

Iman Hussain

Phone: +31 06 87 61 89 41

Email: contact@imanhussain.com

GitHub: www.github.com/iman-hussain

Location: Utrecht, NL (Full Right to Work)

Website: www.imanhussain.com

LinkedIn: www.linkedin.com/in/iman-hussain



Senior Data and AI Engineer with 6+ years building and shipping production ML platforms, data infrastructure and GenAI applications. Hands-on engineer and developer across the data and AI/ML stack — from pipelines and model systems to deployed agentic applications in regulated defence/fintech, public-sector sustainability and EdTech.

Skills

- **Programming Languages:** Python (FastAPI, NumPy, Pandas, PyTorch), SQL, JavaScript (React, Svelte, Node.js), GoLang, Rust, R.
- **AI & ML:** Agentic RAG, LLM Ops, LLM Fine Tuning (PEFT/LORA), Generative AI, Vector DBs, Deep Learning, TensorFlow, Transformers.
- **Data Science & Engineering:** dbt, Snowflake, ETL Pipelines, Apache Airflow, Apache Spark, Databricks, Predictive Modelling, A/B Testing.
- **DevOps:** AWS, Azure, CI/CD, Docker, Terraform, Linux, Kubernetes, Git.

Professional Experience

Senior AI & Data Engineer | *Cranfield-MK:U* | England | *July 2023 – July 2025*

- As Senior AI & Data Engineer embedded with **BAE Systems, Santander, Microsoft** and **HM Government** through Cranfield-MK:U, designed and built applied AI/GenAI systems in regulated **defence** and **fintech** environments, working with **100+** client staff on production delivery.
- Delivered agentic RAG and applied AI projects to production with those companies and their management; **four** systems reached production within six months of first client project kickoff (including Santander and BAE proof-of-concept work below).
- Co-developed a proof-of-concept agentic auditing system for **Santander** as part of a delivery team; progressed to production use on **Azure** with **FastAPI, vector DBs, PEFT/LoRA** and LLM evaluation workflows, automating **85%** of manual audit sampling and cutting review cycle time by **60%** for **fintech** compliance teams, with PEFT/LoRA cutting inference costs by **40%** vs base-model serving.
- Co-developed a proof-of-concept **computer vision** pipeline for **BAE Systems** as part of a delivery team; progressed to industry use with **PyTorch, OpenCV** and **Docker/Kubernetes**, identifying vehicles and extracting telemetry from visual data streams at **94%** detection accuracy, processing **500+** hours of footage per month in regulated **defence** environments.

Data & ML Engineer | *Centre for Global Eco-Innovation* | England | *January 2021 – June 2023*

- As Data & ML Engineer at the Centre for Global Eco-Innovation (EU-funded sustainability and innovation programme for public-sector clients), built a **LSTM/TensorFlow** forecasting model that reduced HVAC energy consumption by **17%** across 12 UK schools (modelled from sensor baselines), **saving £34,000 per year** and improving measured air quality outcomes by **22%**.
- Architected an IoT data pipeline on **Docker/Linux** ingesting **2M+ real-time sensor data points** in **Python (NumPy, scikit-learn, Pandas)** and TensorFlow, feeding ML models and operational dashboards for council building-management teams.
- Shipped **Plotly/Dash** dashboards and a **LangChain RAG** chatbot delivering real-time HVAC recommendations to **20+ teachers and council members** across the same 12-school deployment.

Machine Learning Engineer (Industry Placement) | *Capgemini* | Netherlands | *January 2020 – January 2021*

- As ML Engineer at Capgemini, built a **TensorFlow/OpenCV** computer vision pipeline achieving **92%** document field extraction precision, processing **10,000 documents per month** in production, integrated into Microsoft Teams and Outlook.
- Designed a serverless ingestion layer with **AWS Textract/Lambda/S3** for unstructured handwritten forms, reducing manual data entry by **80%** across client document workflows.
- Pitched the solution to senior executives and placed **Top 3 of 40 teams** in Capgemini's TechChallenge; the computer vision tool was adopted across Capgemini Netherlands.

Data Engineer | *Explore Learning* | England | *November 2017 – March 2020*

- As Data Engineer at Explore Learning (EdTech company using **predictive ML** to personalise online maths and English tuition), rebuilt the **dbt/Snowflake** ETL layer to cut transformation latency on the virtual learning platform, supporting **40,000 concurrent users** at peak load.
- Implemented **GitHub Actions/Docker CI/CD** with automated QA via PyTest and Selenium, **tripling release frequency** and cutting regression bugs by **45%**.
- Built a collaborative-filtering recommendation engine on user behaviour data, driving **25%** revenue growth in the 11+ tutoring segment via production A/B testing.

Personal Projects

NethAddress | November 2025 – January 2026

AI-driven property appraisal platform aggregating 35+ REST APIs to score land value, ESG adherence, and ROI.

- Built an **XGBoost** regression model in **Python** predicting land value trends at **89%** accuracy; onboarded **10 beta users** in month one.
- Developed **Golang** microservices with **Redis** caching and **Terraform on AWS**, handling **2,000** API requests/day with **<100ms** latency.
- Implemented automated **CI/CD** and infrastructure-as-code for zero-downtime deployments on AWS.

ApplicAI | July 2025 – September 2025

GenAI job application assistant with dynamic templating, ATS tracking, and RAG-powered document generation.

- Shipped to **50 DAU** with **5** paying users in month one using a **FastAPI** backend, **LlamaIndex** for RAG retrieval, and Beautiful Soup for job data ingestion.
- Built LLM inference routing between **Groq** and **Gemini** to optimise cost and latency, saving **60%** on LLM API spend.
- Implemented user analytics with **ClickHouse** and **Metabase**, tracking engagement metrics to catch retrieval regressions.

Education

Lancaster University | *PhD Computer Science* | January 2021 – September 2025 (Part-time alongside employment)

- Dissertation: "Utilising Machine Learning and IoT Sensors to Create Healthier and More Efficient Indoor Spaces."
- **Partners: National Air Quality Testing Services (NAQTS) and Centre for Global Eco-Innovation.**

University of Wolverhampton | *MSc Computer Science* | September 2019 – July 2020

- Dissertation: "Using AI and Machine Vision to Improve Accessibility in the Digital Workplace."
- **Partners: Capgemini. Grade: Distinction Star.**

University of Wolverhampton | *BSc Computer Science* | September 2016 – July 2019

- Dissertation: "Exploring Novel Uses of the Blockchain in the Context of Digital Twins and Smart Cities."
- **Partners: IBM. Grade: First Class Honours.**

Awards

- **IBM:** Call for Code 2020: World 2nd Place Finalist (Team LUPE).
- **Capgemini:** TechChallenge 2021: Top 3 Finalist (Team Visionaries).
- **Richardsons:** Entrepreneurship Bursary 2019: Winner.

Volunteering

- **SustainableICT** | Conference Chair (2021–Present): Directed strategy and day-to-day operations, **managed €20,000+** budget and **coordinated an international team** of organisers and speakers.
- **The National Museum of Computing** | Group Leader (2020–2022): Co-designed award-winning CS learning materials for neuro-divergent students, **recognised by Imperial College London.**
- **Hacking Society (HAC_SOC)** | Chairman (2016–2019): Launched ethical hacking society, grew to 30+ members, and raised over £1000 completing bug bounties for charity.

Speaking Engagements

- **Presenter:** **ACM SIGCHI '23 (Hamburg)** – peer-reviewed research on smart IoT sensors and data modelling for indoor air quality and energy use.
- **Keynote & Panellist:** United Nations COP26 (Glasgow) – emerging technologies in the green transition; panel on next-generation climate action.
- **Keynote Speaker:** TEDx Ctrl+Alt+Delete (Wolverhampton) – **Unlocking the Lockdown.**
- **Keynote Speaker:** Sustainable Places 2022 (Nice/Monaco) – demand-based HVAC and ML.

Selected Publications

- Hussain, I., Friday, A., & Booker, D. (2026). "**The COVID-19 legacy: Indoor air quality, thermal comfort and energy use in English classrooms.**" *Energy Research & Social Science*.
- Hussain, I., Friday, A., & Booker, D. (2023). "**The Indoor Air Quality Trilemma: Improving Air Quality, Using Less Energy, and Meeting Stakeholder Requirements.**" *CHI EA '23 (ACM)*.
- Hussain, I., et al. (2021). "**Ensuring Food Supply and Security During Localised Lockdowns.**" *IGI Global*.