

# MALIK ANEES AHMED

Gulberg Green, Islamabad

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| [github.com/MalikAnees530](https://github.com/MalikAnees530)

## PROFESSIONAL SUMMARY

### AI Engineer | Edge AI Specialist | Computer Vision

AI Engineer specializing in end-to-end ML systems, real-time computer vision, and on-device model optimization (TFLite). Experienced in FastAPI backend development, vector database management, offline-first mobile AI pipelines, and deploying production-ready AI solutions on resource-constrained edge devices.

## EDUCATION & CERTIFICATIONS

### Bachelor of Science in Artificial Intelligence (BS AI)

2023 – 2027 (Expected)

National University of Modern Languages (NUML), Islamabad

- **Leadership:** Elected Class Representative, BS AI batch.

### Intermediate in Computer Science (ICS)

2020 – 2022

Punjab Group of Colleges, Blue Area Campus, Islamabad

### Certifications

- **Certificate in IT – Web & Mobile Web Dev** – NAVTTC (Grade: A+) Jan 2023
- **AI For Everyone** – DeepLearning.AI – [Verify Certificate](#) Jul 2025

## EXPERIENCE

### Dynamic Web Applications & Interfaces

Mar 2022 – Sep 2022

NAVTTC Certification Program – Front-End Web Developer

- Developed and deployed mobile-responsive web applications using HTML5, CSS, and Firebase; completed the program with an A+ grade.

## PROJECTS

### Event ReID Engine – AI-Powered Guest Photo Retrieval

Jan 2026 – May 2026

*Independent Project – Sole Creator & Lead AI Engineer* – [github.com/MalikAnees530/Event-Guest-ReID-Engine](https://github.com/MalikAnees530/Event-Guest-ReID-Engine)

- Built a 100% offline Person Re-Identification microservice for instant photo retrieval via a single query selfie.
- Dual-vector Reciprocal Rank Fusion (RRF): 512-D ArcFace embeddings + 768-D DINOv2 ViT body maps with 2.5x facial-weight prioritization.
- FastAPI + Qdrant HNSW backend delivering 5–20 ms search latency across tens of thousands of identities.
- Applied Windows file-lock race-condition fixes and median-based consistency checks to stabilize embedding scores in production.

### Aegis Drive – Driver Drowsiness Detection System (Edge AI)

FYP – Ongoing

*NUML Final Year Project – Team Lead & Developer* – [github.com/MalikAnees530/Aegis-Drive-App](https://github.com/MalikAnees530/Aegis-Drive-App)

- Led a 4-member team integrating a CameraX-to-MediaPipe pipeline with a 478-point 3D face mesh into a Temporal BiLSTM TFLite model at 30 FPS.
- Dynamic multi-tiered EAR thresholding (0.06–0.16) reduced false-positive drowsiness alerts by 40%.
- DND-bypass alarm system and atomic Firebase Firestore telemetry ensuring 100% data retention post-drive.
- Integrated MapLibre offline routing with OSRM for navigation continuity in low-connectivity driving conditions.

## TECHNICAL SKILLS

- **AI & ML:** PyTorch, TensorFlow Lite (TFLite), MediaPipe, YOLO11, DINOv2, InsightFace ArcFace, BiLSTM, CNN, OpenCV, ONNX, RAG Pipelines, Scikit-learn
- **Languages & Software:** Python (Expert), Kotlin (JDK 17), C++, JavaScript, MVVM, Clean Architecture, OOP
- **Data & Infrastructure:** FastAPI (ASGI), Qdrant Vector DB, Firebase Firestore, Pandas, NumPy, Git
- **Web & Mobile:** Android SDK, CameraX, MapLibre, OSRM, Material Design 3, HTML5, CSS, RESTful APIs

## REFERENCES

### 1. Dr. Moiz Ullah Ghouri (Assistant Professor)

Department of Computer Science NUML, Islamabad.

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### 2. Dr. Farnaz Akbar (Assistant Professor)

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