

HAMZA YOUNAS

Data Scientist | ML Engineer

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Education

Islamia University of Bahawalpur, BS in Computer Science CGPA: 3.27 / 4.0 Feb 2025

Member of Google Developer Student Club at IUB | Tech Nation Digital Conference'22 | Volunteered as a recruiter and interviewer | Conferences: TechLancer Summit and Expo'23

Projects

Tweet Emotions Classification Using BERT

- Developed a deep learning model for emotion detection using TensorFlow and BERT.
- Preprocessed text data with BERT tokenizer, generating tokenized inputs and attention masks.
- Built a custom TensorFlow data pipeline for efficient batching and shuffling.
- Trained a BERT-based sentiment classifier with 13 emotion classes using ReLU and softmax activation layers.
- Implemented real-time sentiment prediction on tweets and saved the trained model for future use.

Enhancing Customer Retention

- Analyzed historical data of 7,043 customers to predict churn and improve retention strategies.
- Built a data preparation pipeline involving data cleaning, feature engineering, and imputation of missing values.
- Applied various machine learning models, including Logistic Regression, Random Forest, and XGBoost, to optimize churn prediction.
- Achieved best results with XGBoost, with key metrics:
- AUC: 79%, Recall: 83%, Precision: 54%
- Performed feature importance analysis and compared model performances.

Final Year Project: Pneumonia Detection in Chest X-Rays Using CNN

- Developing a deep learning model using Convolutional Neural Networks (CNN) for pneumonia detection.
- Leveraging CNN architectures such as ResNet, VGG, and DenseNet for enhanced accuracy in medical image classification.
- Training the model on chest X-ray images to differentiate between normal and pneumonia-infected lungs.
- Focused on optimizing performance for real-world healthcare applications.

Skills

Languages	Python, R, SQL
Libraries & Frameworks	Pandas, Numpy, Statsmodels, Matplotlib, Seaborn, Scikit Learn, Tensorflow, Hugging Face Transformers
Certifications	IBM Data Science Professional Certificate, Coursera Supervised Machine Learning: Regression and Classification, Advanced Learning Algorithms, DeepLearning.AI Pandas, Numpy Certificate, Kaggle