

Muhammad Omer Nasir

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Experience

AI/ML Intern — UrduX, FAST-NUCES

Jun 2024 – Aug 2024

- Developed an LLM-powered legal chatbot using FastAPI and Pinecone, improving response accuracy by 40%.
- Designed and deployed APIs for chatbot interactions, reducing response latency by 30%.
- Implemented Retrieval-Augmented Generation (RAG) for context-aware responses.

Software Engineering Intern — LearnOBots

Jun 2024 – Sep 2024

- Built RESTful APIs using FastAPI, improving backend efficiency by 25%.
- Deployed applications on AWS EC2 instances.
- Integrated MongoDB for scalable data storage.

NLP Intern — AIM Lab, Islamabad

Jun 2023 – Aug 2023

- Developed an NLP-based proverb translation model using MarianMT and Transformers, increasing accuracy by 70%.
- Created a 2,000+ entry dataset for Urdu-to-English translations, improving model generalization.

Projects

Autonomous AI Agent for Workflow Automation

2025

- Developed a multi-agent system integrating OpenAI's GPT-4 and Semantic Kernel for workflow automation.
- Implemented context-aware decision-making agents, reducing manual task execution by 50%.
- Integrated APIs and databases, enabling real-time access to customer insights and operational data.

NLP-Powered Enterprise Search Engine

2022 - 2024

- Collaborated with UK Railways to develop a Knowledge Management System (KMS).
- Utilized BERT, Llama, Word2vec, FastAPI, and WordCloud for efficient document mapping and semantic search.
- Achieved 90% accuracy in semantic search, enhancing document retrieval efficiency.
- Deployed a custom API on AWS for high availability and scalability.

Real-Time Recurring Concept Drift Detection (Final year project)

2024 - Present

- Developing an AI pipeline for detecting and managing recurring concept drift in supply chain forecasting.
- Implementing an adaptive model retraining, improving prediction accuracy by 35%.
- Building a visual dashboard for drift monitoring using Grafana and Prometheus.

Intelligent Task Planner Using LLMs

2025

- Built a task-planning AI assistant capable of autonomous execution and delegation of tasks.
- Utilized LangChain and OpenAI APIs to develop an LLM-powered workflow orchestrator.
- Achieved 30% efficiency improvement in scheduling and resource allocation for internal teams.

Skills

Programming: Python, C, JavaScript (Node.js, React.js)

AI/ML Frameworks: PyTorch, TensorFlow, Keras, Transformers, LangChain

Backend: FastAPI, Flask, MongoDB, SQL, Redis

MLOps Deployment: Docker, Kubernetes, AWS EC2, CI/CD

Tools: Git, Postman, Pinecone, Weaviate, Vector Databases

Achievements

- Published a research paper on NLP-based Knowledge Management Systems (under review).

Education

FAST National University of Computer and Emerging Sciences — BS in Computer Science

2021 – 2025

Relevant Coursework: Deep Learning, Generative AI, Mlops, Web Programming, Cloud Computing, Blockchain and Cryptocurrency, Distributed Computing, Information Security