

AI/ML Developer with over 5 years of industry experience and a postgraduate degree in Artificial Intelligence. My expertise includes machine learning, deep learning, generative AI, natural language generation (NLG), LangChain, RAG pipelines, and LLMs, as well as developing and deploying object detection models. I'm passionate about creating innovative solutions that solve real-world challenges and actively seeking opportunities to contribute to projects at the forefront of AI technology.

WORK EXPERIENCE

Gen AI Developer | Digital Technology Partner | July 2024 – Present

- Led the development of HEKA, an AI powered hospital discharge assistant integrating structural ML predictions and LLM based reasoning on clinical notes. Deployed two stage pipeline with XGBoost and GPT-4o to predict 30 day readmission risk and generate discharge readiness scores, reducing predicted readmissions.
- Designed and deployed a vector DB (Elasticsearch-based) for semantic search using sentence-transformer embeddings and metadata filtering, enabling real-time insights and scalable data retrieval.
- Increased efficiency by 30% in cost quotation processes by implementing object detection and automated information extraction from project documentation, utilising LLM and RAG pipelines to streamline data retrieval and reduce manual effort; achieved a 40% reduction in documentation turnaround time by streamlining processes in the project.
- Built a conversational AI agent integrating LLMs (GPT-4o) to classify and interpret user queries, dynamically adjust filters, and provide context-aware AI suggestions, improving user experiences and query precision. Deployed ML based model into production environments, ensuring scalability and responsiveness. Integrated monitoring pipelines for model performance using logging and equivalent metrics to proactively identify performance drift and trigger retraining.
- Streamlined ETL pipelines for data ingestion and embedding generation, ensuring seamless integration with operational datasets and reducing query resolution time by over 50%.
- Developed a Python-based pipeline to extract structured data from investigation reports, enabling downstream classification and reducing manual workload. Used generative AI techniques with LLMs to create synthetic training data from example scenarios, helping train models when real data was limited and speeding up early-stage development.
- Developed a multi-tenant quoting backend using MongoDB and Fast API, enabling automated extraction of geometric figures from CAD PDFs via an LLM-powered AI agent, which streamlined surface area calculations and quote generation—improving accuracy and reducing manual processing time by over 40%.

Software Engineer | Kairos Consulting | July 2019 – December 2022

- Contributed to an R&D project for a healthcare client focused on real-time image processing. Utilised OpenCV and Scikit-Image for noise reduction, contrast enhancement, and feature extraction.
- Performed feature engineering and selection techniques to optimise ML model accuracy and reduce dimensionality.
- Achieved a 15% improvement in anomaly detection accuracy by developing and integrating CNNs with TensorFlow and Keras. Optimised processing algorithms (FFT, PCA) using NumPy and SciPy.
- Increased sales by 23% by analysing sales data and implementing a Random Forest model to enhance customer demand forecasting.
- Utilised AWS EC2 for scalable hosting, deployed applications with Docker for consistent environments, managed AWS RDS for secure database operations, rendered S3 and CloudFront for efficient asset storage, and integrated CI/CD pipelines.

EDUCATION

• Master of Science in Artificial Intelligence

University of Aberdeen, United Kingdom

January 2023 - June 2024

• Bachelor of Technology in Electronics and Communications

Institute of Engineering and Management, Kolkata, India

August 2015 - July 2019

CERTIFICATIONS

1. [AWS Certified Cloud Practitioner](#) (AWS Training and Certification)
2. [Software Engineer](#) (HackerRank)
3. [Google Agile Project Management Certification](#) (Coursera)
4. [IBM Machine Learning with Python](#) (Coursera)

PROJECTS & HACKATHONS

Mistral AI Hack UK London 2024 [\(Devpost\)](#)

- Finalist at the Mistral AI London Hackathon, co-organized by Brave, Nebius, Cerebral Vally and AWS, built a medical AI chatbot using PIXTRAL-12B-2409 model, finetuned on NHS data with session-based context and RAG pipeline integration.

Encode London 2024 – Quant Track (RNDM) [\(GitHub\)](#)

- Winner in the Quant Track as part of team QUANT, developed a cryptocurrency trading strategy combining technical indicators like RSI and moving averages with sentiment analysis powered by LLMs and DeFi data, creating an agentic workflow for dynamic, data-driven portfolio management and enhanced trading insights.

Encode London 2024 Specialized NILLION AIVM Implementation [\(GitHub\)](#)

- Winner as Team House Your SKIN. Developed a privacy-centric skin disease classifier using encryption, zero-knowledge proofs (ZKP), multi-party computation (MPC), and IPFS for secure, tamper-proof storage. Addressed key healthcare privacy challenges.

Code The City – Community Safety Aberdeen 2024 [\(GitHub\)](#)

- Came out on top in the hackathon by proposing and demonstrating a solution to a major traffic-related problem identified by the city council. Utilized computer vision models to detect footfall after major city events, aiding in traffic management and planning.
- Developed a computed vision-based taxi stand using YOLO and Roboflow's supervision model to detect queue density and the exact number of people in line, with heatmaps for visualization and a 10-minute data trigger to redirect cab traffic efficiently to the most crowded areas.

LLM and LangChain Based ATS System` [\(GitHub\)](#)

- Created an automated recruiting system by vectorizing submitted resumes with LangChain and LLMs, saving the extracted information as JSON in a database.
- Shortlisted candidates based on job descriptions using LLM, focusing on the relevance of work experience, projects, and education rather than just keywords.

SKILLS

- **Programming Languages & Scripting:** Python, Java, C, JavaScript, HTML, CSS
- **Frameworks:** Fast API, Flask, React.js, LangChain, TensorFlow, PyTorch, Scikit-Learn
- **AI & ML Technologies:** Generative AI, Large Language Models (LLMs), RAG Pipelines, NLG, OpenCV, Sentence Transformers, CNNs
- **Database & Data Processing:** MongoDB, MySQL, Elasticsearch, Pinecone, OpenSearch, Microsoft Access, NumPy, Pandas, SciPy
- **Cloud & DevOps:** AWS (EC2, RDS, S3, CloudFront), Docker, GitHub Actions, CI/CD
- **Tools & Platforms:** Hugging Face, Roboflow, Git, Postman