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Predicting Customer Churn for a Telecom Company

Introduction

- What is Churning?





Business Problem and Motivation

- Over the past decade, the telecommunications industry has witnessed a rapid increase in the number of users.
- Churn has emerged as a significant challenge, leading to substantial financial repercussions.
- Acquiring a new customer can cost up to five times more than retaining an existing one.
- Retaining customers is crucial for sustaining revenue and ensuring long-term profitability.



Objective and Goals

Primary objective: Develop a predictive model to identify customers at risk of churning.

Key goals:

- Build an accurate classification model.
- Conduct a comprehensive analysis to support retention strategies.

Real World Impact of using Business Analytics

According to Forbes, customer acquisition cost in 2020 was as high as \$325.

In a scenario with 10,000 customers at risk of churning, implementing a churn prediction model can lead to large savings.

- Cost of acquiring 10,000 customers = $\$325 \times 10,000 = \$3,250,000$
- Cost of retaining customers = $\$50 \times 10,000 = \$500,000$
- Cost Savings = Cost of acquiring new customers - Cost of retaining customers
- Cost Savings = $\$3,250,000 - \$500,000 = \$2,750,000$

This calculation illustrates the significant cost savings associated with the churn prediction model.

By retaining 10,000 customers at the risk of churning, the company could save up to \$2,750,000.

DETAILS OF THE DATASET

- Dataset sourced from an Iranian telecom company.
- 3150 rows, 13 columns.
- Churn column serves as the target variable.
- All columns, except the churn column, represent aggregated data for the initial 9 months.
- The churn column reflects the customer's status after 12 months, the three-month interval is for implementing retention strategies.

METHODOLOGY AND APPROACH

- Implemented supervised classification algorithms

Incorporated the following stages into our project implementation:

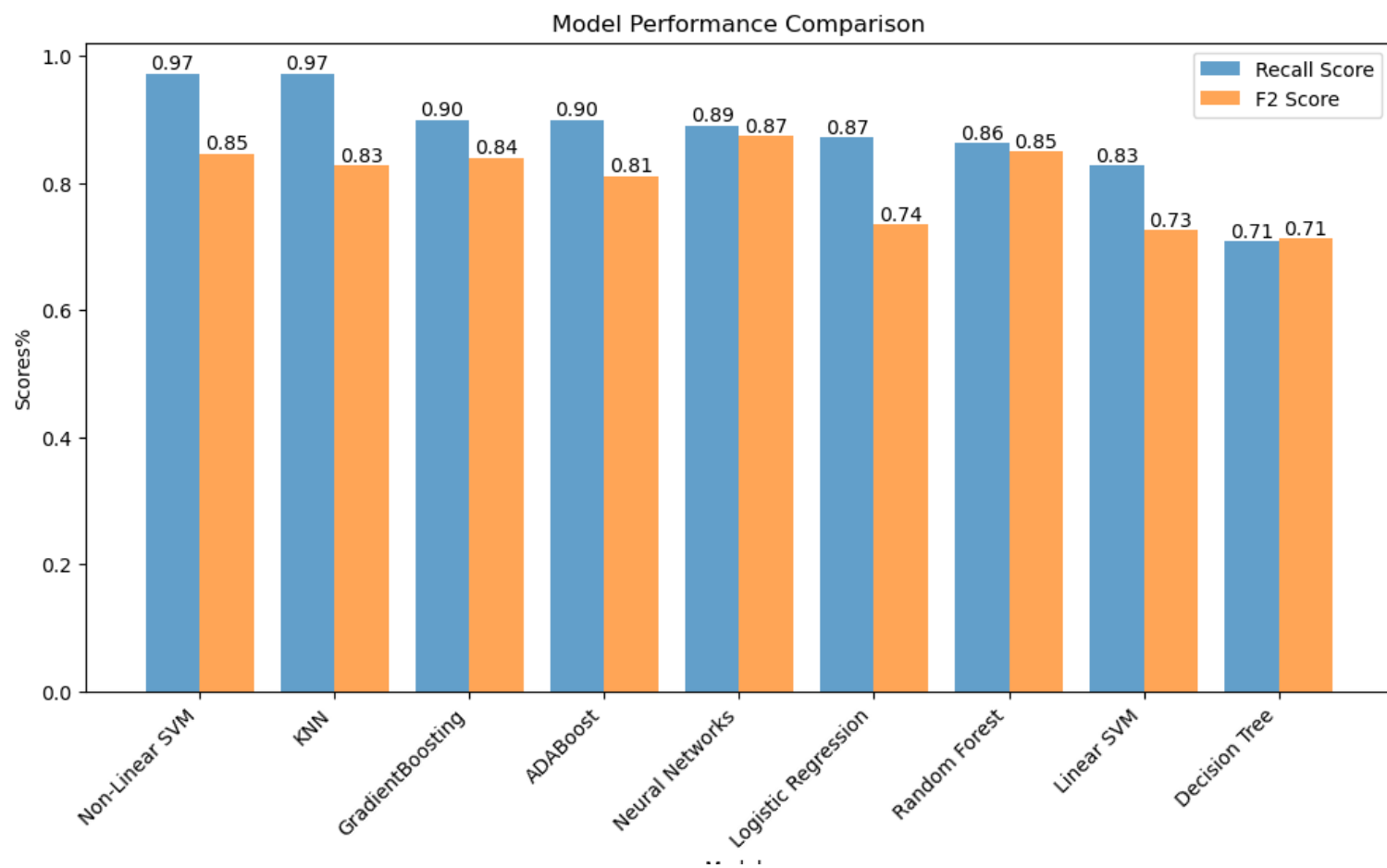
- Exploratory Data Analysis
- Preprocessing the dataset.
- Training and testing a variety of classification methods.
- Choosing the best model based on a metric suitable for the business case.
- Hyper-Parameter tuning for the chosen model.



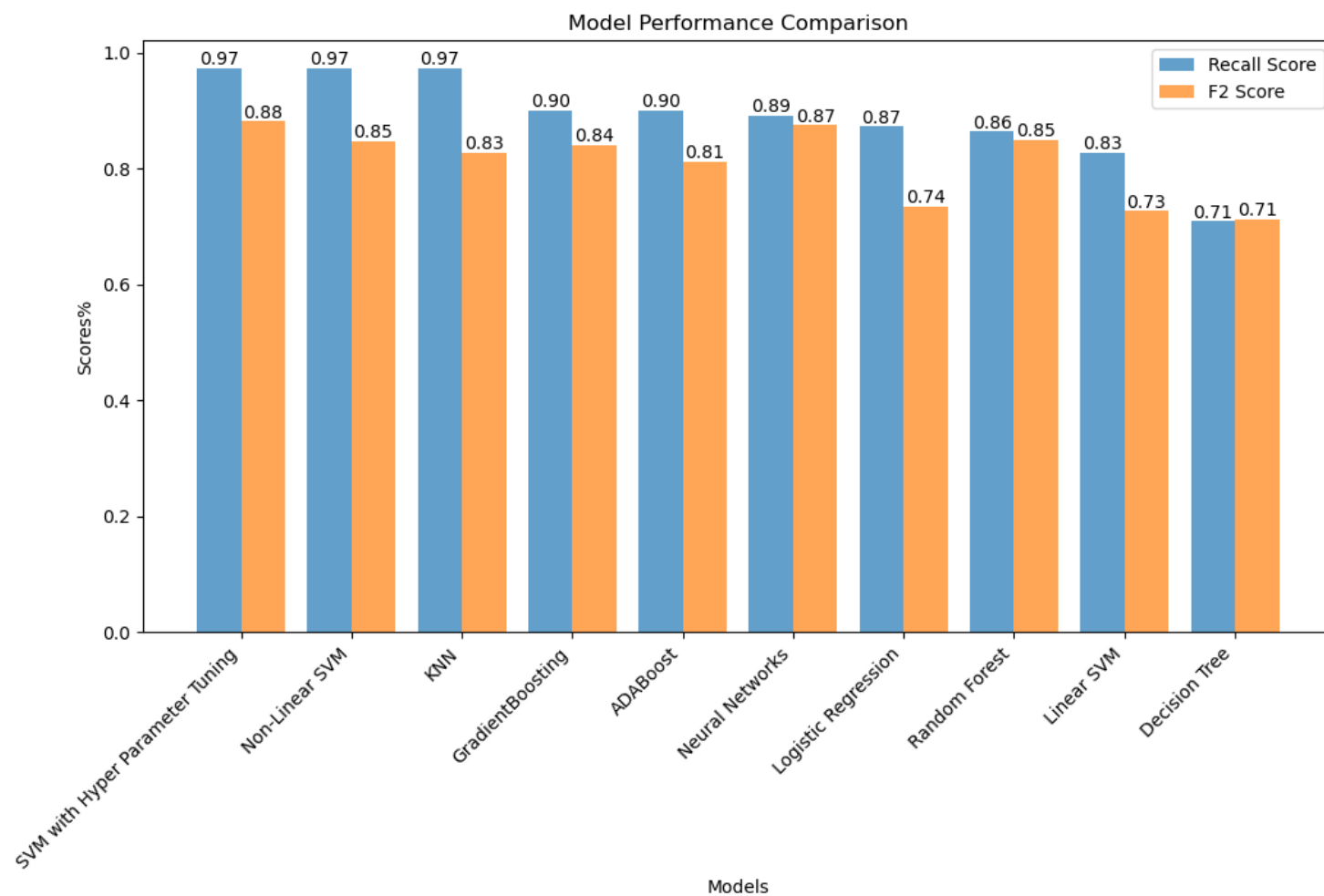
Choice of Metric

- False Positive (FP): When the model incorrectly predicts customers as being at risk of churning when they are not.
- False Negative (FN): Model incorrectly predicts customers as not being at risk of churning when they are.
- We have selected two primary metrics for evaluating the performance of our churn prediction model: Recall and F2 Score.

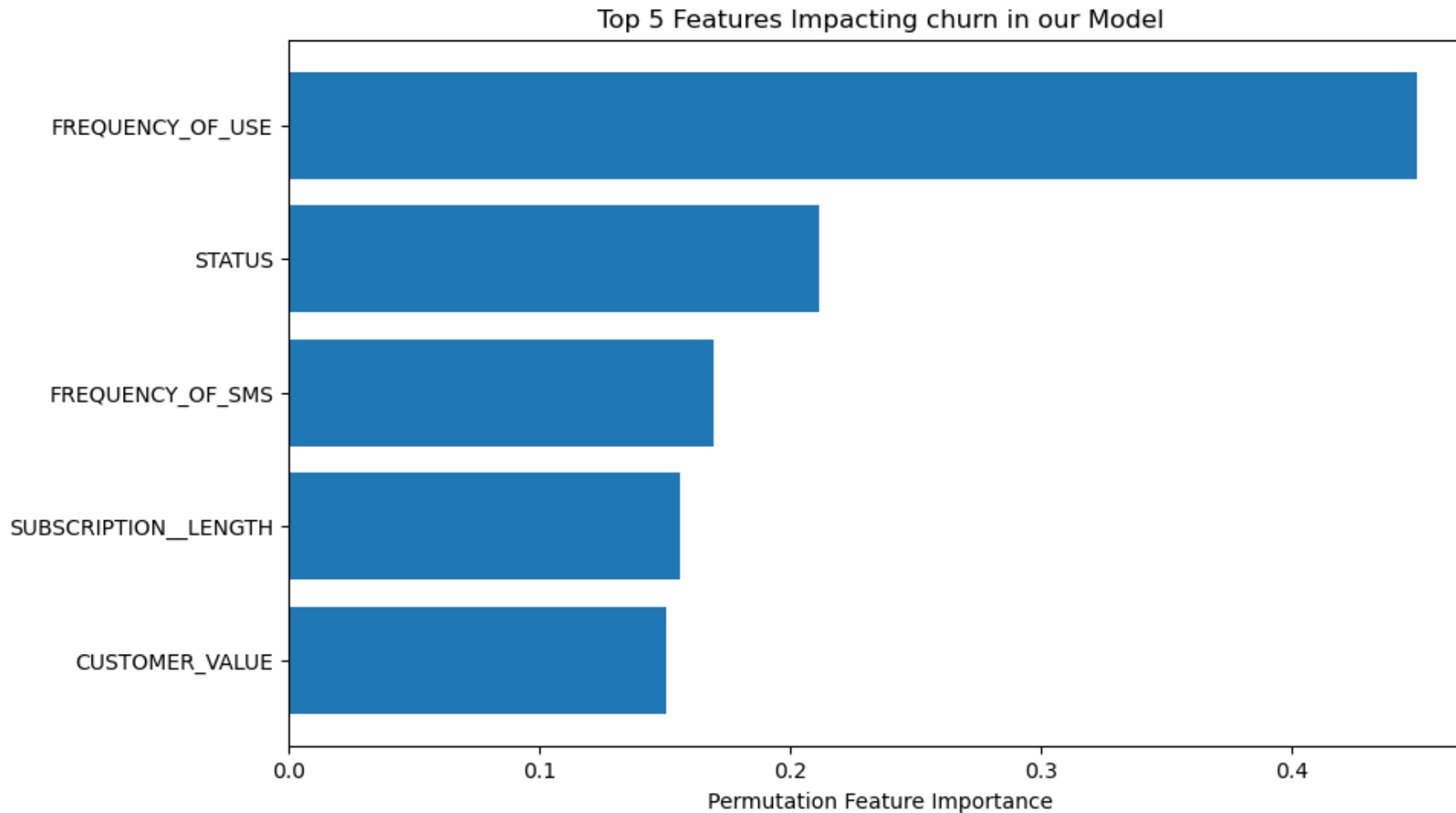
Results



Results



Features Impacting Churn





How the Model can be Used

- Identifying At-Risk Customers
- Customer Segmentation for Enhanced Strategy
- Customer Segmentation for Enhanced Strategy

Thankyou

