

GROUP 6 – TEAM CONTRIBUTION REPORT

Vishvapavani Bhupathi – Data Visualization & Regression Modeling

Vishvapavani was responsible for developing the project's visual analytics and regression components. She created data visualizations that helped the team understand patterns, distributions, and trends within the dataset. Her work included generating histograms, scatterplots, heatmaps to support exploratory data analysis.

She also built and evaluated multiple regression models, comparing performances and interpreting model outputs. Her insights guided key decisions about feature importance and predictive relationships, strengthening the analytical depth of the project.

Sai Annessha Veluri – Data Acquisition, Cleaning, & Clustering Analysis

Sai Annessha led the data acquisition workflow, retrieving the dataset from the required API sources and ensuring all data was properly imported in a reproducible manner. She performed cleaning procedures, including handling missing values, correcting inconsistencies, removing duplicates, and processing outliers.

Additionally, she conducted the clustering analysis, applying algorithms such as K-Means and GMM to identify natural groupings within the data. She evaluated clustering quality using metrics like Silhouette Score and provided visual cluster interpretations that informed downstream modeling.

Sai Arvind Nelluri – Data Preprocessing & Classification Modeling

Sai Arvind managed key preprocessing tasks required for machine learning workflows. His responsibilities included encoding categorical variables, splitting the dataset, and preparing training/testing pipelines.

He also developed and evaluated multiple classification models—including Logistic Regression, Decision Trees, Random Forests, MLP Neural Networks, and Support Vector Machines. His model comparisons (accuracy, precision, recall, F1-score) helped determine the most effective classification strategy. His work ensured the final predictive models were optimized, validated, and aligned with project objectives.

Summary

Each team member contributed meaningfully to complementary aspects of the project:

- **Vishvapavani** provided analytical visuals and regression insights.
- **Sai Annessha** ensured clean, reliable data and meaningful clustering structure.
- **Sai Arvind** built robust classification models and prepared data for machine learning.

Together, these contributions enabled a comprehensive end-to-end data science workflow, resulting in a well-structured, well-analyzed, and effectively modeled project.