Muhammad Hamza Azhar

+923305857415 | [Gmail](#) | [LinkedIn](#) | [Github](#)

EDUCATION

Pakistan Institute of Engineering and Applied Sciences   **Sept 2021 – June 2025**

Bachelor of Science in Computer Science, GPA: 3.76/4.00   *Islamabad, Pakistan*

SKILLS & INTERESTS

Python, Deep Learning, Machine Learning, Agentic AI, TensorFlow, PyTorch, Data Preprocessing, Data Visualization, Image Processing, Computer Vision, NLP, Neural Networks, Classification, Object Detection, MERN stack, FastAPI, Git/Github, Cloud Computing

PROJECTS

Skintegrity – DNN based DeepFake Video Detection using Multi-Modality Features [LIVE DEMO]

- Developed a deepfake video detection system leveraging Optical and Transdermal Optical Imaging (TOI) features.
- Designed a TOI feature extraction pipeline, generating hemoglobin concentration heatmaps (visualizing blood flow) to detect deepfakes.
- Implemented detection pipeline using insights from the ICCV paper "TALL: Thumbnail Layout for Deepfake Video Detection."
- Utilized transformer-based architectures, including Convolutional Vision Transformer, Swin, TimeSFormer.
- Deployed the trained model as a real-time web app for seamless deepfake video classification.

Food Visionary – Advanced Food Classification System [LIVE DEMO]

- Developed a deep learning-based food classifier for multi-category identification with high accuracy.
- Implemented a custom CNN and fine-tuned pre-trained models for feature extraction and classification.
- Designed an end-to-end pipeline for image preprocessing, augmentation and real-time inference.
- Optimized training with parallelized data loading, mixed precision, learning rate scheduling, and regularization for faster convergence.
- Deployed the model as a scalable web application for real-time food identification.

Profile Analyzer – Agentic AI Application for Conversation Starter [LIVE DEMO]

- Scrapes LinkedIn & Twitter to generate professional summaries and social insights.
- Suggests interesting facts and ice-breakers to start meaningful conversations.
- Built with LangChain agents + DeepSeek R1 model via OpenRouter.
- Uses Proxycurl & Tweepy APIs with mock fallback for public demo access.
- Deployed using Flask with optional LangSmith tracing for observability.

Disaster Tweets Classification using Deep Learning

- Implemented a binary classification system to detect disaster-related tweets using a labeled dataset.
- Built and evaluated multiple models including Naive Bayes, Dense Neural Network, LSTM, GRU, Bidirectional-LSTM, 1D CNN, and TensorFlow Hub-based models.
- Achieved performance benchmarking across models using accuracy, precision, recall, and F1-score metrics.
- Fine-tuned a pretrained TensorFlow Hub model and experimented with reduced data training (10%) to test model generalizability.
- Applied text preprocessing techniques including tokenization, padding, stemming, and stopword removal for optimal input pipeline.

EXPERIENCE

Evosoft Tech   **Aug 2024 – Sept 2024**

Machine Learning Intern   *Islamabad, Pakistan*

- Implemented a Decision Tree Classifier on a classification dataset, optimizing model accuracy and interpretability.

- Applied feature engineering techniques such as scaling, encoding, and feature selection to enhance model performance.
- Conducted hyperparameter tuning using Grid Search and Random Search to optimize machine learning models.
- Designed and implemented a comprehensive machine learning capstone project, integrating data preprocessing, model training, and evaluation.

LEADERSHIP & AWARDS

- Received a Certificate of Appreciation for outstanding leadership in a technical course project.
- Awarded a merit-based scholarship for two years in college for academic excellence.