Tushar Saxena

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Education

VIT Bhopal University 8.40
Bachelor of Technology in Computer Science and Engineering *Oct 2022 - Present*

Personal Summary

Computer Science student at VIT with a strong foundation in data analysis, machine learning, and software development. Proven ability to process large datasets (100,000+ records) and extract actionable insights, leading to a 20% boost in operational efficiency. Experienced in advanced predictive modeling, natural language processing (NLP), and deep learning, including LSTM-based crime prediction (85% accuracy) and stock movement forecasting (75% accuracy). Optimized data workflows to reduce processing time by 30% and led 3+ collaborative projects using AWS, TensorFlow, and React. Strong communicator with a proven ability to collaborate effectively in team environments.

Technical Skills

Hard Skills: Predictive Modeling, Clustering Models, Data Modeling, Natural Language Processing (NLP), Artificial Neural Networks (ANN), Convolutional Neural Networks (CNN), Data Mining.
Languages: Java, Python, C/C++, SQL, JavaScript, HTML/CSS, R
Techniques: Statistical Analysis, Machine Learning, Data Visualization
Developer Tools: Git, Docker, Kubernetes, Tableau.
Platforms: AWS, SalesForce, Google Cloud Platform.

Projects

LSTM-Based CCTV Crime Prediction Model Using Deep Learning Jan 2025 – May 2025

- Developed an end-to-end deep learning pipeline using LSTM, processing 100,000+ video frames from CCTV footage (UCF dataset)
- Reduced false positives by 18%, improved detection accuracy to 85%, and achieved an F1-score of 0.87, surpassing baseline models by 30%
- Applied OpenCV techniques to extract and preprocess 100% of input frames, reducing noise and improving model input quality by 25%
- Designed and trained an LSTM model using Keras, leveraging temporal patterns to improve sequence classification accuracy by 30%
- Deployed the solution on AWS EC2 and integrated a Streamlit dashboard, supporting real-time predictions at $\tilde{5}$ FPS with <1s latency
- Delivered a robust model with an F1-score of 0.87, improving predictive accuracy by 30% over traditional methods

Stock Movement Analysis Based on Social Media Sentiment Oct 2024 – Dec 2024

- Built an NLP-based ML model to forecast stock movements using sentiment extracted from 2,000+ Reddit posts and discussions
- Scraped over 10,000 financial discussions from Reddit and Twitter using Praw, BeautifulSoup, and Scrapy to gather social sentiment data
- Transformed and vectorized 100% of textual data using TF-IDF and TextBlob, generating polarity scores with 90%+ processing accuracy
- Engineered 5+ sentiment-based features including frequency of ticker mentions and sentiment volatility for model training
- Trained logistic regression and decision tree models, achieving 75% precision, improving benchmark accuracy by 15%
- Generated data visualizations and reports that provided insights of sentiment trends, boosting interpretability by 40%

Certification

IBM : Blockchain Developer
ETHNUS: Salesforce Administration
University of Michigan: Applied Machine Learning
NPTEL: Cloud Computing