

MUHAMMAD UMAR FAYYAZ

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PROFILE SUMMARY

AI Engineer with over a year of experience in machine learning, deep learning, and computer vision. Proven ability to build and deploy scalable solutions, including real-time vehicle detection for live video streams and high-concurrency multi-agent chatbots using local LLMs. Proficient in Python and the LangChain framework, dedicated to architecting robust, production-ready AI applications that solve complex problems.

EXPERIENCE

Junior AI/Data Engineer | Macromodule Technologies, LLC Jan 2026 – Present

- Deployed real-time multi-vehicle object detection for live RTSP video streams using deep learning.
- Architected a high-concurrency, multi-agent chatbot using local LLMs on GPU servers.

AI Engineer (Intern) | The Hexaa June 2025 – September 2025

- Built autonomous reasoning agents and stateful conversational agents with persistent memory.
- Engineered RAG pipelines to ensure factually grounded and accurate AI responses.

EDUCATION

M.Phil. Artificial Intelligence August 2025 – 2027(Expected)
Punjab University College of Information Technology, Lahore

BS Computer Science December 2021 – May 2025
University of Engineering & Technology, Lahore

PROJECTS

Real-Time Vehicle Object Detection

- Developed a computer vision and deep learning model to accurately detect and track multiple vehicles on live RTSP video streams.

Multi-Agent Chatbot

- Engineered and deployed a multi-agent chatbot using local LLMs on GPU servers to efficiently handle simultaneous user requests.

Heart Disease Prediction Model

- Developed a predictive machine learning model to assess heart disease risk, utilizing data balancing techniques and an interactive console for real-time predictions.

SKILLS

- **Generative AI & LLMs:** Multi-Agent Architectures, RAG, Vector Databases, Prompt Engineering
- **AI Frameworks & MLOps:** LangChain, LangGraph, LangSmith, Model Evaluation, MLflow / Weights & Biases (W&B)
- **Computer Vision & Deep Learning:** PyTorch / TensorFlow, OpenCV, YOLO / Advanced Object Detection Architectures, CUDA/cuDNN, RTSP Video Stream Processing
- **Machine Learning & Data Science:** Scikit-Learn, XGBoost, SMOTE, Predictive Modeling, Python, SQL, Pandas, NumPy
- **Backend, Deployment & Infrastructure:** FastAPI / Flask, Docker, Git/Version Control
- **Soft Skills:** Analytical and problem-solving abilities, effective communication and presentation skills, team collaboration and leadership experience, time management and multitasking

CERTIFICATIONS

- Foundation: Introduction to LangGraph (LangChain) **CERTIFICATE**
- AWS Educate Machine Learning Foundations (Amazon Web Services (AWS)) **CERTIFICATE**
- Supervised Machine Learning: Regression and Classification (Coursera) **CERTIFICATE**