Tushar Kumar Gautam

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Summary

Electrical Engineering undergraduate at IIT Roorkee with expertise in Data Science, NLP, and MLOps. Proficient in Python and C++, with hands-on experience designing scalable full-stack AI applications and optimizing end-to-end ML pipelines. Skilled in deploying production-ready models using tools like Docker and MLflow to solve complex engineering challenges.

Education

Indian Institute of Technology, Roorkee Uttrakhand,India
Bachelor of Technology in Electrical Engineering *2022 – Present*

Experience

Data Scientist May 2025 – July 2025
PocketFM *Remote*

- Analyzed large-scale user behavior data to identify early churn indicators and enable targeted retention strategies.
- Segmented 2M+ users into behavior-based cohorts to identify high-risk groups and enhance personalization efforts.
- Evaluated A/B experiments by comparing session, impression, and click metrics to drive data-driven product decisions.
- Built an NLP pipeline for 50K+ user reviews to extract sentiment and uncover key issues for feature improvements.

Projects

End-to-End Quality Prediction MLOps | *Python, ML, Flask, MlFlow, Dagshub* (GitHub) Dec 2025 – Dec 2025

- Built a modular pipeline using Pandas and Scikit-learn for automated data ingestion, transformation, training.
- Integrated MLflow and DagsHub to track ElasticNet experiments, log metrics (RMSE, R^2), and manage model versioning.
- Built a custom validation system enforcing schema constraints to ensure data integrity prior to training.

Full-Stack NLP Intelligence Platform | *Python, Flask, spacy, GroqAPI* (GitHub) Jan 2026 - Jan 2026

- Engineered a secure Flask/Python web app with session-based authentication and modular backend architecture.
- Implemented a robust user management system featuring protected routing and secure JSON data persistence.
- Developed a real-time NLP inference pipeline integrating spaCy and TextBlob for instant text analysis.
- Architected a multi-tier system decoupling authentication, NLP processing, and UI for enhanced maintainability.

Credit Card Default Prediction | *Python, numpy, pandas, matplotlib, seaborn* (GitHub) Sep 2024 – Sep 2024

- Developed an end-to-end credit card default prediction model with EDA, preprocessing, and feature engineering.
- Handled class imbalance using SMOTE and compared ML algorithms to identify the best model.
- Optimized the model using the F2-score, selecting Random Forest for high recall.
- Built a complete ML pipeline with threshold tuning and validation on unseen data.

Technical Skills

Programming: Python, SQL, C++
ML & Deep Learning: PyTorch, TensorFlow, Scikit-learn
NLP & GenAI: Transformers, LangChain, HuggingFace, RAG
MLOps & CI/CD: Model Versioning, Experiment Tracking, Pipelines, Docker, GitHub Actions
Backend & Serving: FastAPI, Flask, Streamlit
Data & Tools: Pandas, NumPy, Matplotlib, Seaborn, Git, Jupyter, VS Code, DagsHub