technical Skills

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**Programming Languages:** Python, C, C++, HTML, CSS, JavaScript

**Technologies:** Microsoft Office suite, Git, Figma, Fusion 360, SolidWorks, ANSYS, Adobe Photoshop, Adobe Illustrator, Adobe Premier Pro, MATLAB

**Languages:** English (fluent), Arabic (fluent)

**References available on request**