M Uzair Shahid

Kahuta, Pakistan | arainuzair5658@gmail.com | +92 318 5262750

TECHNICAL SKILLS

AI / ML / Deep Learning: Computer Vision, Convolutional Neural Networks (CNN), YOLO (v8/v11) Object Detection & Segmentation, Model Training & Evaluation, Transfer Learning, Image Preprocessing & Augmentation

NLP & LLMs: Natural Language Processing, Large Language Model (LLM) Integration (Gemini, Groq LLaMA3, Claude), Prompt Engineering, Retrieval-Augmented Generation (RAG), Vector Databases & Embeddings, Conversational AI / Chatbots

Tools & Frameworks: Python, TensorFlow, PyTorch, Scikit-learn, OpenCV, Flask, Gradio, Streamlit, Pandas, NumPy

EXPERIENCE

AI Intern — AI TEC, Barakahu

Duration: 1 Year

Role: AI / Machine Learning Intern

FINAL YEAR PROJECT

FasalGuard: AI-Based Plant Leaf Disease Classification and Instance Segmentation System for Pakistani Crops Using Two-Stage YOLOv11 Pipeline

Tech Stack: YOLOv11n-cls, YOLOv11s-seg, Python, OpenCV, Flask, LabelMe, Kaggle (Tesla P100 GPU)

Designed and trained a two-stage deep learning pipeline for real-time plant disease detection aimed at Pakistani farmers: a YOLOv11n classification stage to identify the crop, followed by a YOLOv11s segmentation stage to localize and classify the disease region. Built a manually-annotated dataset (LabelMe polygon annotations) on top of the PlantCity dataset, covering 50 disease classes across 12 crop species.

- Two-stage pipeline: plant classification → disease instance segmentation
- Achieved ~99.3% mAP50 by epoch 29 during training on Kaggle's Tesla P100
- web application with three modules: AI-based detection with an integrated AI chatbot, weather-based spray timing and crop calendar, and a disease encyclopedia with Pakistan-specific market/price information
- Acted as FYP Team Leader — owned model performance, training pipeline, and documentation

OTHER PROJECTS

Computer Vision-Based Object Recognition System

Tech Stack: Python, OpenCV, CNN, Deep Learning, TensorFlow

Built a real-time object recognition system using a Convolutional Neural Network to detect and classify multiple object categories from live camera feed and uploaded images, with a focus on accuracy and low-latency inference.

- Real-time object detection and classification via webcam/image input
- CNN-based model trained and fine-tuned for multi-class recognition
- Image preprocessing and augmentation pipeline for improved accuracy

Smart Industrial Infrastructure Monitoring System

Tech Stack: Python, TensorFlow, LSTM, FFT, Scikit-learn, Seaborn

Developed a predictive maintenance system that analyzes industrial sensor telemetry (vibration, temperature, load) to anticipate equipment failures, using an LSTM-based neural network architecture with FFT-based feature engineering on synthetic sensor data.

- LSTM architecture for time-series failure prediction
- FFT-based signal/frequency feature extraction
- End-to-end technical design report and implementation

TrustGuard AI — Fake Review Detection (Android)

Tech Stack: Android, TensorFlow Lite (TFLite), Bag of Words, NLP

Built an Android application that detects fake/fraudulent product reviews on-device using a TFLite-deployed Bag-of-Words text classification model.

- On-device ML inference with TensorFlow Lite
- Bag-of-Words based NLP text classification
- Mobile-first fake review detection UX

LLM-Based RAG Document Chatbot

Tech Stack: Python, LLM API, RAG, Vector Database, Embeddings

Developed an AI-powered document chatbot that lets users upload PDFs or text documents and ask natural-language questions, using Retrieval-Augmented Generation to ground responses in the uploaded content rather than the model's general knowledge.

- Document chunking, embedding generation, and vector-based semantic search
- RAG pipeline combining retrieved context with LLM generation
- Context-aware, multi-turn conversational interface for document Q&A

EDUCATION

Dr. A.Q. Khan Institute of Computer Sciences & IT (KICSIT)

Bachelor of Science in Computer Engineering — Kahuta, Pakistan

2022 – 2026

ACHIEVEMENTS & LEADERSHIP

- FYP Team Leader — Acted as team lead in FYP group, responsible for model performance, training pipeline, and documentation.
- Led the development of a full AI-based project workflow including dataset creation, model training, testing, and UI integration.