



# Churning Out A Telecom Solution

Quick Insights into  
customer attrition and a  
potential solution for  
SyriaTel

# Outline

- Business Problem
- The Data
- Methodology
- Results
- Recommendations



# Business Problem

Determine why SyriaTel is experiencing a 15% churn rate and propose a potential solution to halt the attrition.



# Data

The data contains a range of features mostly focusing on on hours of usage and charges experienced.

The largest finding when exploring data was an expected class imbalance between churners and loyal customers.



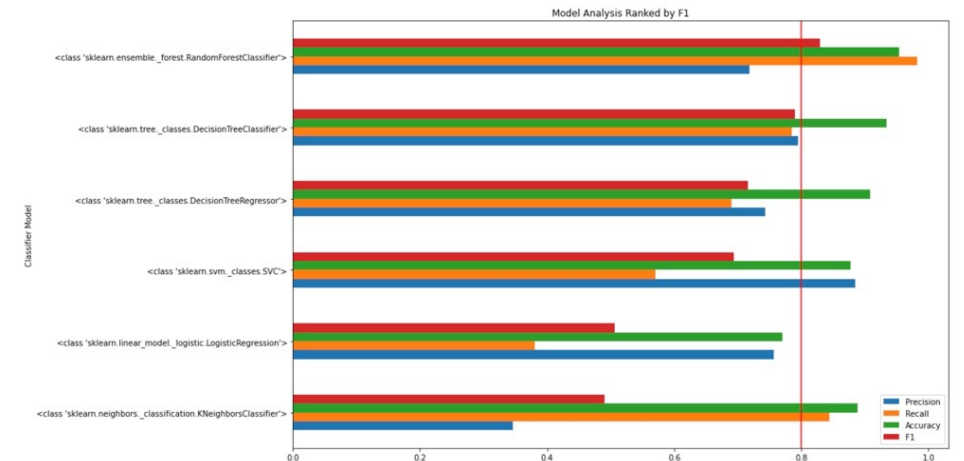
# Methodology

1. Overview of Business Understanding
2. Data Understanding
3. Data Preparation
4. Modeling
5. Evaluation



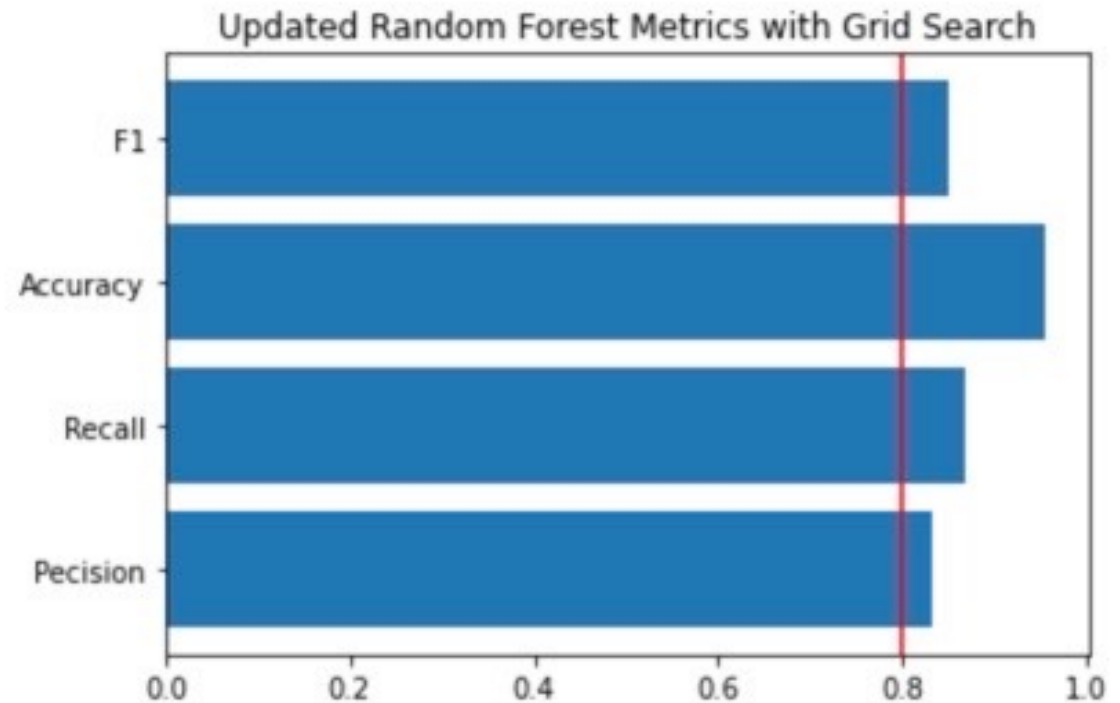
# Model Metrics

- Five Machine Learning Models were run in order to determine the most efficient classifier for the task
- Random Forest Classifiers stood out, scoring the highest initial F1 at ~83%
- This model was then isolated and optimized with grid search



# Final Model Metrics

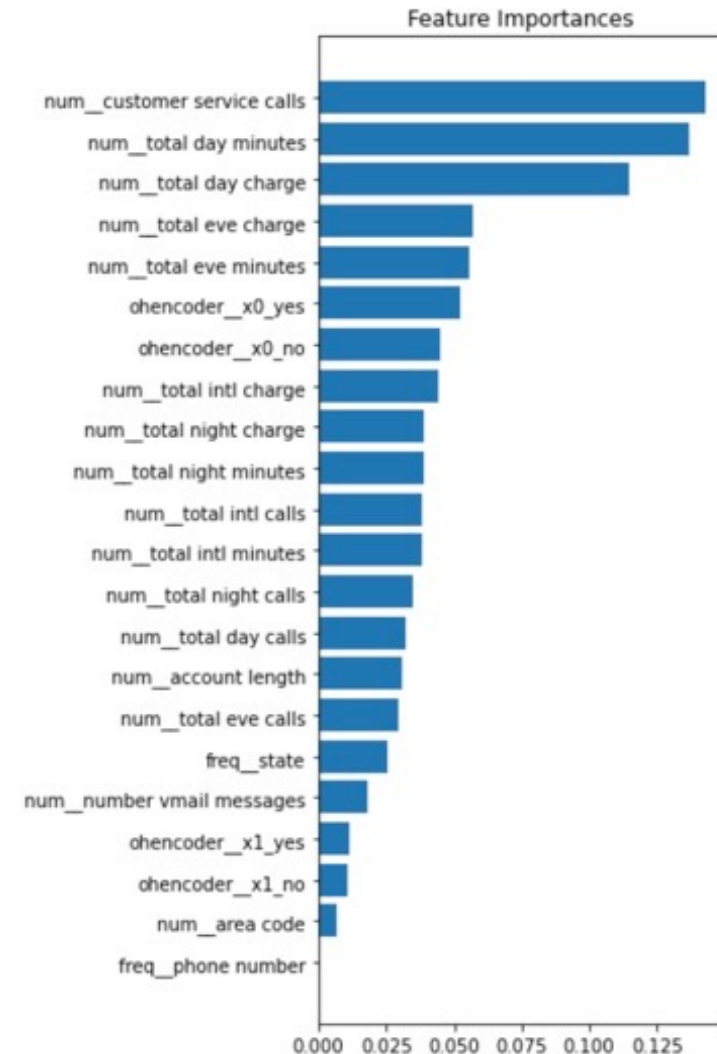
- Optimized Random Forest Metrics resulted in strong F1, Precision, Recall and Accuracy Scores:
- Model Test Precision: 0.83
- Model Test Recall: 0.87
- Model Test Accuracy: 0.95
- Model Test F1: 0.85





# Feature Importance Analysis

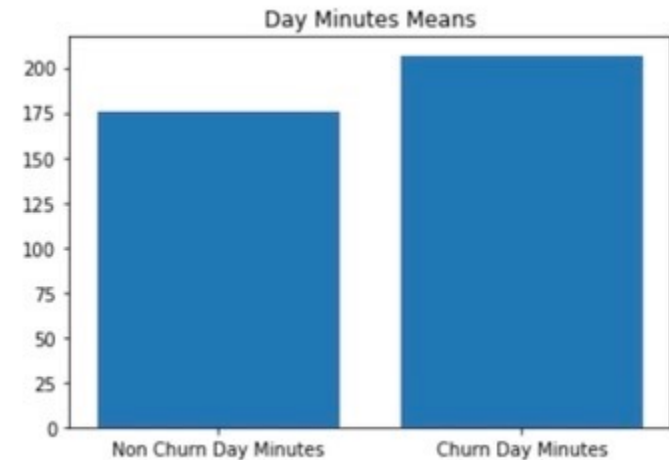
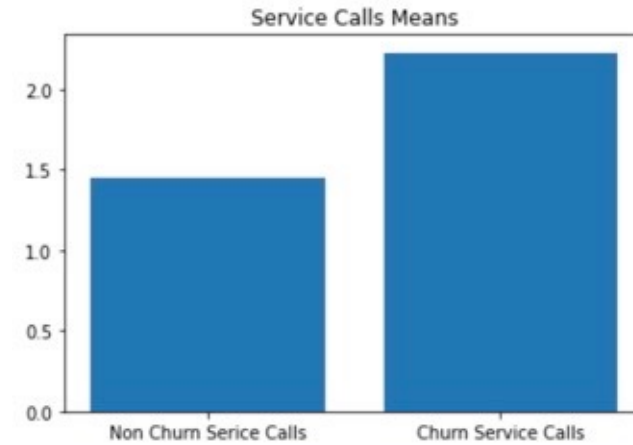
- The Model highly prioritizes the total number of Service Calls, Day Minutes and Day Charges
- This clearly indicates that customers with high usage are not having their needs met
- This also highlights that SyriaTels most valuable customers are the customers that are churning out





# Usage and Customer Service Calls by User Type

- Churners were 16% more active than their Non Churner counterparts
- Churners were also X% more likely to call customer service than their Non Churner counterparts



# Recco / Deployment:

- Establish a higher tier of customer service for high usage customers
- Scale charges as users enter the 16<sup>th</sup> percentile of usage in order to stifle churning and retain high value customers

