■ SpaceX Machine Learning Prediction — Executive Summary

Goal: Predict whether the SpaceX Falcon 9 first stage successfully lands using historical launch data.

Dataset: SpaceX API and secondary datasets (payload mass, orbit type, launch site, mission outcome).

Approach: Data Wrangling, Feature Engineering, Model Building (Logistic Regression, SVM, Decision Tree, KNN, Elastic-Net), Accuracy and F1 Evaluation.

Results: Decision Tree achieved 94% accuracy (F1 = 0.92). Payload mass and orbit type were the top predictors.

Impact: Demonstrated end-to-end ML pipeline, API integration, and classification modeling.