CHURNCOMPASS: NAVIGATING CUSTOMER RETENTION IN TELCOM

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INTRODUCTION

In today's highly competitive telecommunications industry, customer retention is important for sustained business success. Losing customers (churn), can lead to significant revenue losses, making it essential for telecom companies to proactively identify customers at risk of leaving. This project will focus on developing a predictive model to forecast customer churn by analyzing customer data and identifying key factors that contribute to churn, it will also aim to equip the company with insights to improve customer retention strategies

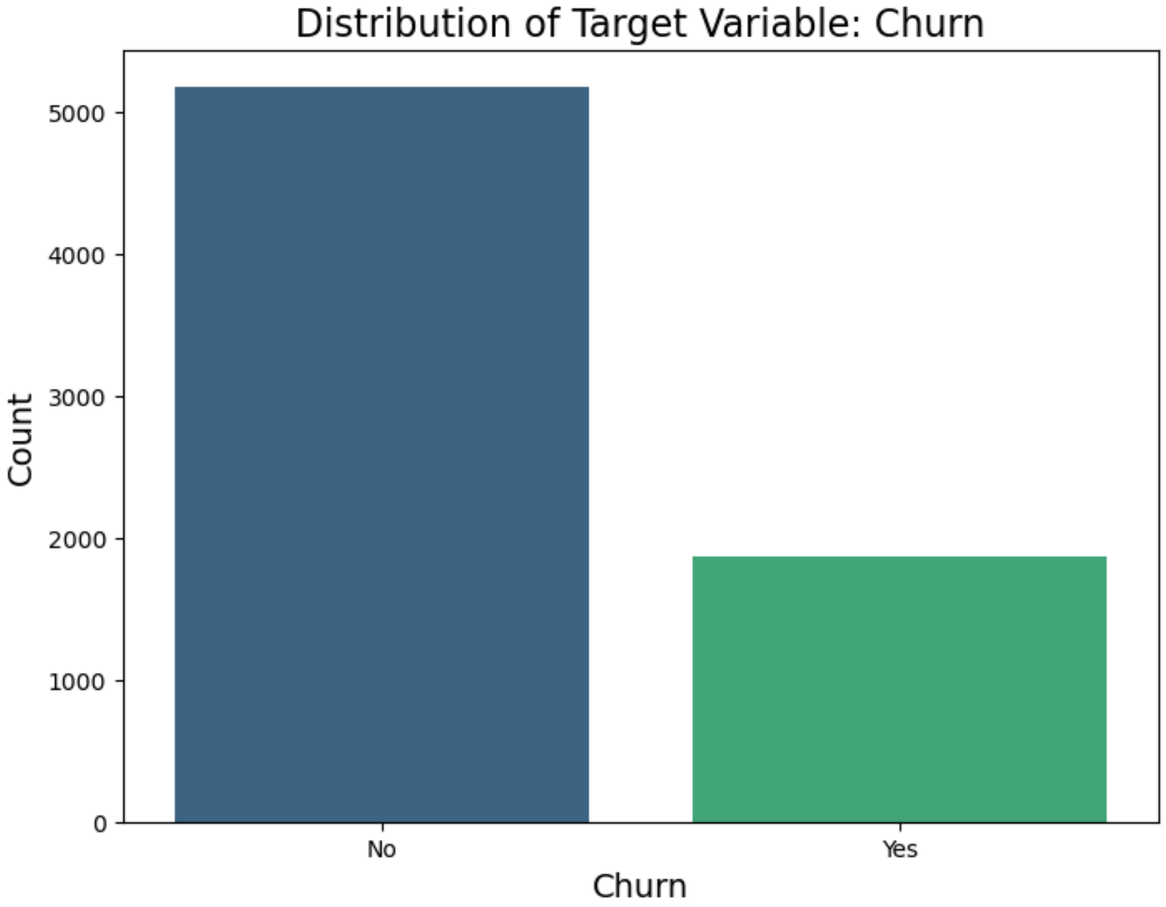
BUSINESS PROBLEM

The objective of this project is to predict whether a customer will churn (leave the service) in the near future. Accurate churn predictions will allow the company to intervene with targeted retention efforts, potentially saving significant revenue. By understanding the patterns and reasons behind customer churn, the company can gain insights on how to improve their pricing, services, and customer support.

DATA UNDERSTANDING

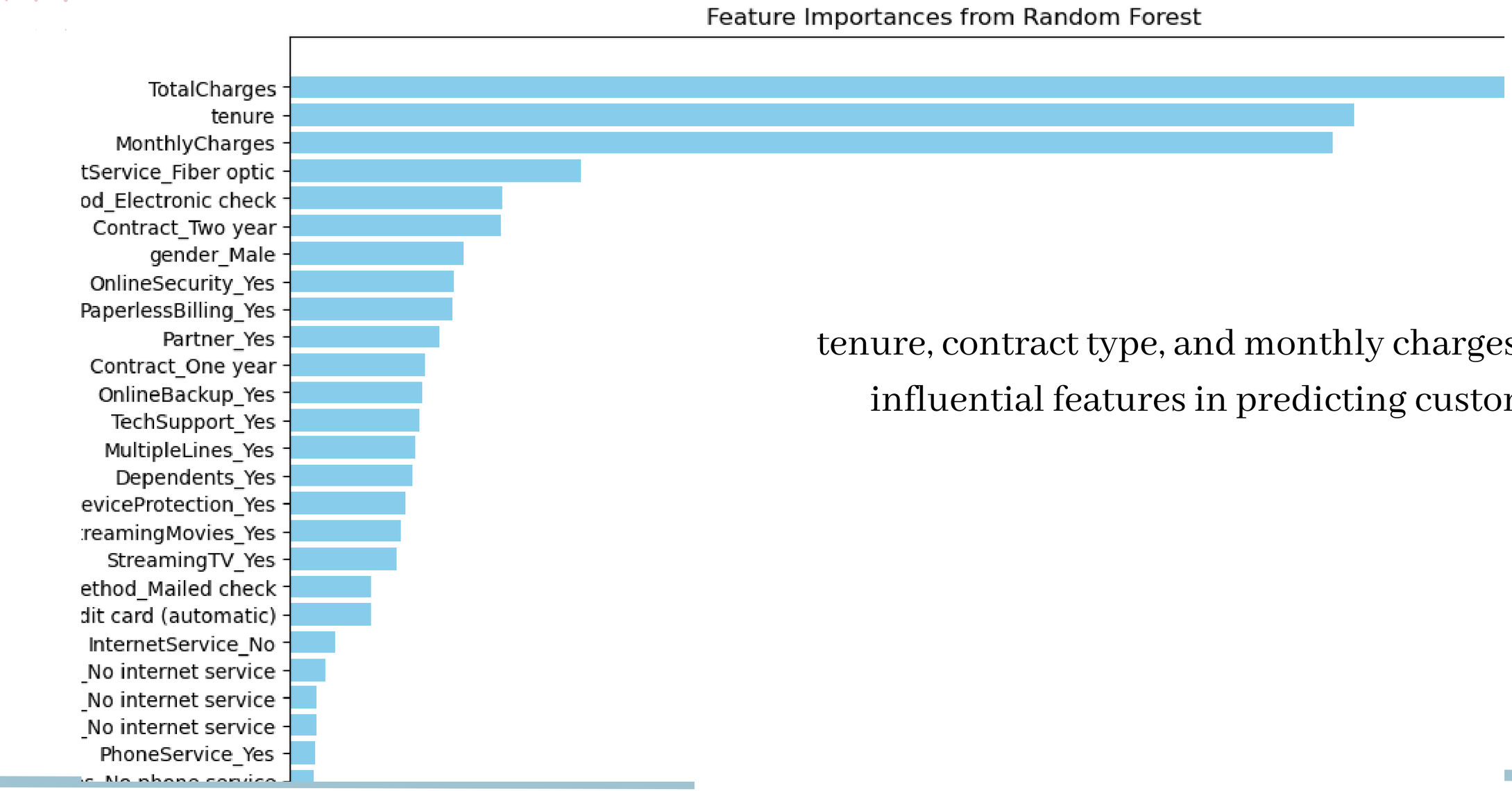
The dataset used for this analysis contains customer information, including demographics, account details, and service usage patterns. Key features include tenure, contract type, payment method, monthly charges, and various service-related variables. The target variable is a binary outcome indicating whether the customer has churned or not.

DATA OVERVIEW



The distribution of the target variable (Churn) shows that there is an imbalance in the dataset, with a higher number of customers not churning compared to those who do. Addressing this imbalance is crucial for building a robust predictive model.

FEATURE IMPORTANCE



tenure, contract type, and monthly charges are the most influential features in predicting customer churn

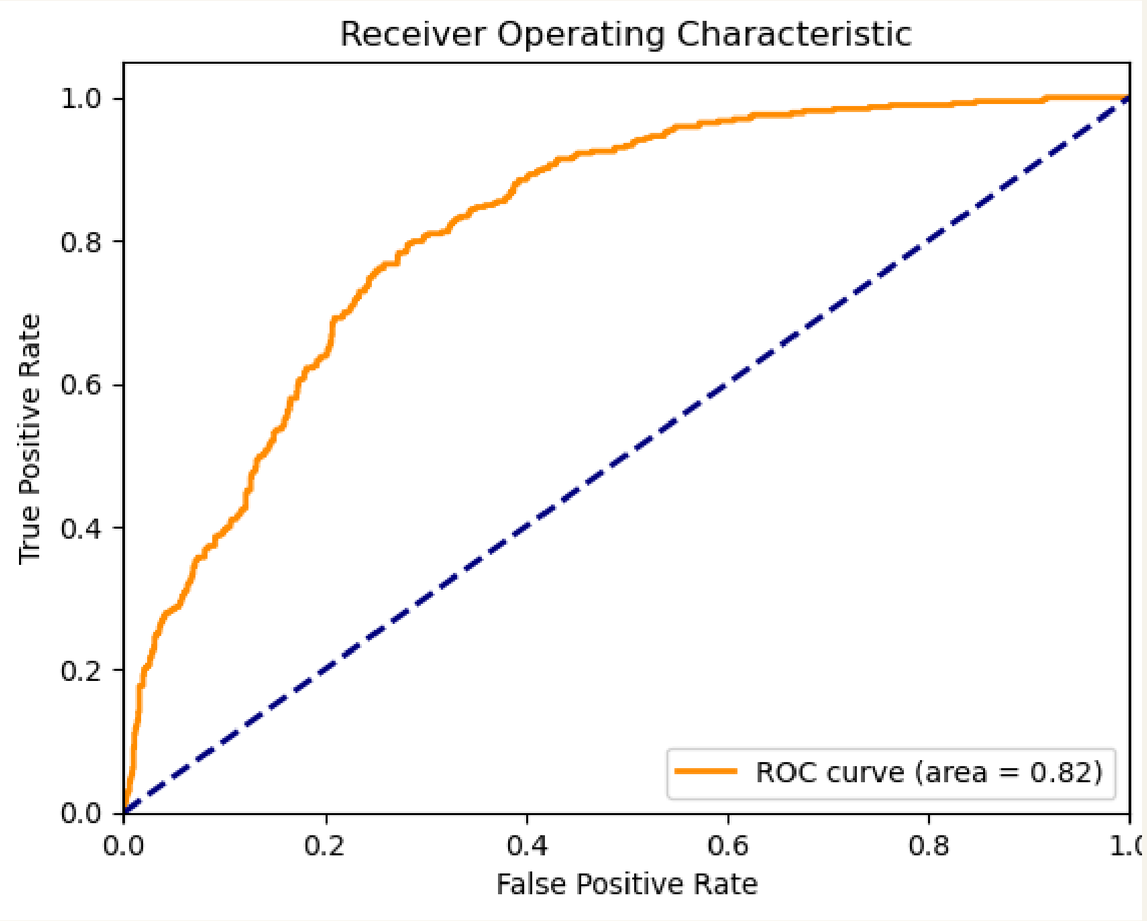
MODEL DEVELOPMENT AND EVALUATION

A Random Forest Classifier was chosen for its robustness and ability to handle both numerical and categorical data. The model was trained on the preprocessed dataset and evaluated using the test set.

The model's performance was evaluated using various metrics:

Accuracy: 78% Precision (Churn): 63% Recall (Churn): 45% FI-Score (Churn): 53% ROC-AUC: 0.82

ROC CURVE



The ROC curve shows the model's ability to distinguish between churned and non-churned customers. The AUC (Area Under Curve) of 0.82 suggests a good performance.

CONCLUSION AND RECOMMENDATION

- Targeting Short-Tenure Customers
- Re-evaluation of Pricing Strategies
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- Personalizing Retention Efforts

This project successfully developed a predictive model to identify customers at risk of churning in the telecom industry. The analysis highlighted key factors influencing churn and provided actionable insights to improve customer retention.