

MUHAMMAD HABEEL

AI ENGINEER · COMPUTER VISION & MULTI-MODAL SYSTEMS

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PROFESSIONAL SUMMARY

Results-driven AI Engineer specialized in Computer Vision, Multi-modal Biometrics, Deep Learning pipelines, and high-performance backend architectures. Experienced in building production-grade verification pipelines combining facial recognition (InsightFace), sub-second vector search (FAISS), and custom anti-spoofing liveness classifiers (EfficientNet-B0) deployed via asynchronous FastAPI services.

PROFESSIONAL EXPERIENCE

Synavos Global

Lahore, Pakistan

AI Engineer

Aug 2025 – Present

- Architected and deployed production-ready multi-modal biometric attendance pipelines integrating InsightFace Buffalo_L (512-D embeddings), FAISS vector similarity search, and secondary iris pattern verification.
- Developed and trained a custom EfficientNet-B0 anti-spoofing classifier on a self-collected dataset to detect print attacks, screen replays, and physical masks with minimal latency.
- Engineered scalable, asynchronous FastAPI microservices containerized with Docker, optimized for low-latency edge camera ingestion and GPU compute utilization.
- Integrated multimodal retrieval pipelines with vector databases (FAISS, Chroma) to empower intelligent automation workflows and internal analytical agents.

University Applied AI Research Lab

Lahore, Pakistan

AI & Deep Learning Researcher

2024 – 2025

- Conducted research on volumetric medical MRI scan classification and anomaly segmentation using CNN and Transformer backbones with Grad-CAM visual interpretability heatmaps.
- Designed a conversational NLP triage system for ENT and nasal health guidance leveraging Hugging Face Transformers.
- Trained transfer learning models (MobileNetV2, ResNet50) on 140k+ Kaggle face datasets to classify and detect deepfake synthesis artifacts.

SELECTED ENGINEERING PROJECTS

BioAttend — Multi-Modal Biometric Attendance Pipeline

[Python, FastAPI, InsightFace, FAISS, EfficientNet-B0, OpenCV]

Complete verification system featuring face embeddings search across 10,000+ IDs, iris verification, and real-time anti-spoofing liveness detection.

Lahore TravelMate — Tourism & Heritage Platform

[Node.js, Express, JavaScript, MongoDB, TailwindCSS]

Full-stack cultural discovery platform with hardened security middleware, rate limiting, and interactive itinerary routing.

DeepFake Detection Engine — Transfer Learning Benchmark

[Python, TensorFlow, MobileNetV2, ResNet50, OpenCV]

Deep learning classification notebook on Kaggle 140k dataset benchmarking residual architectures for synthetic facial boundary artifact detection.

CORE TECHNICAL COMPETENCIES

Computer Vision & AI: InsightFace, FAISS, EfficientNet, OpenCV, DeepFake Detection, Transfer Learning, YOLO

Frameworks & Deep Learning: PyTorch, TensorFlow, Keras, Hugging Face Transformers, Scikit-Learn, NumPy, ONNX

Backend & Infrastructure: Python (FastAPI, Flask), Node.js, Express, REST APIs, WebSockets, Docker, Git

Frontend & Full-Stack: TypeScript, JavaScript, Next.js 14, React, Tailwind CSS, Responsive Web Design

EDUCATION

Bachelor of Science in Artificial Intelligence (BSAI)

Graduated with Honors

Specialization: Deep Neural Networks, Computer Vision & Multimodal Systems