MOHAMMED ABDUL OMER

AIML ENGINEER

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SUMMARY

Aspiring Machine Learning and Generative AI Engineer with a solid foundation in neural networks, NLP, retrieval-augmented generation (RAG), and end-to-end AI application development. Experienced in building educational and productivity-focused AI tools, integrating ML with user-centric design to deliver impactful solutions. Passionate about research-driven innovation and continuously expanding skills in deep learning, generative modeling, and MLOps to contribute to cutting-edge AI projects.

EXPERIENCE

AI Research Intern

2025-03-05 - 2025-07-10

TechZone Academy for Training & Research | Hyderabad, India

Built an AI-powered online doubt-solving tutor for teachers and students, enabling automated explanations, follow-up prompts, and context-aware guidance until queries were fully resolved.

Designed and deployed an interactive PTE mock-test and evaluation system that generated listening, reading, and writing tasks, analyzed responses using LLMs, and delivered automated scoring with personalized feedback—significantly improving student test readiness.

Developed an AI-based quiz and MCQ generator and implemented a fully functional student attendance-tracking module, reducing manual academic workload across multiple departments.

Engineered modular AI workflows using LLM integration, prompt optimization, and API-based orchestration to ensure scalable and reliable application performance.

Tech Stack: Python, FastAPI, OpenAI APIs, LangChain, Prompt Engineering, RAG Pipelines, LLM Integration, REST API Development, JSON Data Pipelines

PROJECTS

PulmoScan AI – Tuberculosis Detection & Heatmap Visualization

Python • TensorFlow • OpenCV • FastAPI • HTML/CSS/JavaScript • Grad-CAM

Built a deep-learning web application that detects Tuberculosis (TB) from chest X-ray images using a custom CNN model (TBNet).

Implemented Grad-CAM heatmap visualization to highlight infected lung regions, improving interpretability for medical professionals.

Added an emergency-response module that provides treatment guidance when TB is detected to enhance practical usability in healthcare settings.

Developed a full-stack system with FastAPI for model inference and a responsive HTML/CSS/JS frontend to support seamless image uploads and instant predictions.

Integrated CSV-based logging to store patient prediction reports with timestamps for auditing and analysis.

Hybrid Deep Neural Network for Automated Fake News Detection

Python • TensorFlow • Keras • Scikit-learn • NLTK • NumPy • Pandas

Developed a hybrid deep learning model combining CNN and LSTM layers to classify news articles as real or fake, capturing both local patterns and long-term dependencies.

Integrated word embeddings, sequence modeling, and TF-IDF features to strengthen semantic representation and improve classification accuracy.

Performed comprehensive text preprocessing using NLTK, including tokenization, stop-word removal, lemmatization, and vectorization.

Achieved high precision and recall scores, outperforming traditional ML baselines on large-scale datasets.

Deployed a lightweight, user-friendly web interface enabling real-time fake news verification.

SKILLS

Machine Learning | Deep Learning | Natural Language Processing (NLP) | Retrieval-Augmented Generation (RAG) | Generative AI (LLMs) | Computer Vision | Model Deployment & Model Optimization | Data Preprocessing | Python | TensorFlow | PyTorch | Keras | Scikit-learn | NumPy | Pandas | FastAPI | OpenCV | LangChain | Hugging Face Transformers | Git & GitHub | Docker | Jupyter Notebook | VS Code | Problem Solving | Research & Analysis | Critical Thinking | Team Collaboration | Communication

EDUCATION

Bachelor of Engineering (B.E.) in Computer Science (CSM)

2026-05

Lords Institute of Engineering and Technology | Hyderabad, India

GPA: 8.2

Bachelor of Engineering (B.E.) in Computer Science from Lords Institute of Engineering and Technology. Relevant coursework includes Machine Learning, Data Structures & Algorithms, Artificial Intelligence, Deep Learning, Operating Systems, and Database Management Systems. Completed 5+ hands-on projects in NLP, RAG systems, computer vision, and AI-powered application development, demonstrating proficiency in model development and deployment. Actively contributed to AI/ML research initiatives and technical workshops, enhancing practical skills in advanced AI technologies.