

# MUHAMMAD IRFAN

## AI Engineer

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## Summary

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AI Engineer with proven experience delivering high-impact clinical AI solutions and scalable production tools. Skilled in model development (GANs, classifiers, OCR) and real-world deployment using Python, deep learning, and data engineering pipelines. Adept at bridging research to application — optimizing model accuracy, compliance, and usability across large datasets (20K+ samples).

## Experience

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### Career Break (International Exposure)

10/2024 - 10/2025

- Spent a year abroad for personal development and broadening professional perspective.

### AI4LYF

Lahore 06/2021 - 10/2024

#### AI/ML Engineer

Bridging the gap between AI research and clinical practices.

- GAN-based Image Reconstruction:** Built and optimized Pix2Pix model using loss functions (MAE, VGG, content, classifier-based) for imaging enhancement.
- Classifier Development:** Trained **CNN-based multiclass multilabel classifier** on hybrid datasets (real + GAN-generated), achieving high accuracy and validated synthetic data reliability.
- Dashboard Engineering:** Developed an **interactive biomarker monitoring dashboard** using **Python Dash**, improving reporting speed and visual analysis for clinical teams.
- OCR Automation:** Automated **form digitization and data extraction** workflows using **OpenCV**, **EasyOCR**, and **AWS Textract**, cutting manual entry time and boosting data accuracy.
- Biomedical Audio Classification:** Built **XGBoost/ExtraTrees models** for clinical audio signal classification across 4 conditions, integrating demographic metadata for higher model robustness.
- Data Infrastructure & Leadership:** Designed and led a **data collection framework** (20K+ validated samples), including backend app design, validation pipeline, and team training for safe, compliant data handling.

### DL Lab (KICS, UET)

Lahore 01/2021 - 02/2021

#### AI Intern

Research lab focusing on machine learning and AI projects.

- Built an **interactive regression dashboard** using **Django**, improving data visualization and model evaluation efficiency.

### DigiSol

Lahore 10/2020 - 12/2020

#### Web Developer Intern

Web development company.

- Contributed to web development projects using **Laravel** and **Magento**.

## Education

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### KICS, University of Engineering & Technology (UET), Lahore

Lahore 09/2020 - 03/2021

#### Data Analytics

### The University of Lahore

Lahore 08/2014 - 05/2019

#### BS in Software Engineering (CGPA: 3.71 / 4.00)

### Govt. College Boys Zafarwal

Narowal 01/2012 - 12/2014

#### Intermediate in Computer Science

## Skills

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Generative AI, LLMs, RAG, Prompt Engineering, GANs, Computer Vision, Signal Processing, OCR (Tesseract, EasyOCR, AWS Textract, OpenCV), Deep Learning, Python, TensorFlow, PyTorch, Data Visualization (Plotly, Seaborn, Dash), Research Implementation, AI Solution Development.

## Courses

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Introduction to Amazon SageMaker, Foundations of Prompt Engineering, Amazon Bedrock: Getting Started, Planning a Generative AI Project, AWS Artificial Intelligence Practitioner Learning Plan.