

Bilal Saeed

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WORK EXPERIENCE

Punjab Safe Cities Authority

Senior Communication Officer

Lahore, Pakistan

Jan 2019 - Present

- Developed a sentiment analysis system for Emergency 15 calls using NLP techniques.
- Implemented Speaker Diarization to differentiate voices, enhancing conversation insights.
- Improved quality assurance and optimized response strategies by classifying emotional tones.
- Designed a system to forecast criminal activity and optimize resource allocation using real-time Emergency 15 Calls.
- Conducted data cleaning, feature engineering, and hyperparameter tuning for improved model accuracy.
- Enabled proactive crime prevention, resulting in a measurable reduction in crime rates.
- Created a real-time dashboard for monitoring emergency response times and operational efficiency.
- Developed APIs with Flask to ensure seamless data integration and continuous monitoring.
- Visualized key metrics using Matplotlib and Seaborn, empowering data-driven decision-making.

EDUCATION

Lahore Leads University

BS-Information Technology

Lahore, Pakistan

Graduation Date: Jul 2017

Career Track Certification

Deep Learning with Tensorflow 2

Graduation Date: Nov 2022

Graduation Date: Nov 2022

PROJECT EXPERIENCE

Independent Projects

Machine Learning Engineer

- Built a CNN model to classify bird calls, aiding wildlife achieving 92% accuracy.
- Developed an AI-powered chatbot using Langchain and vector search for accurate medical advice. Deployed the solution on Streamlit for public use.
- Applied K-Means clustering on customer behavioral data to segment users into actionable categories. Delivered insights that improved targeted marketing campaigns by 20%.
- Built an LSTM-based model in TensorFlow to classify movie reviews with 87% accuracy, aiding content moderation strategies.
- Developed an NLP-based model to accurately classify text in five different languages, trained on a diverse multilingual dataset. This solution enables high-precision content categorization and automated language-based routing.
- Designed a machine learning workflow using MLflow for experiment tracking, DVC for versioning datasets and models, and Apache Airflow for orchestrating training pipelines. Streamlined reproducibility and ensured seamless collaboration, reducing experimentation overhead.

SKILLS & INTERESTS

Platforms: Jupyter Notebook, Google Colab, AWS (EC2, S3, SageMaker), Azure ML, Google Cloud Platform (GCP), Docker, Kubernetes, Git, Linux, Hadoop, Spark; Tools: Scikit-Learn, TensorFlow, PyTorch, Keras, Hugging Face Transformers, XGBoost, LightGBM, CatBoost, Prophet, OpenCV, NLTK, SpaCy, Selenium,

Skills: FastAPI, Flask, Airflow, MLflow, DVC (Data Version Control), Streamlit, Tableau, Power BI; Major Skills: Data Preprocessing & Feature Engineering, Predictive Analytics & Forecasting, Machine Learning Model Development, Model Evaluation & Hyperparameter Tuning, Deployment & Automation (Flask, Docker), NLP, ETL/ELT.

Interests: Reading, Table Tennis, Travelling