

# Hamza Rasheed

📍 Lahore, Punjab    ✉ Mail    in LinkedIn    🐙 Github

## Profile

Possess strong academic foundation and practical expertise across the Artificial Intelligence spectrum, including advanced Machine Learning, Deep Learning, Computer Vision, Reinforcement Learning, Generative AI, and Large Language Models (LLMs).

## Technical Skills

**Languages Databases:** Python, C#, C++, SQL, XML

**Frameworks & Librarie:** OpenCV, PyTorch, Scikit-Learn, TensorFlow, NumPy, Pandas, Hugging Face Transformers and Diffusers, Weights and Biases, XGBoost, Langchain, RAG Pipelines, Vector Databases.

**Web Technologies:** HTML, CSS, JavaScript

**Other Skills:** Data Strcutures, Algorithms, Github, VS Code, Visual Studio, Kaggle, Google Colab, Jupyter Notebook

## Projects

**Final Year Project(Pneumonia Detection Web App)** | Technologies: Python, TensorFlow, Keras, DenseNet121, Transfer Learning, Deep Learning, Django

- Built a pneumonia classification model using transfer learning with DenseNet121 and custom CNN layers.
- Trained on labeled chest X-ray images to classify pneumonia vs. normal with high accuracy.
- Integrated into a Django-based web app for real-time image upload and AI-powered diagnosis.

**Intelligent RAG Chat System with Memory Management** | Technologies: Python, PostgreSQL, FAISS, Sentence Transformers, OpenAI API, Vector Search

- Developed a Retrieval-Augmented Generation (RAG) system for real-time context-aware conversations using FAISS for semantic search and Sentence Transformers for embedding generation.
- Designed a modular microservices architecture with background workers for summarization, embedding, and PostgreSQL-based session management to support scalable, concurrent chat processing.

## Education

**Islamia University Bahawalpur**

**2021 – 2025**

Bachelor of Science in Computer Science

CGPA: 3.2

**Major Coursework:** Machine Learning, Algorithms, Graph Theory, App & Web Development