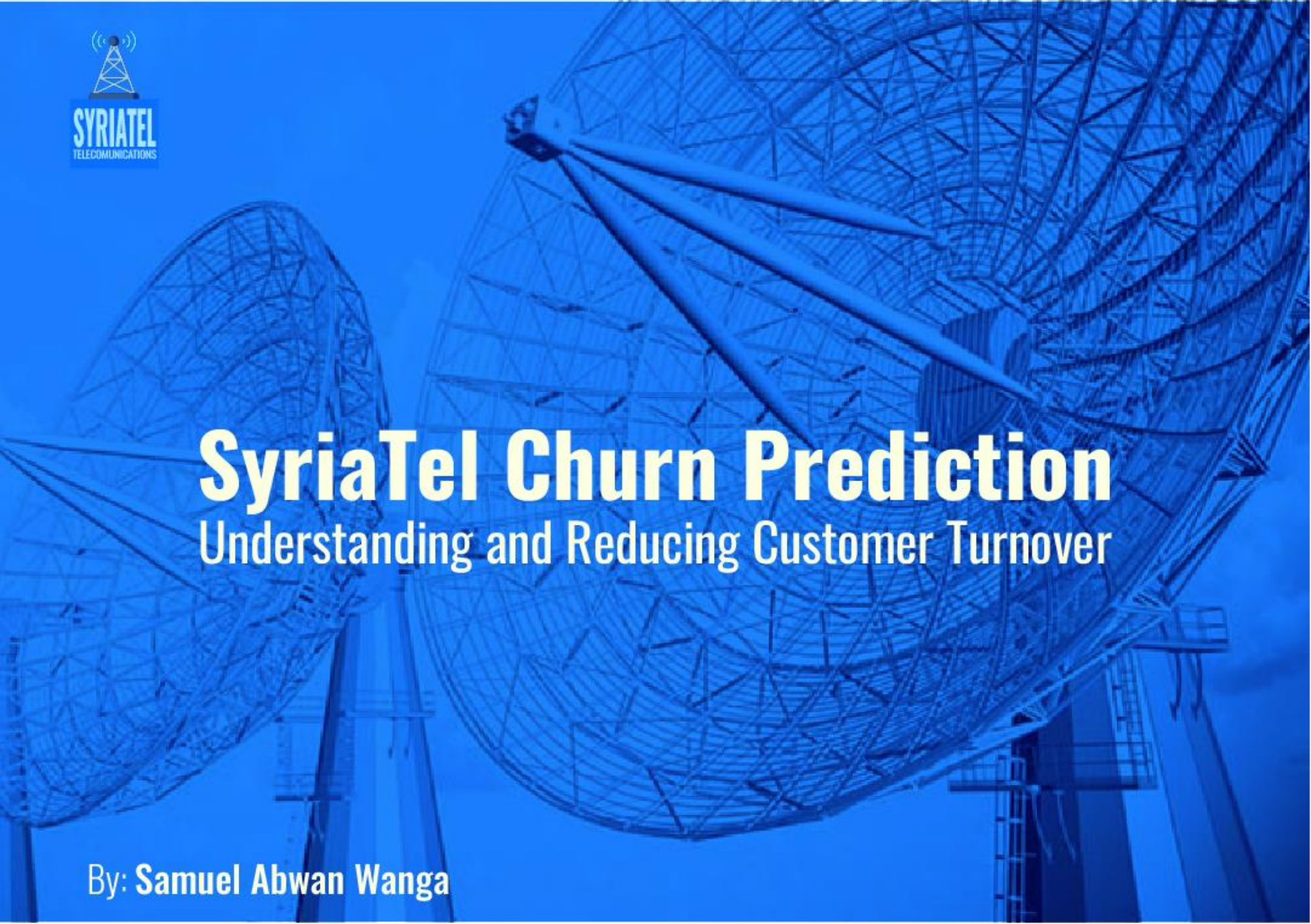


SyriaTel Churn Prediction

Understanding and Reducing Customer Turnover

By: **Samuel Abwan Wanga**

Project Goals:

- Predict which customers might leave SyriaTel.
- Understand why customers leave.
- Help SyriaTel keep more customers.

Value to Stakeholders:

- Reduce revenue loss from customer turnover.
- Improve customer satisfaction.

Business Understanding

- SyriaTel is facing competition and some customers are leaving, and studies show its more serious losing a customer than getting a new one.

Objective:

To use data to predict and prevent customer churn.

Data Overview

Data Source: **Kaggle**

Data Details:

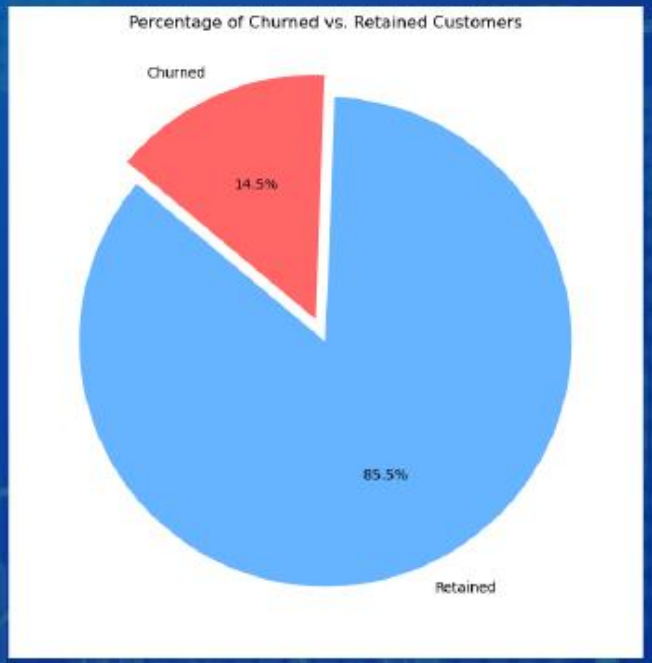
https://www.kaggle.com/datasets/becksddf/churn-in-telecoms-dataset

Inside the dataframe there is information on **3,333** customers. This comes with alot of features like service usage, international plan and churn status etc.

Detail | Compact | Column — 21 of 21 columns

state	account le...	area code	phone nu...	internatio...	voice mail...	number v...	t
KS	128	415	382-4657	no	yes	25	265
OH	107	415	371-7191	no	yes	26	161
NJ	137	415	358-1921	no	no	0	243
OH	84	408	375-9999	yes	no	0	299
OK	75	415	330-6626	yes	no	0	166
AL	118	510	391-8027	yes	no	0	223
MA	121	510	355-9993	no	yes	24	218
MO	147	415	329-9001	yes	no	0	157

Percentage of Churn vs retained customers

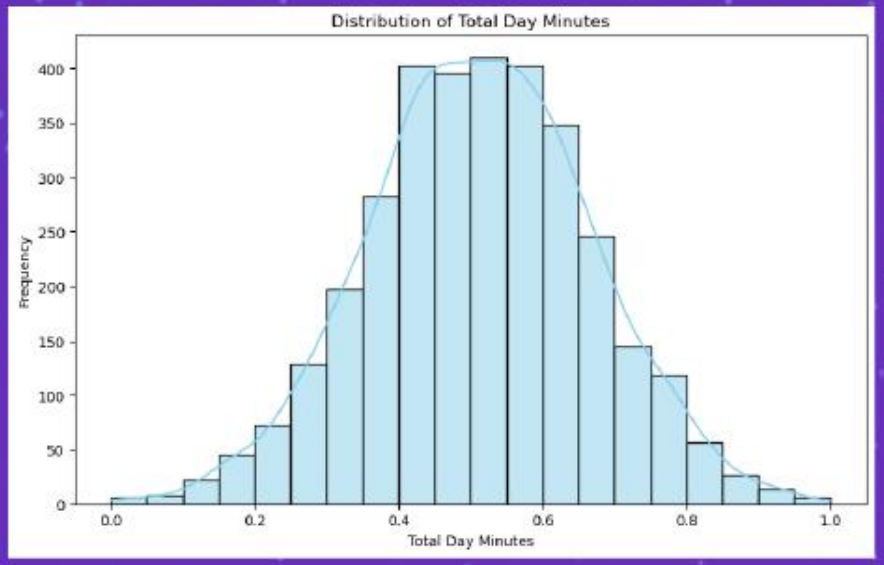


Key Insights from Data

Churn Rate: 14.5% of customers have left.

Meaning 483 out of 3,333 people terminated their contract with SyriaTel.

Customer Behavior



- The histogram shows a peak around moderate total day minutes.
- Alot of customers are within this range, suggesting that they use their phones moderately during the day.

Most Customers:

- Many fall into a group where they use their phones moderately during the day.
- Some of them churn (stop using the service), while others don't.

Less Common:

- Low Usage customers are less likely to impact churn significantly while high usage customers are more likely to churn.

Why high usage might lead to churn:

- High usage could mean like frequent calls, heavy data usage, overage charges.
- All these factors increase the likelihood of churn.

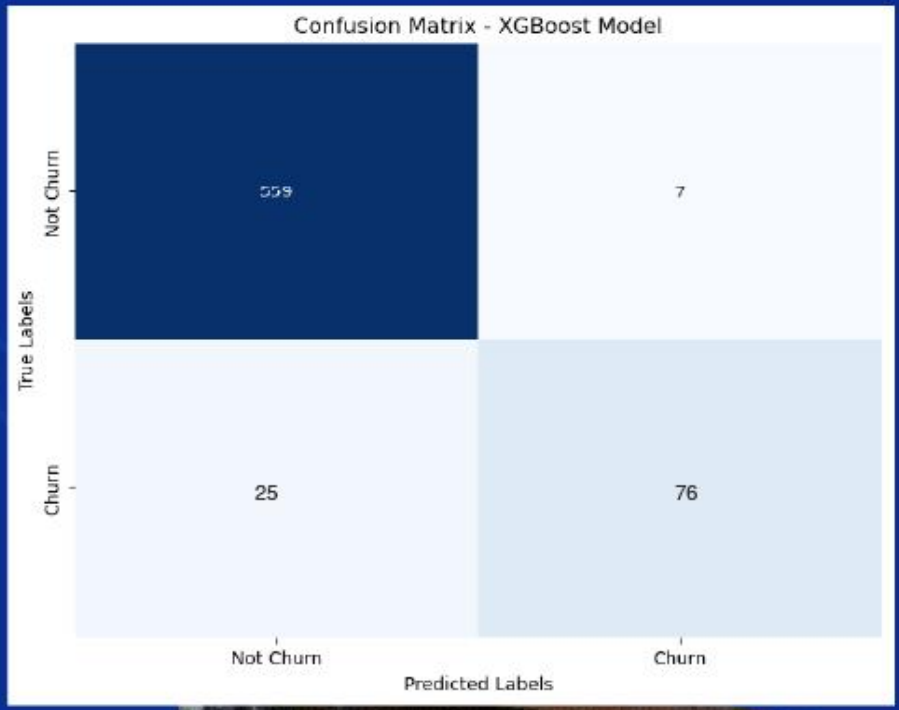
Predictive Model

Explanation:

1. **Input Data:** We the feed the data into our predictive model e.g **XGBoost Model**.
2. **Model or Algorithm:** The predictive model processes the input data and generates predictions based on its learned patterns and parameters.
3. **Prediction (Output):** The outcome produced by the model is based on the input data depending on the nature of the problem.

Model Results

Accuracy:
The **XGBoost model** correctly predicts churn **95.2%.**
As you can see on the Confusion matrix simplified to show correct vs. incorrect predictions.



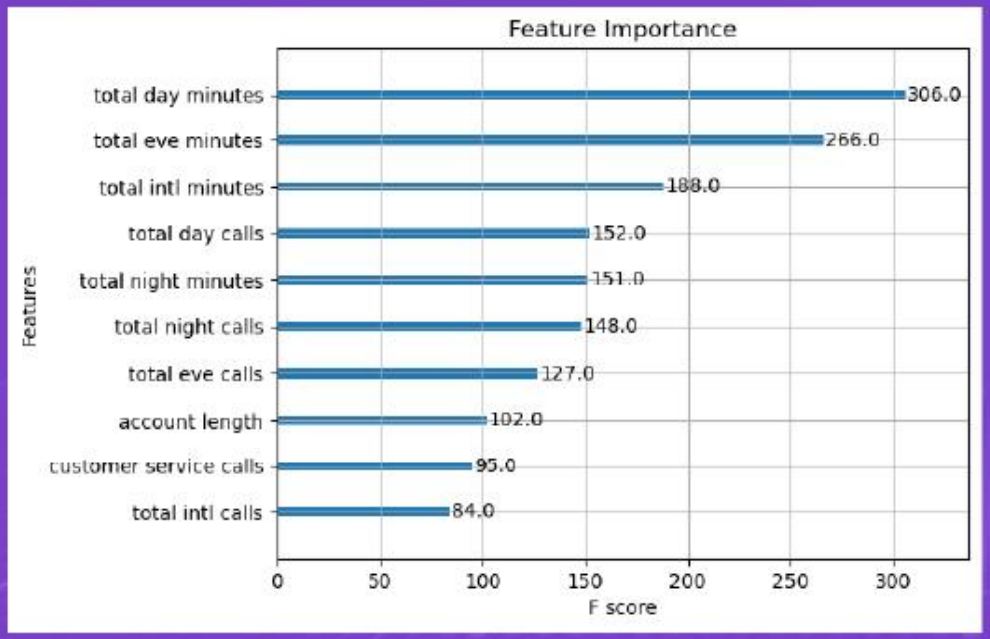
- **76** - Churn customers that the model correctly predicted as churn.
- **7** - Non-churn customers that the model incorrectly predicted as churn.
- **559** - Non-churn customers that the model correctly predicted as non-churn.
- **25** - Churn customers that the model incorrectly predicted as non-churn.

Important Factors

Key Factors:

Talking on the phone during the day. The more time you spend on calls, the more important this becomes for our prediction.

Bar chart of feature importance.



Here, **"total day minutes"** feature has the highest importance score (around 306.0).
This means that how much time customers spend on calls during the day significantly impacts whether they'll leave or stay with Syriatel service.

Recommendations

- **Proactive Engagement:**
Reach out to customers with high day minutes.
- **Improve Service Calls:**
Resolve issues quickly to prevent churn.

Conclusion

Summary:

- Predicting churn helps understand why customers leave.
- Actionable steps can reduce churn and increase satisfaction.
- When our model comes into play, say bye to losing money and customers.

Thank you for your time.