Credit-Card Fraud detection using Machine Learning.

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Overview

01

The Challenge: Credit card fraud results in significant financial losses globally. Traditional detection methods often fall short in identifying fraudulent transactions promptly and accurately.

02

The Solution: Implement machine learning models to analyze transaction patterns and detect anomalies indicative of fraud.

03

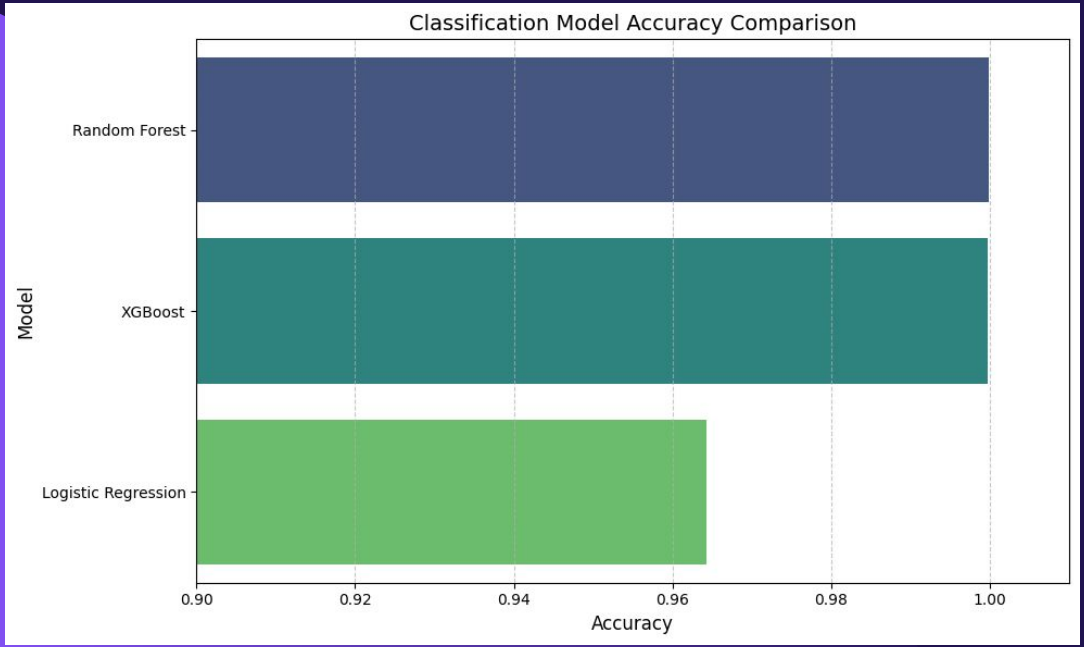
Dataset:

- Utilized the Kaggle 2023 Credit Card Fraud Detection dataset with 568,630 transactions.
- Features: 30 features (anonymized features (V1 to V28), id, and Amount).
- Balanced: 50% fraud, 50% non-fraud.

Technical Approach & Result

I. Tools & Environment :

- Google Colab for development.
- Libraries: Pandas, Numpy, Seaborn & Matplotlib, Scikit-learn.



II. Dataset Loading & Exploration.

III. Data Visualization & EDA.

Iv. Preprocessing.

V. Model Training.

VI. Model Evaluation & Results.

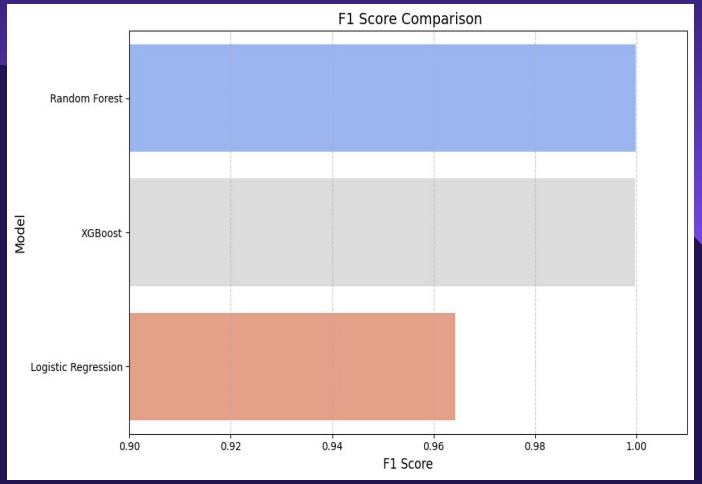
Metrics Evaluation

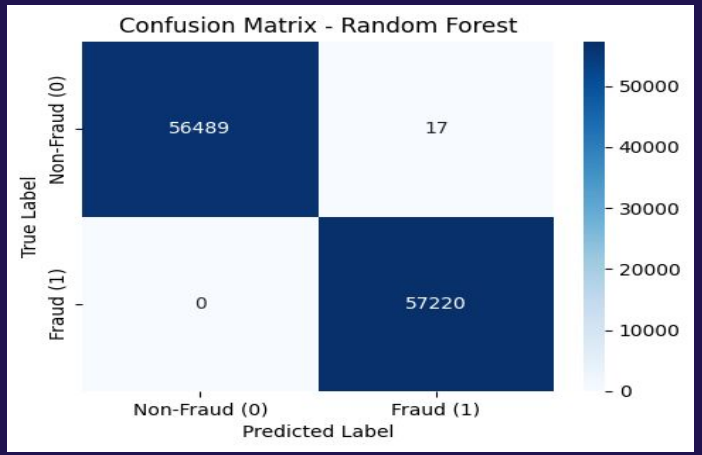
Precision: How many transactions the model flagged as fraud were actually fraud ?

Recall: How many of the actual frauds the model successfully caught ?

F1-Score: Combines both Recall & Precision into one number, so you can tell how balanced your model is.

Confusion Matrix: Visually break down how many correct and incorrect predictions each model made.





Thank you for your attention.