Hamza Rasheed

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👤 Profile

Possess strong academic and theoretical knowledge of advanced **Machine Learning** and **Deep Learning** paradigms, including **Reinforcement Learning**, **Neural Network architectures** such as **LSTM**, **CNN**, **RNNs**, as well as **Transformers** and **Diffusion Models**.

🖥 Technical Skills

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

Frameworks & Libraries: Keras, OpenCV, PyTorch, Scikit-Learn, TensorFlow, Transformers, NumPy, Pandas, Django, Sentence-Transformers, FAISS

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

🈂 Languages

English, Urdu, Punjabi