

# Mahmood El-Mahalawy

+44 7423393690 ✉ melmahalawy1@outlook.com 🌐 www.linkedin.com/in/melmahalawy 📄 github.com/mxhmoodem

## EDUCATION

---

University of Birmingham (MEng Mechanical Engineering)

Sep 2021 - Present

- First Class Degree (75%)

## WORK EXPERIENCE

---

Software Engineer | HSBC

Jul 2025 - Present

- Developed **full-stack** features using **React** (frontend) and **C#/.NET** (backend), contributing to enterprise-level applications with a focus on **performance** and **scalability**.
- Built and integrated custom components within the Sitecore CMS, improving content management efficiency and enabling more dynamic, reusable web interfaces.
- Collaborated within an **agile** team environment, participating in code reviews, sprint planning, daily meetings and cross-functional discussions to deliver high-quality, production-ready features.

Software Engineer Intern (Japan) | NFF

Jun 2025 - Jul 2025

- Redesigned the artist portal front-end using **React** and **Figma**, improving discoverability, filtering functionality and mobile responsiveness, contributing to a **35% increase** in session duration and **28% reduction** in bounce rate.
- Developed a custom artist support ticketing platform with a **React** frontend and **Node.js** backend, integrating Discord **APIs** and **AI-driven** analytics to identify common user issues and improve support efficiency.
- Customised an open-source project management tool to better support creative teams, adding media version tracking, translation and visual timelines.

Software Engineer Intern | FINBOURNE Technology

July 2024 - Sep 2024

- Developed and maintained **customer-facing web applications** using **Angular** as part of a large-scale software project, enhancing user experience and overall performance, demonstrating **flexibility** and a **quick learning** ability.
- Collaborated with backend teams to integrate **RESTful APIs** to ensure seamless communication between front-end and back-end systems, contributing to the functionality and efficiency of the application.
- Implemented comprehensive **unit tests** and **end-to-end tests** to validate software functionality, while adopting best practices in **agile** development, **version control (Git)** and **code reviews**.

Data Analyst Intern | University of Nottingham

Jun 2023 - Aug 2023

- Utilised **Python** and **MATLAB** for **data modelling, simulations and visualisations**, conducting a techno-economic analysis of zero and low-carbon fuels for next-generation internal combustion engines.
- Developed **data-driven models** to assess the performance and cost-efficiency of alternative fuels, implementing statistical analysis and optimisation algorithms in **Python** to extract meaningful conclusions.
- Gained hands-on experience with internal combustion engine testing in a research environment, applying **advanced data collection techniques** and **analysing experimental results** using **MATLAB**.

## SOFTWARE PROJECTS

---

Portfolio Website: [developedbymahmood.co.uk](https://developedbymahmood.co.uk) (for additional information and projects)

### AI Driven Ticketing System

- Developed a **full-stack AI-powered** ticketing platform (**Node.js, MongoDB, JavaScript**) with **real-time syncing** between Discord and a web dashboard for **scalable** support management.
- Implemented **AI-driven** ticket analysis and summarisation to extract user insights and optimise support workflows, supported by **REST APIs** and real-time data visualisation.

### Centralised Market Trends and Payments Data FinTech System

- Built a full-stack **AI** platform (**FastAPI, React, PostgreSQL**) featuring a **LangChain RAG** agent with semantic search over regulatory and market datasets using **ChromaDB**.
- Implemented real-time analytics, automated data ingestion pipelines and cloud-based file management (**AWS S3**), supporting scalable data processing and interactive visualisation dashboards.

## SKILLS

---

**Languages:** Python, JavaScript, Typescript, C#, MATLAB, SQL, HTML/CSS

**Libraries/Frameworks:** React, Angular, Node.js, Next.js, Express.js, .NET

**Developer Tools:** Git, Swagger, Jira, Visual Studio Code, Visual Studio, Sitecore