Devam Singh

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Education

Bachelor of Technology (BTech), Computer Science and Engineering

Indian Institute of Information Technology, Ranchi   **Anticipated Graduation: 2026**

Technical Skills

- **Programming Languages:** Python, C++, SQL
- **Libraries/Frameworks:** Pandas, NumPy, Scikit-learn, TensorFlow, Keras, PyTorch
- **Machine Learning:** Regression, Classification, Neural Networks, Hyperparameter Tuning, Deep Learning
- **Data Visualization:** Matplotlib, Seaborn, Plotly
- **Tools:** Jupyter, Git, Google Colab, VS Code, FastAPI
- **Generative AI:** Retrieval-Augmented Generation (RAG), FAISS, Pinecone, Chroma, LangChain
- **Other:** Data Preprocessing, Web Scraping, Feature Engineering, Data Augmentation, Model Optimization

Projects

CampusBot: AI Chatbot for IIIT Ranchi   *February 2025*

Tech Stack: LangChain, FAISS, ChromaDB, Streamlit, Mistral 7B, OpenRouter API, Hugging Face

[Live Demo]

- Engineered a Retrieval-Augmented Generation (RAG) chatbot, reducing student query resolution time by **70%**.
- Enhanced response generation using Mistral 7B-Instruct via OpenRouter API, improving contextual accuracy.
- Transformed website content into **10,000+ embeddings** using Hugging Face and stored them in ChromaDB for fast retrieval.
- Implemented conversational buffer memory, increasing response accuracy by **30%**.
- Launched the chatbot via Streamlit, garnering **100+ active users** within the first month.

Telecom Customer Churn Prediction   *September 2024*

Tech Stack: Python, Scikit-learn, SMOTE, FastAPI, Pandas, NumPy, Hyperparameter Tuning

- Developed an ensemble model predicting churn with **92.4% accuracy** on a **7,032-record dataset** (IBM Sample Dataset).
- Balanced dataset using **SMOTE**, increasing F1-score for the minority class by **60.38%**.
- Conducted extensive evaluation with ANNs, DecisionTree, Logistic Regression, and Weighted Voting Classifier.
- Optimized model with feature selection and hyperparameter tuning to enhance predictive performance.
- Deployed a scalable prediction API using **FastAPI**, enabling real-time telecom insights.

Sentiment Analysis with LSTM   *November 2024*

Tech Stack: Python, TensorFlow, Keras, LSTM, Streamlit, IMDb Dataset

[Live Demo]

- Trained an LSTM model on the IMDb dataset, attaining **88.9% accuracy** over **50,000+ reviews**.
- Applied tokenization and custom embeddings via `keras.preprocessing.text`, boosting efficiency by **35%**.
- Fine-tuned model with **batch size 32** and **learning rate 0.001**, enhancing sequential pattern recognition.
- Deployed the model on a **Streamlit-powered UI**, engaging **500+ users** in its first month.

Certifications

- **IBM Professional Data Science Certificate** - Covers data visualization, web scraping, preprocessing, machine learning, SQL, and cloud computing.

Achievements

- Ranked among the **top 3%** of candidates in JEE Mains (National-Level Entrance Exam).
- Secured **Rank 5** in UPJEECUP (State-Level Diploma Entrance Exam).