



Mahanti Ajay Babu
UG (IV Year I Semester)
B.Tech. (Mechanical Engineering)
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Registration No: 22117079/2026



Area of Interest

Data Analytics || Machine Learning || Deep Learning || Gen AI

Education

Year	Degree/Examination	Institution/Board	CGPA/ Percentage
2025	B.Tech. 4th Year	Indian Institute of Technology, Roorkee	6.050
2022	Intermediate (Class XII)	SRI CHAITANYA VIDYA NIKETAN	86.60 %
2020	Matriculate (Class X)	SRI CHAITANYA EM SCHOOL	100.00 %

Internships

GenAI Intern | IIT Roorkee June 2025 - July 2025

- Built a RAG-based legal chatbot using LangChain and Mistral to deliver accurate answers on Indian law.
- Created a stateful legal retrieval system using ChromaDB to enable fast vector search and consistent outputs.
- Implemented Hybrid Search with semantic and BM25 methods, delivering a smooth legal chatbot interface for use.
- Deployed a Streamlit-based chatbot for public use with a GitHub repo and demo.

Projects

E-commerce Sales Analytics & Customer Insights | Self Project March 2025 - April 2025

- Analyzed multi-table e-commerce data to uncover sales trends, category performance, and customer behavior patterns.
- Executed complex SQL queries and developed insightful visualizations in Python for data exploration.
- Generated KPIs on monthly trends, category revenue, YoY growth, and top customers for better decision-making.

Credit Card Score Modeling Classification & Risk Techniques | Finance Club IIT Roorkee May 2025 - June 2025

- Constructed a Robust Financial risk model using XGBoost and LightGBM, achieving an 84% F2 Score for classification.
- Optimized model performance using Optuna for Hyperparameter Tuning and SMOTE to manage class imbalance.
- Processed raw credit data using Pandas and NumPy, applying Encoding and EDA to validate key feature selection.

Optimizing Air Travel Through Flight Delay Prediction | Society of Business IIT Roorkee June 2025

- Modeled flight delay risk with a Random Forest Classifier, achieving AUC of 0.81 and 78% F1-Score on testing data.
- Interpreted model decisions using SHAP and OAI (Operational Adjustability Index) to identify controllable delay factors.
- Analyzed 8 years of historical data (2015-2023), applying EDA and defining a 15% Delay Rate threshold for classification.

Automated Meta Data Generation | Models and Robotics Section, IIT Roorkee June 2025

- Integrated Mistral APIs with structured prompts and JSON parsers to generate reliable metadata outputs.
- Built a robust extraction pipeline for PDF/DOCX/TXT with OCR support using PyTesseract.
- Developed a Streamlit interface for file upload, metadata display, and one-click JSON export.

Awards / Scholarships / Academic Achievements

- Secured a AIR of 7625 in JEE ADVANCED 2022
- Secured Gold Medal in Badminton Mens Doubles Conducted by MechOlympia (MIESS) 2024
- Secured Silver Medal in Intra Bhawan Badminton Tournament Conducted by Jawahar Bhawan 2024

Skills

Computer languages	Python, SQL
Software Packages	Excel (Advanced), Power BI, SQL (MySQL), Python (Pandas, NumPy, Matplotlib, Seaborn, Scikit-learn), TensorFlow, PyTorch, OpenCV, Hugging Face, LangChain, Streamlit, Jupyter Notebook
Languages Known	English, Hindi, Telugu

Positions of Responsibility & Extra Curriculars

Participant AlgoVision Competition | Career Development Cell, IITR & KOED Learning January 2025 - February 2025

- Participated in AlgoVision Case Study Competition (CDC, IIT Roorkee & KOED Learning); analyzed Zeptos quick commerce model and developed data-driven solutions for inventory, delivery optimization, and customer retention. Designed GTM strategy, analytics dashboard, and presented actionable insights, strengthening skills in data analysis, visualization, and strategic problem-solving.

Placement Coordinator | Placement and Internship Cell , IIT Roorkee May 2023 - January 2025

- Assisted in organizing placement activities and coordinated with students and recruiters. Acted as a link between students, the institute, and companies to ensure smooth processes. Built recruiter connections, promoted internship opportunities, and supported industry interactions. Improved the institutes placement reputation by assisting in planning and negotiating internships and recruitment drives.