Credit Card Fraud Detection

Project Overview

This project aims to build a machine learning model for detecting fraudulent credit card transactions. The model addresses the challenges of imbalanced data while minimizing false positives and maximizing fraud detection accuracy. The final solution provides the bank with a robust fraud detection system that reduces manual reviews and chargebacks, while preventing the loss of legitimate transactions.

Objectives

Analyze and preprocess transaction data to identify key features for fraud detection.

Handle data imbalance to improve model performance.

Develop, tune, and evaluate machine learning models for fraud detection.

Perform cost-benefit analysis to assess the financial impact of the model.

Results

The final model effectively identifies fraudulent transactions with a high precision-recall balance, helping the bank reduce fraud-related financial losses.