

Naomi Nour

+44 (0) 7377 075530 | TS1 1LL, UK | NaomiNour.com

AI/ML Engineer

Naominour@gmail.com | LinkedIn: [Naomi Nour](#) | [GitHub](#)

Summary & Key Highlights

AI/ML Engineer with a Master's in Artificial Intelligence (**Distinction**) and **2 years** of experience in developing and deploying AI-driven solutions, specialising in **computer vision, deep learning, fine-tuning LLMs, multi-agent systems, RAG, LangChain, and machine learning model lifecycle**. Skilled in Python, PyTorch, TensorFlow, OpenCV, Yolo, and **MLOps** practices such as CI/CD, MLflow and containerisation to build scalable AI solutions.

- ❖ **Fine-tuned LLMs (GPT, LLaMA, DeepSeek)** for specialised tasks, improving domain-specific performance by ~10%.
- ❖ Developed a **multi-agent QA system** leveraging **LLMs (LLaMA, DeepSeek)**, the **RAG** method, and **Human-in-the-Loop (HITL)** integration to enhance clinical response accuracy and reliability.
- ❖ Designed a **Multimodal RAG-powered assistant** using FAISS, LangChain, and NLP for intelligent query responses.
- ❖ Developed & deployed an AI-powered solution integrating **YOLO object detection, predictive analytics**, and a **domain-specific chatbot** to automate image analysis, optimise decision-making processes, and deliver insightful analytics to improve operational efficiency in aquaculture.

Work Experience

Head of AI Development

Mar 2025 – Present

[TotalLab Ltd.](#) - Newcastle upon Tyne, UK

- Integrating **AI solutions** into TotalLab's **life sciences and healthcare software products**, including Phoretix Colony Counter, to **enhance data analysis accuracy** & regulatory compliance.

Machine Learning Engineer (Part-Time)

Dec 2023 – Feb 2025

[Digital Readiness and Intelligent Systems Ltd. \(D-Ready\)](#) - Stockton-On-Tees, UK

- Developed and deployed an **AI-powered chatbot platform**, leveraging **LLMs' API, Python, Transformers, Flask, REST APIs, and LangChain** to enhance decision-making capabilities.
- Implemented a **Machine Learning Model** for lung cancer detection, achieving **95% accuracy** through advanced **preprocessing, feature engineering, and model optimisation**, while addressing model bias for a research study.
- Designed and developed a computer vision pipeline (YOLO-based Object Detection + **Natural Language Processing**), pairing it with an **LLM API** to generate **actionable recommendations** and maintain **model transparency (Explainable AI)** for stakeholders.

AI Research Assistant (Project Basis)

Jun 2023 – Nov 2023 & April 2024- Jul 2024

[Teesside University](#) - Middlesbrough, UK

- Contributed to an **Innovate UK-funded** project with a cross-functional team to develop an AI Risk Management system leveraging **LLM APIs** and **prompt engineering**, ensuring compliance with **AI ethics** and **Responsible AI**, successfully engaging **20+ SMEs** for adoption.
- Designed an **adversarial learning system architecture** to combat **AI cyberattacks** on supply chains, showcasing problem-solving abilities and critical thinking in a research-driven manner.
- Co-authored an **IEEE-published paper**:
"An Explainable AI Tool for Operational Risks Evaluation of AI Systems for SMEs." [Link](#)

Founder & Technical Lead

Apr 2018 – Jan 2023

[Manolight](#) - (E-commerce, selling personalised gifts) Iran

- Launched and scaled an e-commerce business, achieving **50K+** social media followers through **strategic analysis, A/B Testing** and digital marketing.

Junior Software Developer

Nov 2015 – Mar 2018

[Tehran ICT Guild organisation](#) - Iran

- Streamlined event registration processes and enhanced digital solutions by developing websites using WordPress (JavaScript and PHP) and mobile apps, delivering improved user experiences.

Selected Open-Source Projects Published

Fine-Tuning Large Language Models for Specialised Applications [LLaMA GitHub](#) - [GPT GitHub](#)

- **Fine-tuned GPT** and **LLaMA** models for medical terminology, achieving 9.6% improved comprehension using **PyTorch** and **Transformers** through advanced **optimisation techniques**.
- Developed scalable fine-tuning workflows for **20,000+ medical data**, implementing **CI/CD** for automated integration and utilising **MLflow** and **HPC** environments to ensure reproducibility.

AI-Powered Multi-Agent QA System

[Link](#)

- Developed a **multi-agent medical QA system** leveraging **LLMs (LLaMA, DeepSeek)** and the **RAG method**, integrating **Human-in-the-Loop (HITL)**, **Clinical Reasoning**, and **Evidence Retrieval** to enhance response accuracy and reliability iteratively.

Text Summarisation

[Link](#)

- Developed and deployed a scalable text summarisation pipeline for **16,000+ data** samples on **Azure Cloud** using **FastAPI** and **Flask** for real-time processing, ensuring efficient data ingestion, validation, and transformations within robust **data pipelines**.
- Automated deployment workflows with **CI/CD (GitHub Actions)** and **Docker**, implementing **MLOps** best practices to ensure model consistency and traceability.

RAG-Powered Medical Assistant

[Link](#)

- Developed an intelligent QA system using **RAG, LLMs**, and **NLP**, integrating **Langchain**, **Vectore Store**, and **RESTful APIs** for context-aware medical document analysis and text generation.
- Integrated **image captioning and document retrieval** to enhance multimodal AI capabilities.

Image Segmentation with U-Net

[Link](#)

- Successfully implemented and trained a U-Net model for **image segmentation**, utilising **deep learning** and **computer vision** techniques to achieve high accuracy in object identification.

Face Recognition

[Link](#)

- Developed a **Convolutional Neural Network (CNN)** using **TensorFlow** and **Keras**, which accurately identified and verified individuals in various images.

Education

MSc Artificial Intelligence with Advanced Practice | Teesside University, UK | Jan 2023-Jan 2025

- **Grade: Distinction**
- **Final Project and the Paper Under Review: Fine-Tuning LLMs for Medical Application**

BEng Computer Engineering | BNUT University, Iran | Sep 2010-Sep 2014

- **Grade: Equivalent 2:1**
- **Final Project: Booking System Development for Hospitals Using HTML, CSS, JS and WordPress**

Certificates

Deep Learning Specialisation

Apr 2024 | *Deeplearning.AI*

Python Specialisation

Sep 2023 | *UMich | Coursera*

Azure AI-900

Aug 2024 | *Microsoft*

Skills and Tools

Machine Learning & AI:

- Generative AI (LLMs, Text Generation, Fine-Tuning GPT, LLaMA Models)
- NLP (Transformers, Large Language Models, Prompt Engineering)
- Deep Learning (CNN, RNN, LSTM, GRU, GANs)
- Computer Vision (Object Detection, Image Segmentation, etc.)

Programming & Frameworks: Python, SQL, Flask, REST APIs, PyTorch, TensorFlow, Scikit-learn

Model Deployment & MLOps: CI/CD (GitHub Actions), Model Versioning, Containerization (Docker), Model Tracking (MLflow), Cloud Deployment (Azure AI Studio, App Services, Blob Storage)

Data Visualisation & Analytics: Power BI, Matplotlib, Predictive Analytics, Data Cleaning

