

PURN SRIDHAR SANDIL

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Education

Degree/Certificate	Institute	CGPA/%	Year
M.Tech (Department of Management Sciences)	Indian Institute of Technology Kanpur	-	2026–Present
B.Tech (Computer Science & Engineering)	National Institute of Science and Technology (Autonomous), Berhampur	7.96	2019–2023
Higher Secondary Education (CBSE)	Koncept Public School, Chakradharpur	60.4	2018
Secondary Education (ICSE)	S.E.Rly M.H.S School (E/M), Chakradharpur	72.2	2016

Publications

- [1] Purn Sridhar Sandil, Prof. Charulata Palai, Prof. Pradeep Kumar Jena, **Efficient Airline Price Prediction using Hybrid Machine Learning Techniques**, 4th International Conference on Communication, Circuits and Systems, IC3S 2023 (IEEE Xplore), KIITS Bhubaneswar. [\[Paper\]](#)

Projects

[1] Hybrid RNN - XGBoost Model with Explainable Learning for Efficient Price Prediction ([Github](#))

Machine Learning — Regression — Academic Project

Self Project

Objective

- Developed a model to predict the most efficient price to gain a competitive business edge and attract maximum customers.
- Provided a comparative analysis report containing pricing patterns, near-future fluctuations, and key business insights.

Approach

- worked on a kaggle dataset 300,000 records plus additional realtime webscraping data, encoded the 11 raw features to 37 encoded features and performed dimensionality reduction & selection bringing the final feature space to 9.
- Trained a Hybrid RNN-XGBoost model and incorporated Explainable Learning techniques to interpret prediction behavior.

Result

- Achieved peak performance with R^2 **Score = 0.9794**, **MAPE = 11.63%**, **MAE = INR 1667.27**

[2] Simple Chatbot using NLP ([Github](#))

Machine Learning — Retrieval-based Chatbot

Self Project

Objective & Approach

- Developed a modular chatbot using Logistic Regression and cosine similarity for accurate, context-aware responses.
- Loaded and cleaned 3,725 QA pairs, vectorized text using TF-IDF, and integrated utility tools (Wikipedia search, math, date-time).
- Implemented threshold-based routing to display the prediction source and confidence score.

Result

- Delivered accurate responses while transparently showing prediction sources and confidence levels.

[3] Customer Segmentation ([Github](#))

Machine Learning — Clustering

Self Project

Objective & Approach

- Segmented customers using demographic, marketing, and spending data; analyzed distributions via histograms and scatter plots.
- Applied K-Means Clustering and the Elbow Method to identify optimal clusters; visualized 2D/3D boundaries using Plotly.
- Toolset:** Python (NumPy, Pandas), Matplotlib, Seaborn, Plotly, scikit-learn.

Result

- Segmented customers into **5 distinct groups** to enable targeted marketing based on behavioral insights.

Coursework & Skills

Relevant Coursework	Probability and Statistics* Operations Research for Management* Introduction to Computing* Introduction to Machine Learning*
Technical Skills	Programming: Python, C++ Libraries: NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn* Tools: Tableau, Power BI, VS Code, Jupyter Notebook, MySQL*
Soft Skills	Critical Thinking High Persistence Problem Solving Communication Curiosity Leadership

Certificates & Extracurricular

- Certificate of Presentation** – Presented "Efficient Airline Price Prediction using Hybrid Machine Learning Techniques" at the 4th International Conference on Communication, Circuits and Systems (IC3S 2023, IEEE Xplore), KIITS Bhubaneswar.