Dawood Sarfraz

Machine Learning Engineer

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Education

FAST National University of Computer and Emerging Sciences
Bachelor in Computer Science — *Sep 2020 - Aug 2024*

Skills

Languages: Python, C++, SQL
Tools: Git, Postman, Docker, Kubernetes, Jenkins, AWS
Libraries: FastAPI, Flask, Streamlit
ML Libraries & Frameworks: PyTorch, scikit-learn, TensorFlow, Keras, NumPy, Matplotlib, SciPy, Pandas, Seaborn, NLTK, spaCy, OpenCV, Yolo
GenAI Libraries & Frameworks: LangChain, Weaviate DB, RAG, Crew AI, Llama3, LlamaIndex

Experience

Deutics Global — **Jan 2025 – Present**
Associate Machine Learning Engineer — *On-site*

- Developed and optimized a real-time video analytics system by converting RTSP streams to WebRTC for efficient live video processing.
- Implemented advanced tracking algorithms (SORT, DeepSORT, ByteTrack) for real-time object tracking across frames, enabling movement monitoring and direction estimation.
- Developed real-time object detection, direction estimation, and counting systems to monitor congestion.
- Built and optimized algorithms for wait time estimation, queue detection, speed calculation, and traffic light violation detection to improve traffic efficiency, enforce road regulations, and optimize signal timing.
- Implemented line and zone intrusion detection to monitor restricted areas, enhance security, and enforce access regulations.

FAST NUCES — **Sep 2023 – Sep 2024**
Machine Learning Engineer (Research Intern) — *On-site*

- Worked on a project focused on classifying skin cancer using CNN, ShuffleNet, and NasNet models, gaining experience in medical data processing and deep learning architectures.

Anonymous Tree — **Jun 2023 – Aug 2023**
Machine Learning Engineer Intern — *Remote*

- Developed a recommendation system using user data, item metadata, and techniques like content-based, collaborative filtering for personalized product suggestions.

Projects

Skin Cancer Classification using NasNet and ShuffleNet

- Developed deep learning models (Custom CNN, NasNet, ShuffleNet) for multi-class skin cancer classification using the HAM10000 dataset. Enhanced accuracy with batch normalization, dropout, and Adamax optimizer, achieving the highest accuracy with NasNet and improved efficiency with ShuffleNet.

LlamaAssist Project Link

- LLama Assist is an AI-powered application built with LLama 3.2 3B and LLama 3.2 Vision. It allows users to generate assignments with customizable output length and difficulty, save content into text files, and interact with images via AI-driven chat. Perfect for creating and managing assignments with ease and precision.

RoboText Classifier Project Link

- Built a text classification model using RoBERTa and NLTK. Enhanced performance with dynamic masking, sentence packing, byte-level BPE vocabulary, and larger batch sizes for efficient, accurate classification of diverse text.

Duplicate Questions Pair Project Link

- Built a model to identify and detect duplicate question pairs using Random Forest, XGBoost, and Decision Tree classifiers. Achieved 90% accuracy with XGBoost classifier.