SYRIA TEL CUSTOMER CHURN ANALYSIS

Presentation Slides

Business Overview

- Welcome to my presentation on predicting customer churn in Syria Tel, a telecommunications company.
- I have undertaken a machine learning project to develop a model that can identify customers who are likely to churn.

Business and Data Understanding

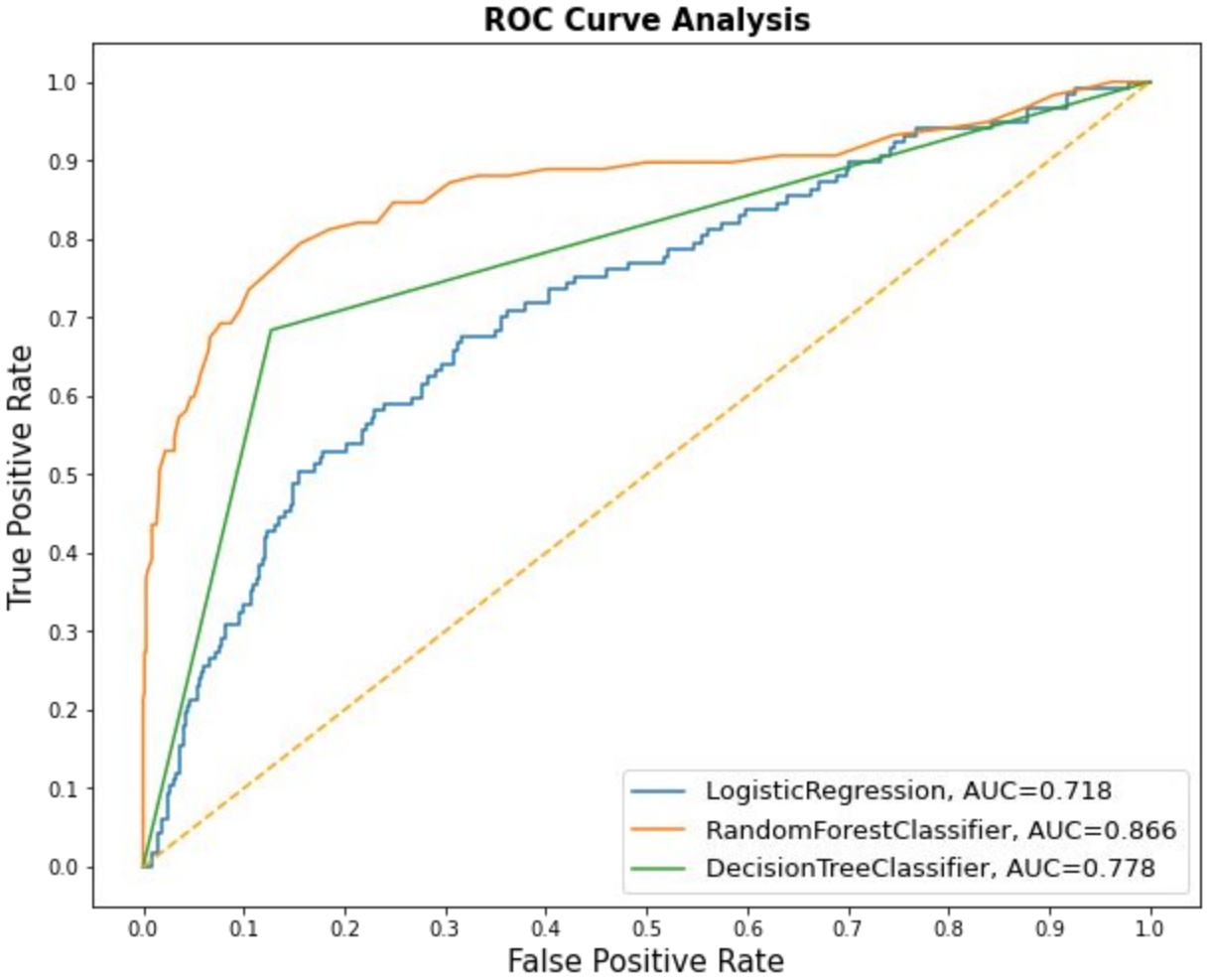
- Before diving into the project details, let's first understand the importance of addressing customer churn for Syria Tel.
- Customer churn refers to when customers discontinue their services, which can lead to revenue loss.
- My goal is to help Syria Tel identify potential churners and take proactive measures to retain them.

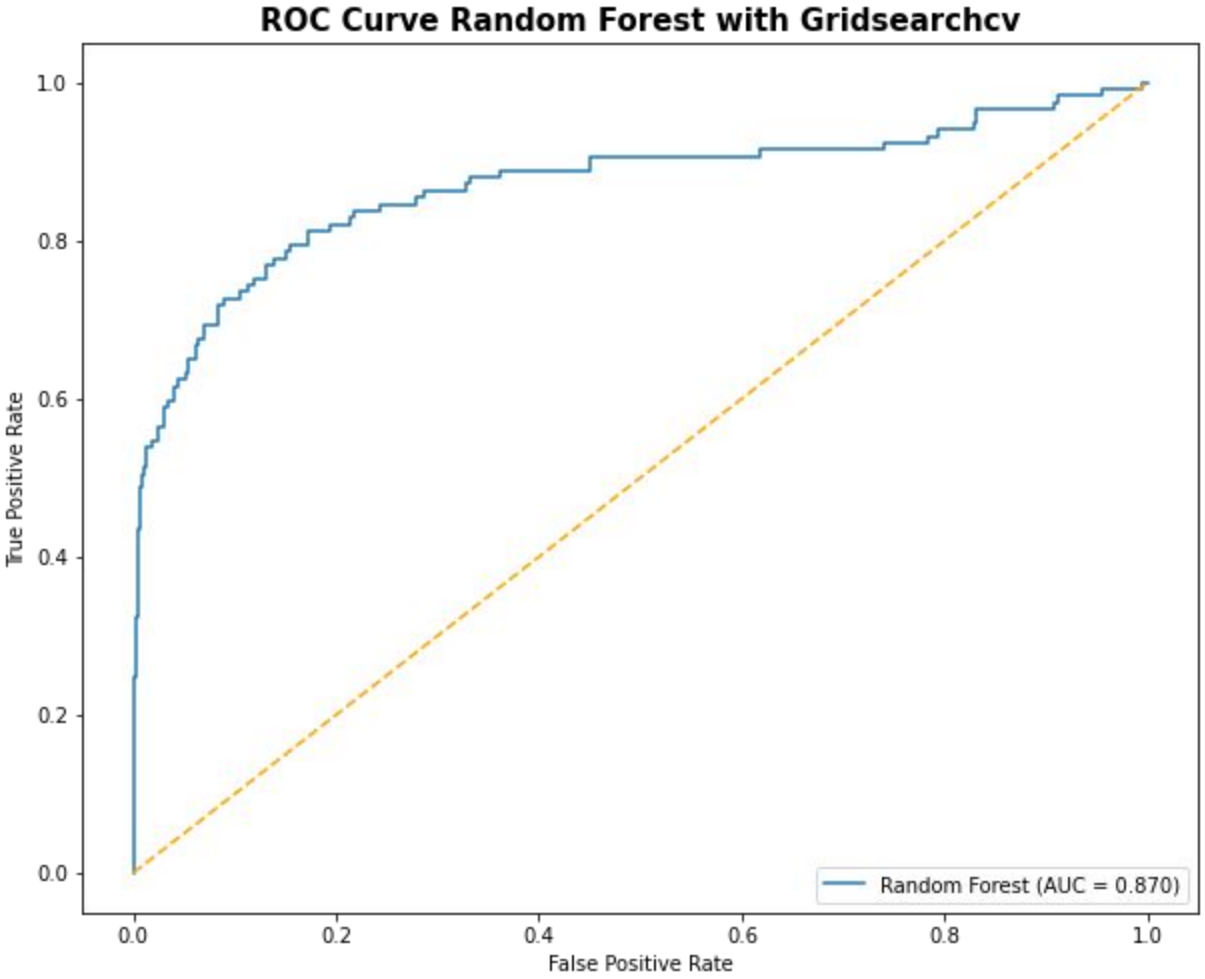
Modeling

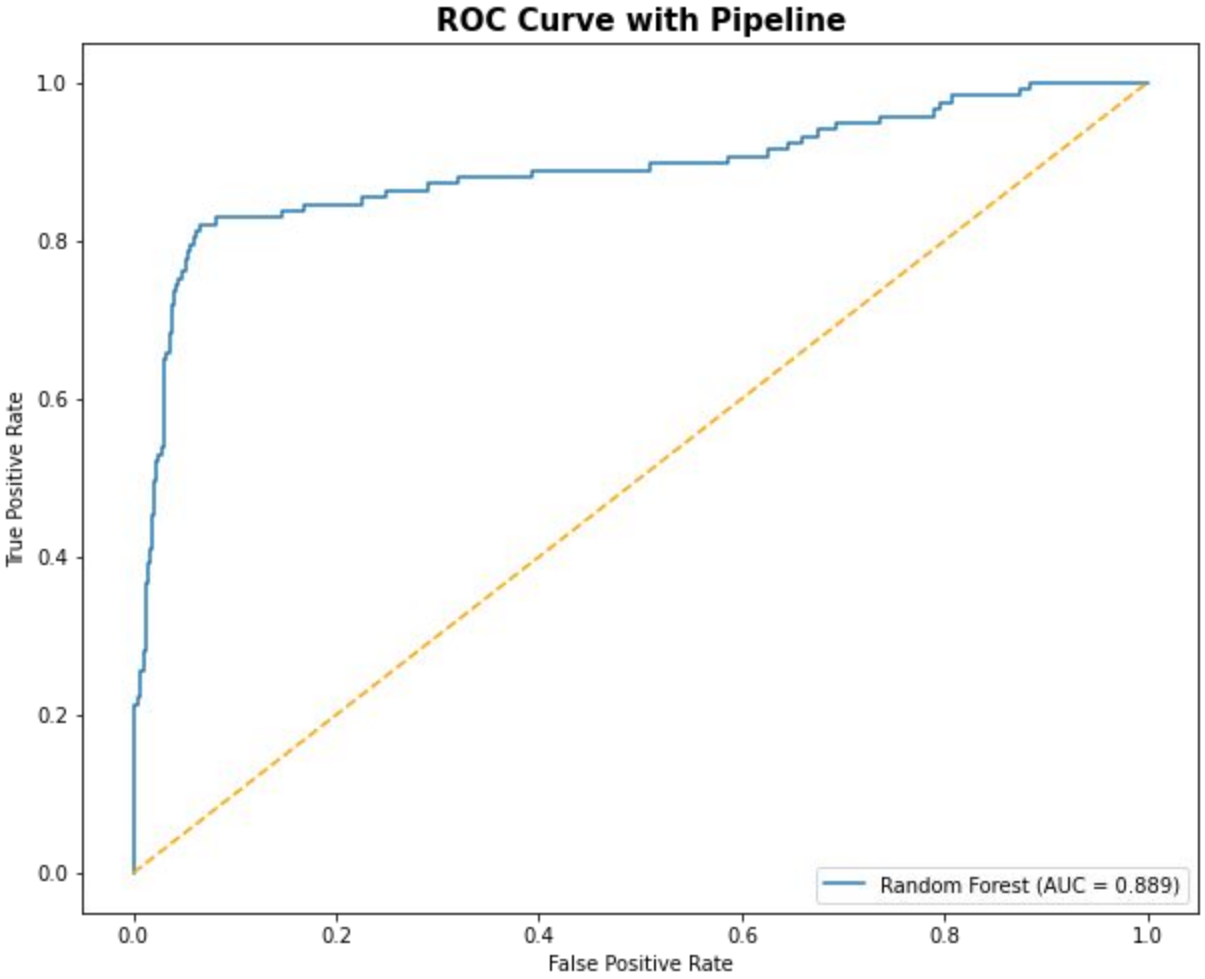
- To achieve my goal, I have developed several predictive models, including logistic regression, decision trees, and random forest.
- I have also tuned random forest for model optimization.
- These models analyze customer data, such as usage patterns, billing information, and demographics, to predict the likelihood of churn.

Evaluation

- I have evaluated the performance of each model using various metrics, including accuracy, F1 score, recall, and precision.
- Additionally, I have utilized the area under the receiver operating characteristic curve (AUC/ROC) as my primary metric to assess the models' predictive power.


ROC Curve Analysis
True Positive Rate
False Positive Rate
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
LogisticRegression, AUC=0.718
RandomForestClassifier, AUC=0.866
DecisionTreeClassifier, AUC=0.778


ROC Curve Random Forest with Gridsearchcv
True Positive Rate
False Positive Rate
0.0
0.2
0.4
0.6
0.8
1.0
Random Forest (AUC = 0.870)


ROC Curve with Pipeline
True Positive Rate
False Positive Rate
0.0
0.2
0.4
0.6
0.8
1.0
Random Forest (AUC = 0.889)

Recommendations

- Based on my analysis, I recommend utilizing the random forest model with a pipeline and grid search approach, as it achieved the highest AUC value of 0.889.
- This model can effectively identify potential churners and provide valuable insights for targeted retention strategies.

Next Steps

- Moving forward, I suggest integrating the recommended model into Syria Tel's customer management system.
- This will enable real-time predictions and facilitate timely interventions to prevent churn.
- It is also important to continuously monitor the model's performance and periodically update it with new data to maintain its accuracy.

Thank you

- I would like to express my gratitude to Syria Tel for the opportunity to work on this project.
- I believe that my predictive model will significantly contribute to reducing customer churn and improving customer retention strategies.
- I am confident that this data-driven approach will lead to positive outcomes for Syria Tel and its valued customers.

GITHUB LINK:

https://github.com/Wainich/Customer-Churn-Analysis/tree/main