

Abdurrehman Afzal Warraich

Software Engineer — Machine Learning Engineer

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Summary

Ambitious and detail-driven software engineering student with a solid foundation in machine learning, deep learning, NLP, and full-stack development. Skilled in Python, data pipelines, and model deployment. Proficient in building intelligent web apps using Next.js and PostgreSQL. Eager to contribute to impactful AI solutions in a forward-thinking and tech-driven environment.

Education

COMSATS Institute of Information Technology, BS in Software Engineering Sept 2021 – Present
• GPA: 2.8/4.0
Punjab College Gujranwala, F.Sc Pre-Engineering 2019 – 2021
• Percentage: 80

Technical Skills

Languages: Python, SQL, JavaScript, C, C++

AI, ML, and NLP: Model training, fine-tuning using Scikit-learn, Pandas, Transformers and LangChain

PostgreSQL: Designing schemas, writing complex queries, joins, indexing, and integrating with ML backends

Next.js: Building performant web apps with dynamic routing, API integration, and deployment via Vercel

Developer Tools: Git, VS Code, Jupyter Notebook, Google Colab, Render, Firebase, Vercel

Projects

Real-time Hate Speech Detection on Social Media | *Python, Transformers, Flask, Scikit-learn, Imbalanced-learn*
• Fine-tuned DistilBERT on Twitter hate speech data using Hugging Face Transformers.
• Built a Flask API to classify sentences and tested with Postman endpoints.
• Evaluated model performance using F1-score and handled class imbalance with SMOTE.

Legal Document QA Bot | *Python, HuggingFace, LangChain, Streamlit*
• Built a semantic search and QA system for legal documents using LangChain and ChromaDB.
• Enabled PDF upload and embedding-based querying for legal question answering.
• Deployed frontend using Streamlit for live interactive search.

AgroBoost (Final Year Project) | *React Native, FastAPI, MongoDB, Firebase, Solidity*
• Designed a farmer-buyer ecosystem integrating crop yield prediction, auctions, and AgroCoin.
• Developed a React Native frontend and FastAPI backend with Firebase/MongoDB storage.
• Built a secure Virtual Coin payment system to have secure transactions.

Courses

Machine Learning Specialization

Completed a comprehensive three-course series focused on supervised, unsupervised, and deep learning using real-world datasets.

Natural Language Processing Specialization

Gained hands-on experience in building text classifiers, word embeddings, and transformer-based NLP models.