ALI HASNAIN

AI ENGINEER

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House B-51, Gulshan-E-Hali, Hali Road, Hyderabad, Sindh

EDUCATION

Mehran University of Engineering & Technology Jamshoro **2019 – 2023**

B.E - Computer Systems Engineering - ***CGPA*** **- 3.41/4.00** *Jamshoro, Sindh Pakistan*

SKILLS

- Data Science
- Machine Learning
- Deep Learning
- TensorFlow
- PyTorch
- Scikit-learn
- Python
- R
- SQL
- Data Visualization (Tableau, Power BI)
- Statistical Analysis
- Predictive Modeling
- Natural Language Processing
- Computer Vision
- A/B Testing
- Data Mining
- Feature Engineering
- Git Version Control

EXPERIENCE

Chief Technology Officer (CTO) | *Cognitive IT Solutions* | *Nov 2025–Present* **Karachi, Pakistan**

- Leading strategic technology vision and overseeing the development of cutting-edge AI solutions across the organization.
- Managing the technology roadmap and ensuring alignment with business objectives and long-term growth strategies.
- Establishing best practices for AI/ML development, deployment, and governance across all technical teams.
- Driving organizational digital transformation and innovation through emerging technologies and advanced AI methodologies.

Lead AI Engineer | *Cognitive IT Solutions* | *Jun 2025–Oct 2025* **Karachi, Pakistan**

- Leading the design, development, and deployment of advanced AI-driven solutions across diverse business domains.
- Architecting scalable ML pipelines and ensuring robust model lifecycle management.
- Driving innovation by integrating LLMs, computer vision, and predictive analytics into enterprise applications.
- Collaborating with cross-functional teams to align AI strategies with business goals.

AI Team Lead | *SAINCUBE - Lyceumerce* | *Mar 2024–May 2025* **Islamabad, Pakistan**

- Led the design and development of machine learning models and algorithms to address business challenges including recommendation systems, personalized shopping experiences, and predictive analytics.
- Implemented and optimized AI solutions to enhance search relevance, customer segmentation, and product categorization.
- Collaborated with data engineers to ensure robust data pipelines for the training and deployment of machine learning models.
- Conducted experiments and analyzed data to iteratively improve model performance and accuracy.
- Stayed updated on the latest advancements in AI and machine learning technologies, actively contributing to research and innovation.

Data Scientist - Metalink Systems | *Jan 2024–Mar 2024* **Karachi, Pakistan**

- Led data analysis and machine learning projects to optimize business processes.
- Developed and deployed predictive models for various applications using Python and TensorFlow.

Data Scientist - Fiverr | *July 2022–Present*

- Provided data wrangling and analysis; reduced dimensionality and improved insights by extracting key features. (Python, R, Excel)
- Utilized machine learning & deep learning techniques for automation. (CNN, YOLO, TensorFlow, Scikit-learn)

Data Analyst - VEZOW | *July 2022–Aug 2022*

- Built a machine learning model to predict customer churn. (Pandas, NumPy, TensorFlow)
- Extracted key insights from data sources to support strategic decision-making. (MySQL, ML, DL)

PUBLICATIONS

- **A Hybrid Architecture Based on Deep Learning for Object Recognition for Autonomous Driving**
  International Research Journal of Innovations in Engineering & Technology (IRJIET) • 2023
- **Impact of Digitalization on Social Entrepreneurship**
  Emerald Publishing Limited • 2023
- **A Machine Learning Framework for E. coli Bacteria Detection and Classification**
  UMT Artificial Intelligence Review (UMT-AIR) • 2023

PROJECTS

Smart AI-Based Boat for Marine Trash & Debris Collection | *Undergraduate Final Year Project* **2022 - 2023**

- Implemented a Smart AI-Based Boat using deep learning and computer vision techniques to autonomously detect and collect marine debris.
- Designed an AI garbage collection system that detects and collects garbage from water bodies automatically, enhancing marine environmental conservation efforts.
- Developed and tested algorithms for real-time image processing and object detection under various environmental conditions to ensure reliability and efficiency in debris collection.

CLO-PLO Dashboard Development | *Educational Analytics*

- Developed a student performance dashboard to track Course Learning Outcomes (CLO) and Program Learning Outcomes (PLO).
- Implemented data preprocessing using Python to clean and prepare data from Excel files for analysis.
- Constructed a data injection pipeline to transfer preprocessed data into a MySQL database for further manipulation.
- Created an interactive Power BI dashboard, employing DAX queries and Transfer Data Query to enhance data visualization and reporting capabilities.
- Integrated the dashboard into a Django web application, enabling file upload and data visualization on the home page.

AI Call Agent | *Real-Time Speech-to-Text and AI-Powered Response System*

- Developed a Flask application that integrates Deepgram's Nova 2 STT model, Groq AI for response generation, and Deepgram's Aura TTS model for real-time audio interactions.
- Implemented end-to-end functionality where user audio input is converted to text, processed by AI to generate a response, and converted back to audio, enabling seamless communication.
- Deployed and tested the system locally, ensuring smooth interaction through a user-friendly web interface accessible via a Flask-based server.

End-to-End CNIC OCR | *Multilingual OCR System*

- Developed a FastAPI application capable of performing OCR on CNIC images, handling both Urdu and English text recognition and extraction.
- Implemented logic to detect the presence of a 'chip' class in CNIC images, guiding the system to perform either English OCR or Urdu OCR followed by translation and formatting.
- Deployed and tested the system locally, with interactive API documentation available, ensuring seamless extraction of key CNIC data fields like Name, Identity Number, and Date of Birth.

Emirates ID Reader | *Document Detection and Text Extraction System*

- Developed and deployed a system to detect and extract data from various document types (ID Cards, Driving Licenses, Vehicle Licenses, Certificates), supporting both image and PDF inputs.
- Trained a YOLOv8 model on annotated datasets to identify and crop regions of interest within documents, ensuring precise and efficient text extraction using EasyOCR.
- Deployed the system using FastAPI, providing an API that returns structured JSON responses with extracted data, facilitating scalable document processing.

Logistics Counting API | *Object Counting System for Images and Videos*

- Developed an API using FastAPI and YOLOv7 model to count objects in images and videos, designed specifically for logistics and inventory management use cases.
- Implemented end-to-end processing where images or videos are submitted, processed by the YOLOv7 model, and results are returned via an accessible API endpoint.
- Deployed and tested the API locally, providing users with an interactive API documentation interface to facilitate integration and usage.