

# Muhammad Hassaan Ahmad

Lahore, Punjab, Pakistan

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## EDUCATION

**Bachelor's in Computer Science (BS-CS)**  
*FAST National University of Computer and Emerging Sciences, Islamabad*

2021 - 2025

## EXPERIENCE

**AI Developer (Remote)**  
*Machine Learning & Automation*

2024 - Present

- Developed Selenium-based bots for web scraping and automation tasks across various domains
- Delivered custom ML solutions for classification and prediction problems using advanced algorithms
- Built personalized LLM using WhatsApp chat data for conversational AI applications
- Fine-tuned transformer models for domain-specific mental health assistant with enhanced accuracy
- Integrated LangChain and RAG with ChromaDB for context-aware AI agents and intelligent retrieval
- Created end-to-end ML pipelines with comprehensive data preprocessing and model deployment

## PROJECTS

**Wheat Disease Detection using GAN-based Augmentation**

2025

- Developed mobile app for agricultural disease detection using MobileNet-V3 architecture
- Implemented GAN-based data augmentation to enhance dataset diversity and model robustness
- Utilized TensorFlow/PyTorch for training and optimization of detection models
- Achieved improved accuracy in wheat disease identification through synthetic data generation

**Context-Aware AI Assistant**

2025

- Built intelligent conversational AI system using RAG (Retrieval-Augmented Generation) architecture
- Integrated ChromaDB vector database for efficient context retrieval and semantic search
- Implemented LangChain framework for orchestrating complex AI workflows and agent interactions
- Optimized system performance for real-time query processing and contextually relevant responses

**Mental Health AI Assistant**

2024

- Fine-tuned transformer models specifically for mental health support and counseling applications
- Developed domain-specific training datasets and implemented specialized preprocessing techniques

**Automated Web Scraping Solutions**

2022

- Designed scalable web scraping bots using Selenium and BeautifulSoup frameworks
- Developed robust data extraction pipelines for e-commerce and business intelligence applications
- Implemented anti-detection mechanisms and dynamic content handling for complex web environments
- Created automated data processing and storage solutions with real-time monitoring capabilities

## SKILLS

**Languages:** Python, C/C++, Dart, SQL, Rust

**ML/DL:** PyTorch, TensorFlow, Keras, Scikit-learn, Transformers, Hugging Face, spaCy, NLTK

**AI Frameworks:** LangChain, LangGraph, LangSmith, RAG

**Databases:** MySQL, SQLite, MongoDB

**Vector DBs:** ChromaDB, Pinecone

**Web Frameworks:** FastAPI, Flask

**Tools & IDEs:** Docker, Git, Linux, Jupyter, VS Code, Windsurf, Cursor, Google Colab

**Automation:** n8n, make.com

## SPECIALIZATIONS & ACTIVITIES

**Specializations:** Machine Learning, Natural Language Processing, Computer Vision, Data Science, AI Ethics & Fairness

**Activities:** Open Source Contributions, Tech Community Engagement, Competitive Programming, Mobile App Development