

# SYRIA-TEL CUSTOMER CHURN PREDICTION

Machine Learning-Based Analysis

# INTRODUCTION

This project focuses on predicting customer churn using a dataset from a telecommunications company. Churn prediction helps businesses identify customers likely to leave, enabling them to take proactive retention measures. The analysis covers data cleaning, exploratory data analysis (EDA), feature engineering, model building, evaluation, and interpretation of results.



# PROJECT GOAL

To help the company predict which customers are likely to leave (churn), therefore allowing for timely intervention and retention strategies by the responsible team.



# DATA SUMMARY

- Source: Kaggle - Churn in Telecom's Dataset
- Data includes customer demographics and services.
- Churn Status: whether the customer left the service or not.



# PROCESS



- 1. Data Loading
- 2. Exploratory Data Analysis
- 3. Data Preprocessing
- 4. Model Building
- 5. Model Evaluation
- 6. Feature Importance
- 7. Conclusions & Recommendations

# INSIGHTS

## Modelling

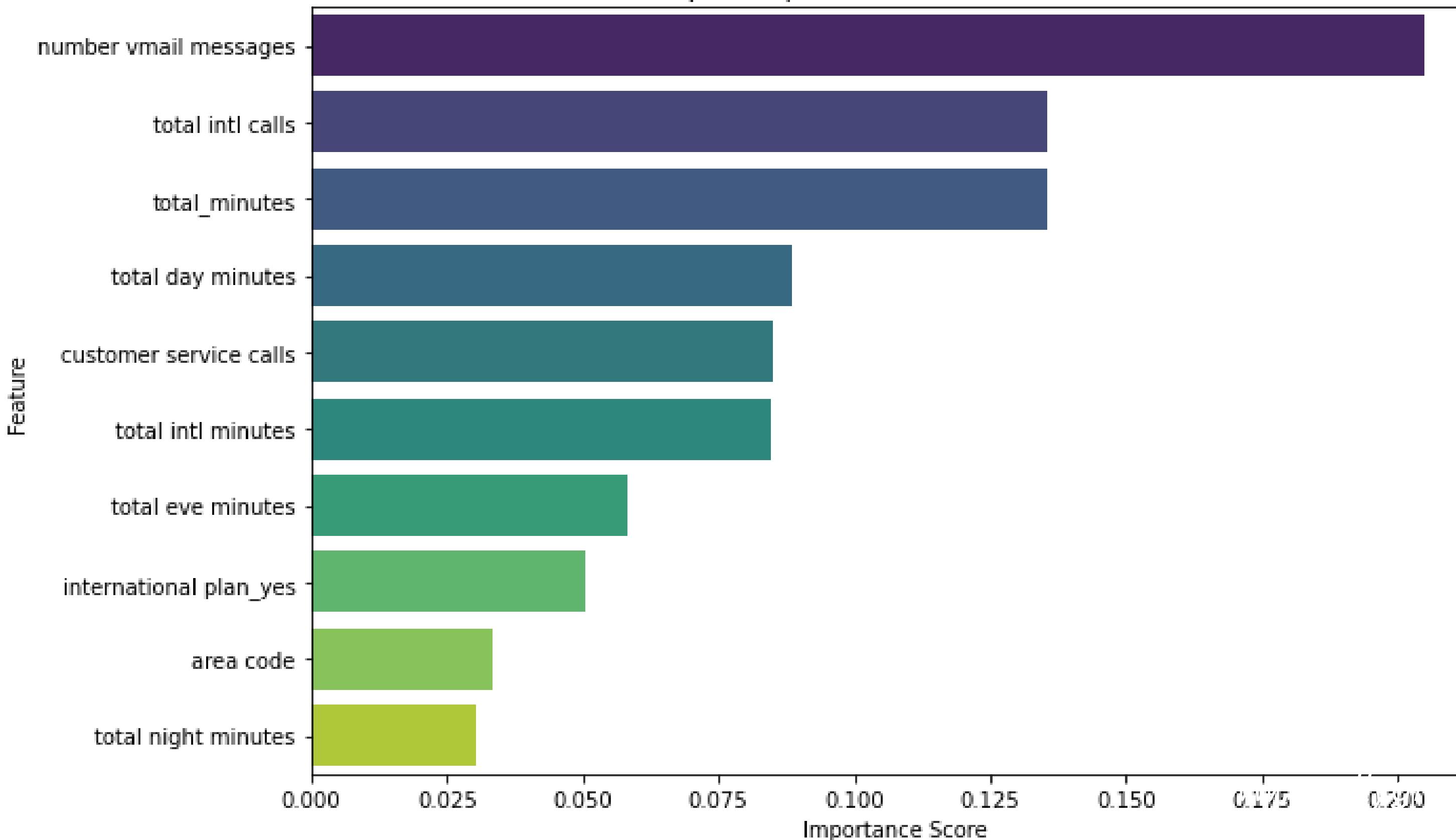
- XGBoost performs best at separating churners vs. non-churners

## Important Features.

1. Voice Mail Plan (Yes)
2. Customer Service Calls
3. International Plan (Yes)
4. Total Day Minutes & Messages

# FEATURE IMPORTANCE

Top 10 Important Features (XGBoost)



# MODELS TESTED

Model	Accuracy	AUC Score
• Logistic Regression	77%	0.81
• Decision Tree (Untuned)	88%	0.82
• Decision Tree (Tuned)	92%	0.83
•  XGBoost	95%	0.90



# RECOMMENDATIONS



- Promote voicemail usage to boost customer engagement and reduce churn.
- Improve customer service to reduce dissatisfaction-driven churn.
- Re-evaluate international plans to address pricing or quality concerns.
- Use call behavior to segment users and tailor retention strategies.
- Design region-specific offers to address area-based churn trends.

# THANK YOU!

FOR YOUR ATTENTION