

Muhammad Hamid

AI Engineer | Computer Vision | Python Automation | Voice AI

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PROFESSIONAL SUMMARY

AI Engineer with hands-on experience building production-grade AI systems — computer vision pipelines, voice AI integrations, intelligent automation tools, and full robotics systems with hardware integration. Currently pursuing BS Artificial Intelligence at FAST-NUCES Islamabad (2024–2028). Built and deployed multiple end-to-end AI systems including an autonomous fire-rescue robot that detects victims in real-time using YOLOv8, pose estimation, acoustic triangulation, and a Whisper-based voice query system for field operators.

TECHNICAL SKILLS

AI & Machine Learning: Python, PyTorch, TensorFlow, Keras, Scikit-learn, NumPy, Pandas, YOLOv8, OpenCV, MediaPipe, Whisper STT/TTS, LangChain, OpenAI API, RAG Systems, Pose Estimation, ORB-SLAM

Robotics & Hardware: ROS2, ESP32, A* Algorithm, Sensor Integration (MQ-2, Flame Sensors), Hardware-Software Integration, Acoustic Signal Processing

Programming & Systems: Python (Expert), C++ (Expert), Kotlin, Data Structures & Algorithms, OOP, System Design

Tools & Platforms: Git, GitHub, Docker, FastAPI, Streamlit, Linux, Android Studio, CMake, SFML, Jupyter, Google Colab, Roboflow

PROJECTS

AEGIS — Autonomous Emergency Ground Intelligence System

January 2026

Python | YOLOv8 | OpenCV | MediaPipe | Whisper | ORB-SLAM | A | ESP32 | MQ-2 Sensor*

- Autonomous fire-rescue robot inspired by Gul Plaza tragedy (Karachi, 2026 — 79 lives lost) where rescuers had no visibility inside burning buildings.
- Built real-time human, fire, and obstacle detection pipeline using YOLOv8 with live coordinate logging to CSV.
- Implemented MediaPipe Pose Estimation to classify victims as conscious (standing) or unconscious (lying down).
- Developed 4-microphone acoustic triangulation system to locate victims outside camera view via scream detection.
- Integrated ORB-SLAM for autonomous 2D building mapping and A* algorithm for shortest extraction path planning.
- Built Whisper STT + pyttsx3 TTS voice query system — field operators verbally query victim locations and receive spoken responses.

Portfolio: my-portfolio-j5o948era-f240030-8598s-projects.vercel.app

Petifi — Intelligent Robotic AI System

2025

ROS2 | Python | OpenCV | Machine Learning | Hardware Integration

- End-to-end intelligent robotic pet system with full autonomous navigation and multi-modal AI perception.
- Built obstacle avoidance using ROS2 and ML pipelines, real-time hand gesture recognition for intuitive control.
- Developed face detection for user identification and barcode authentication for secure access control.
- Managed multiple integrated AI subsystems simultaneously — delivered complete working solution.

Subway Surfers 2D Clone — C++ Game Engine

2024

C++ | SFML | OOP | CMake

- Built complete 2D endless runner game from scratch using C++ and SFML with full OOP architecture.
- Implemented Player, Obstacle subclasses, PowerUp system, TrackManager, ScoreManager, and GameEngine classes.

IFAMDS — Intelligent Forest & Animal Monitoring System

2024

C++ | DSA | Modular Architecture

- Real-time forest and wildlife monitoring system built with strict modular C++ architecture across 7 files.
- DSA-driven detection logic with zero logic duplication between modules.

GitHub: github.com/hamid388388388388/IFAMDS-Forest-Advisory-System

DeeniMentor — Android Mobile Application

2025

Kotlin | Android Studio | Mobile Development

- Full-featured Android application built using Kotlin covering complete SDLC from requirements to deployment.

GitHub: github.com/hamid388388388388/DeeniMentor

EDUCATION

BS Artificial Intelligence — FAST-NUCES Islamabad

2024 – 2028

Relevant Coursework: Artificial Intelligence, Machine Learning, Data Structures & Algorithms, Statistics & Probability, Robotics, Software Engineering, Object-Oriented Programming

FREELANCE EXPERIENCE

AI & Python Developer — Fiverr (mhamid580)

2025 – Present

- Offering computer vision, ML/DL, Python automation, and voice AI services on Fiverr.
- Gigs: object detection (YOLOv8), ML/DL projects, Python automation scripts, voice AI integration.

LANGUAGES

English (Professional) | Urdu (Native)