

# Muhammad Umer Tariq

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## SUMMARY

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Interested data scientist with a solid foundation in programming, statistics, and machine learning. Proficient in Python, SQL, and data visualization libraries like Matplotlib and Seaborn. Experienced in building predictive models, analyzing large datasets, and extracting actionable insights to drive data-informed decisions. Skilled in data preprocessing, feature engineering, and model evaluation.

## EDUCATION

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### FAST NUCES

*Bachelor of Science in Data Science*

Lahore, Punjab  
Sep 2021 – June 2025

### Selected Coursework

Generative AI, NLP, Big Data Analytics, Deep Learning, Data Mining, Data Analysis and Visualization

## PROJECTS

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### Real-time Brain Computer Interface (BCI) System

Aug 2024 – May 2025

*Deep Learning, Embedded Systems*

*Python, TensorFlow, OpenCV*

- Developed a real-time, low-cost BCI prototype using ESP32, AD620, and EEG electrodes to classify cognitive states for hands-free device control by users with limited mobility
- Applied frequency-domain analysis and digital filtering to reduce artifacts and enhance signal quality, achieving 93% classification accuracy

### Research Paper Summarizer using LLMs

May 2025 – Jun 2025

*Natural Language Processing, Large Language Models*

*Python, NLTK, Hugging Face Transformers*

- Fine-tuned transformer-based models (BERT, T5) using Hugging Face and PyTorch to generate concise, human-readable summaries of academic papers
- Reduced literature review time by 61% through domain-specific data curation and model optimization, enhancing research efficiency

### Brain Tumor Detection using Brain MRI Images

March 2024 – May 2024

*Computer Vision, Medical Imaging*

*Python, TensorFlow, Keras, NumPy, Pandas*

- Built a deep learning model to classify four types of brain tumors from MRI images with 89% accuracy
- Used image preprocessing techniques like normalization and augmentation to boost model performance

### Twitter Sentiment Analysis

Apr 2023 – May 2023

*Natural Language Processing, Sentiment Analysis*

*Python, Scikit-learn, NLTK, Matplotlib*

- Classified sentiments (positive, negative, neutral) of 50,000 tweets using NLP and machine learning models, achieving 85% accuracy
- Visualized sentiment distribution and trends to derive insights on public opinion of trending topics

## TECHNICAL SKILLS

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**Programming Languages:** Python, C++, SQL

**ML Libraries & Frameworks:** TensorFlow, PyTorch, Keras

**Libraries & Tools:** NumPy, Pandas, Scikit-learn, OpenCV, NLTK, Git, Docker

## ACHIEVEMENTS

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- 4-time Dean's List honoree
- Secured 3rd position in Fall 2022 semester