Muhammad Maaz

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SKILLS

- **Computer Vision (Tensorflow, Keras, Transfer Learning)**
- **GenAI (LangChain, LLMs, OpenAI, Hugging Face)**
- **Deep Learning (NLP, CV)**
- **Machine Learning (Scikit-learn, Pandas, Numpy, Matplotlib)**
- **C++**
- **Python**

EDUCATION

- Software Engineering | UET Mardan — *CGPA*: *3.71* | *Oct 2021 – June 2025*
- Pre-Eng/Med | Degree College Swat — *Percentage: 85%* | *July 2021*

PROJECTS

- **Car Image Anonymization & Enhancement using YOLO11 and SAM2**
  - Built a pipeline to detect and segment cars using YOLO11 and SAM2.
  - Applied anonymization tasks: blurring number plates, tinting windows, and removing/replacing backgrounds.
  - Leveraged custom-annotated dataset.

- **AI based Network Intrusion Detection System**
  - Developed a two-stage intrusion detection system combining an unsupervised autoencoder for anomaly detection and an RNN for attack classification.
  - Used reconstruction error to flag suspicious traffic and applied RNN to label known threats using the CICIDS 2017 dataset.
  - Designed a fallback “Other” category to intelligently capture novel or unseen threats, improving detection flexibility.
  - Achieved high accuracy and low false positives under real network conditions by combining anomaly detection with targeted classification.

- **Doctor Chatbot — Educational Simulation**
  - Created using Streamlit, LangChain, and OpenAI GPT-4 to simulate doctor-patient conversations.
  - Focused on Pakistani healthcare context with local medicines.
  - Included session memory for contextual awareness.

- **Driver Drowsiness Detection with YOLOv8**
  - Implemented a real-time eye state monitoring system to detect driver fatigue.
  - Used YOLOv8s to classify eyes as open/closed and triggered alarms based on duration.

- **Word Prediction using Bidirectional LSTM**
  - Built an interactive sentence builder using a Bidirectional LSTM model.
  - Suggests four likely next words dynamically and provided manual entry support.

EXPERIENCE

- **Computer Vision Intern | ITSOLERA PVT Limited (Remote) | 07/2024 - 09/2024**
  - Developed a virtual assistant for peach growers that uses CNN-based transfer learning for soil classification and disease prediction, along with YOLO v8 for counting peaches. This tool aids farmers with soil analysis, disease detection, and yield estimation for better crop management.
  - Built a real-time visual search engine that allows users to upload an image and find similar ones, ideal for ecommerce. Used InceptionV3 for feature extraction and FAISS for fast matching, with a user-friendly interface optimized for large datasets.
  - Developed a CNN model to classify brain MRI images as tumor or non-tumor for early detection. The model uses multiple layers and data augmentation techniques to enhance accuracy, providing reliable predictions for medical diagnostics.

ACHIEVEMENTS

- **Machine Learning Specialization by Andrew Ng** – Coursera | 06/2022 - 09/2022
- **Deep Learning Specialization by Andrew Ng** – Coursera | 06/2023 - 10/2023
- **TensorFlow Developer Certificate** | 05/2024 - 06/2024
- **Got Dean's List Award for Consecutively Four Years** | 2021 - 2025

LANGUAGES

- **English:** Professional Working Proficiency
- **Urdu, Pashto:** Native or Bilingual Proficiency