

Group 1 Project:



Team Members

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Introduction

Telecommunications Companies provide essential services such as internet, calls and messaging by building and maintaining communication networks. They earn revenue from subscription and usage fees.

SyriaTel, a Telecom provider offering call, text and data services, operates in a high performing sector that supports economic growth and offer stable demands, making it attractive to investors.

However, the industry is highly competitive with easy customers switching, creating a high risk of churn that can reduce revenue and impact investor confidence if not effectively managed.

Objectives

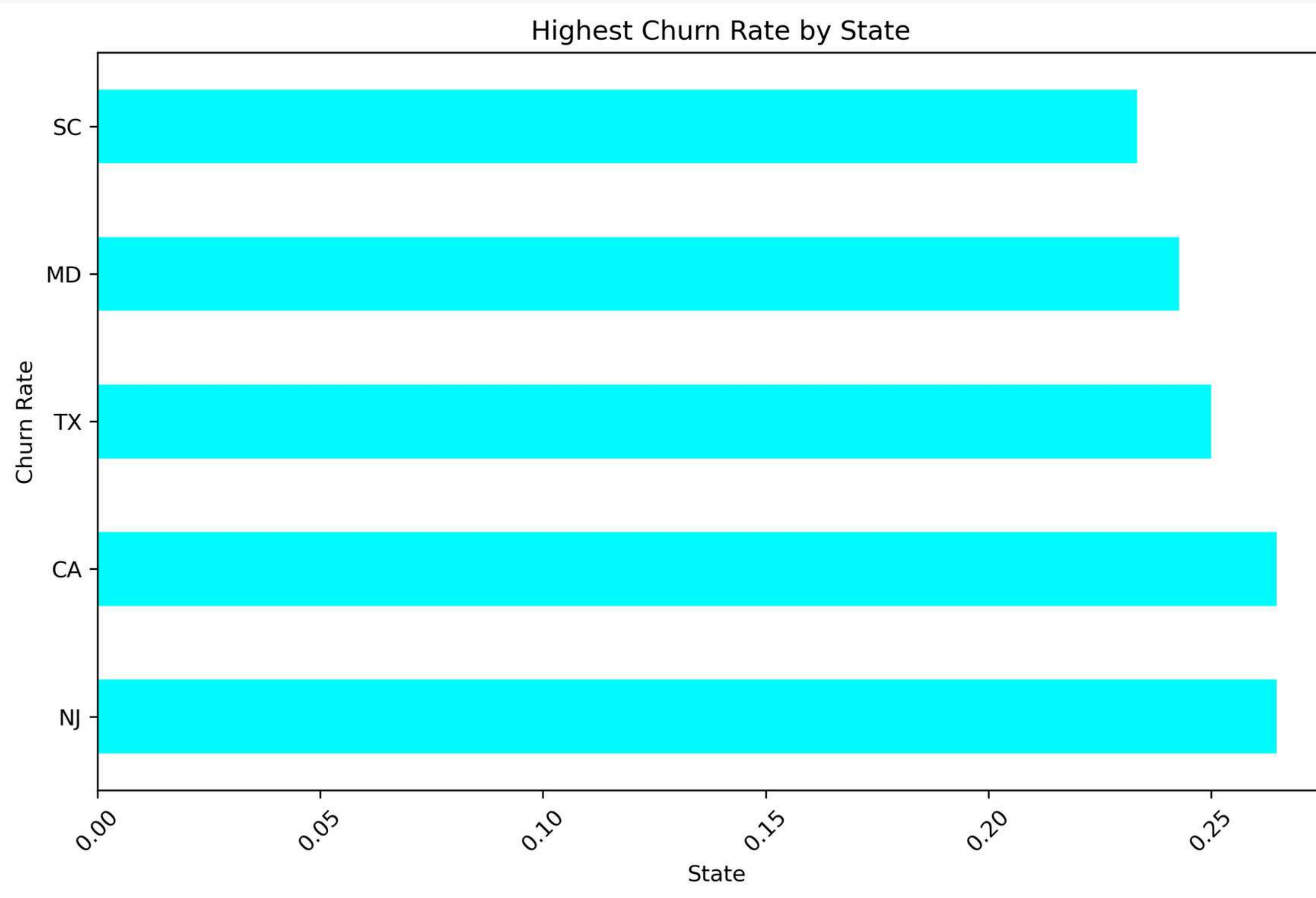
Main Objectives

To predict customer churn and provide insights that help SyriaTel keep its customers and reduce revenue loss.

Specific objectives

- To develop a model that predicts whether a customer will churn or stay.
- To identify the key factors eg. call charges, service quality or customer complaints that influence the probability of a customer to churn or not to churn.
- To provide insights that SyriaTel can use to design strategies for reducing churn and improving customer satisfaction.
- To determine the state with the highest churning rate.

Highest Churn Rate by State



California (CA)-Has a 26.5% Churn Rate

New Jersey (NJ)-Has a 26.5% Churn Rate

Texas (TX)-Has a 25% Churn Rate

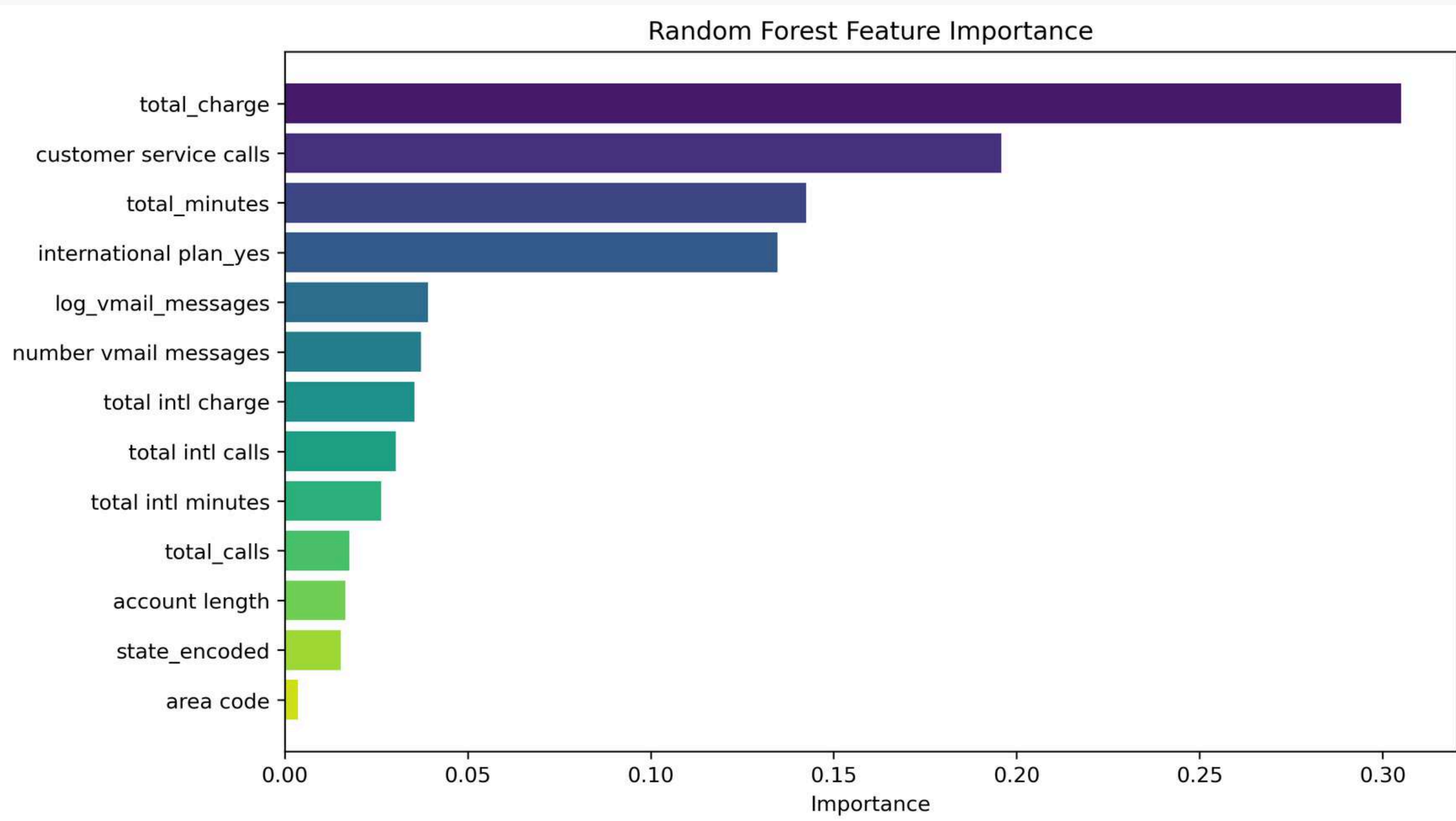
Maryland (MD).-Has a 24.3% Churn Rate

South Carolina (SC)-Has a 23.3% Churn rate.

Factors that affect Churn Rate

- **Frequent Customer Calls**
- **International Plans**

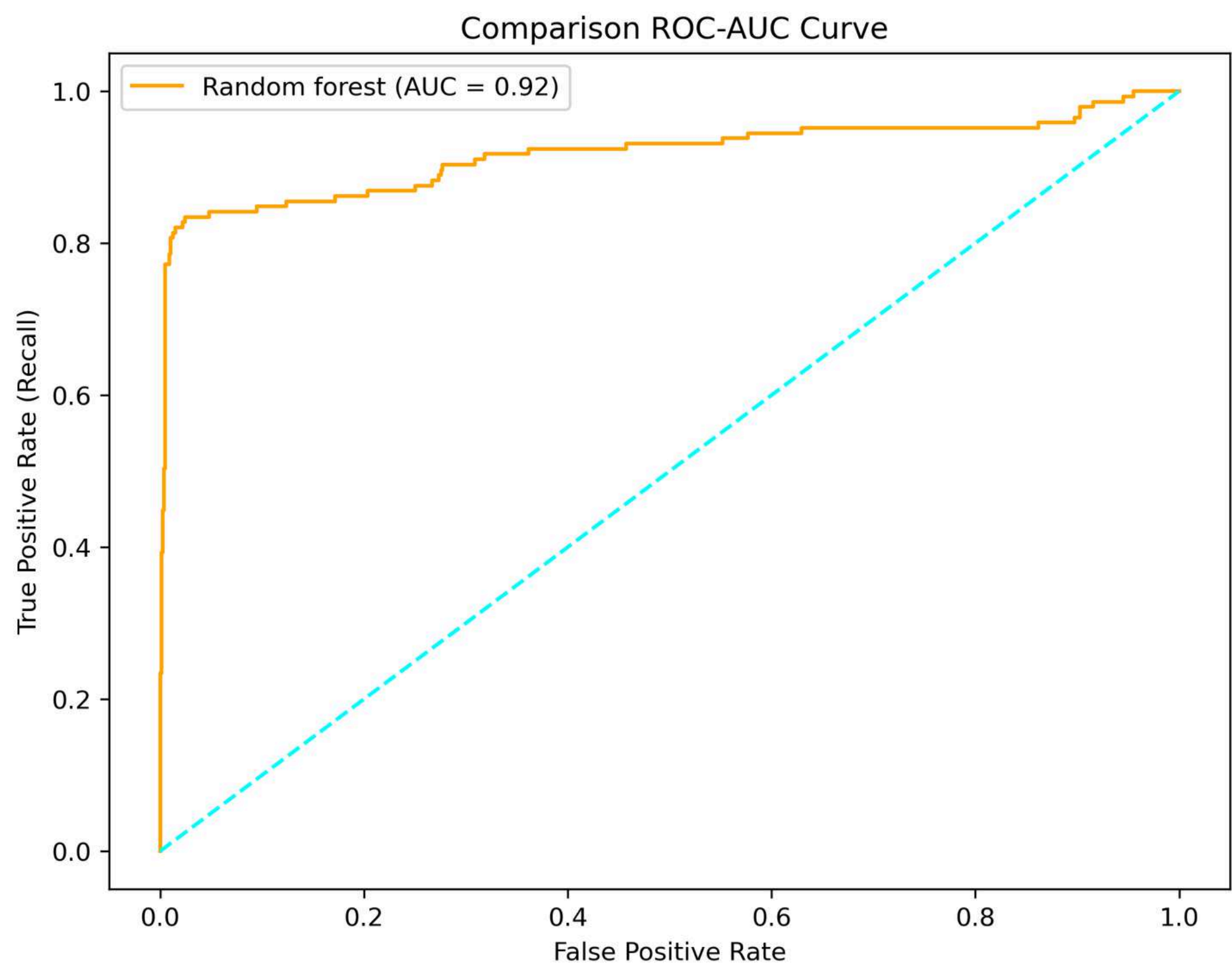
Random Forest Feature Importance



Factors that Drive High Churn Rates

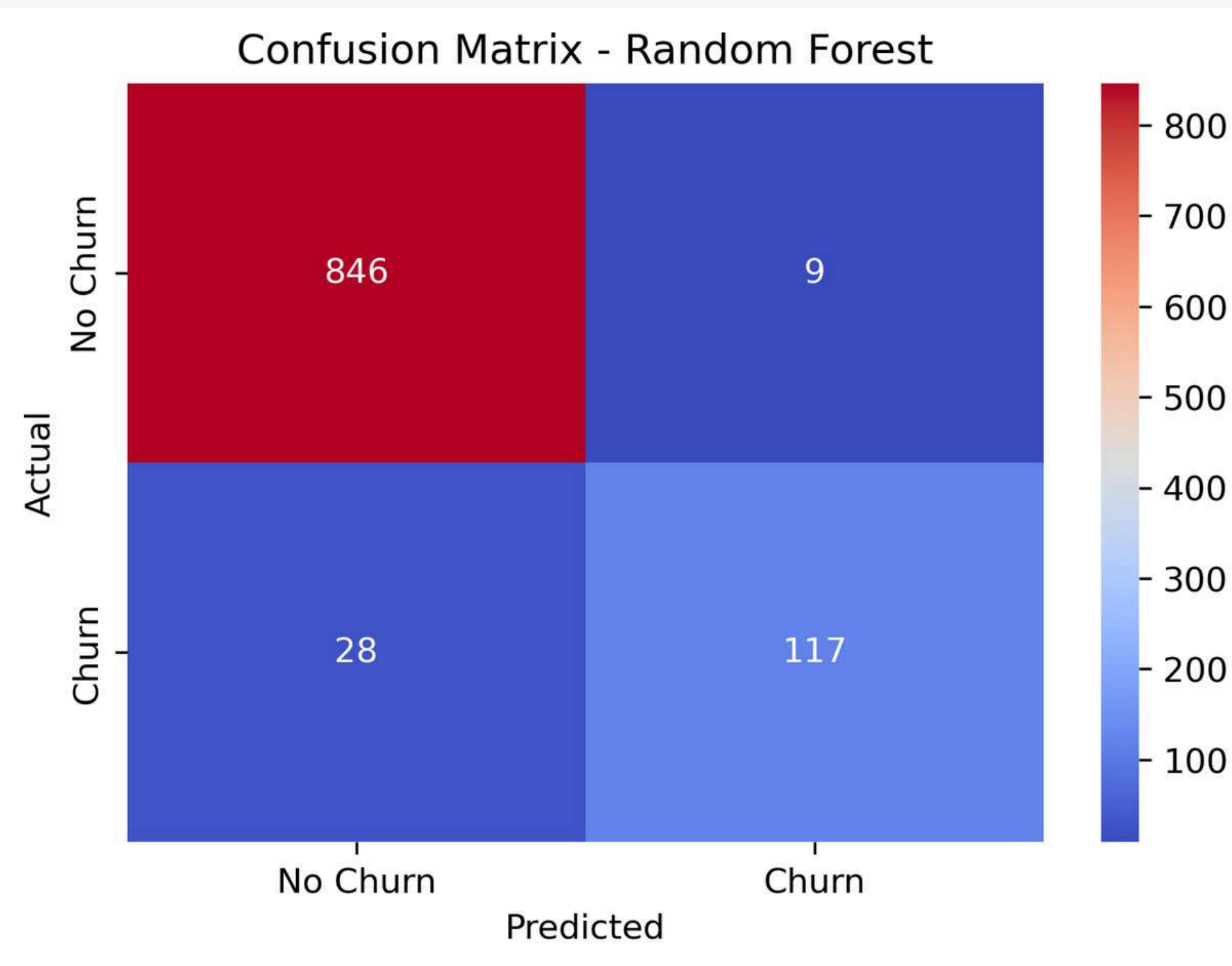
- **High Charges-Solution:** implement a better pricing model with more transparent billing.
- **Frequent Customer Service Calls-Solution:** Provide Self-Servicing Options.
- **International Plans-Solution:** provide special bundles for frequent international callers.

Comparison ROC-AUC Curve



- ROC-AUC measures the model's ability to discriminate between churners and non-churners across all possible thresholds.
- Random Forest model has achieved a high ROC-AUC score, indicating that it is an effective model for predicting customer churn.

Confusion Matrix-Random Forest



Interpretation:

- True Negatives (TN) = 846
Customers who did not churn and were correctly predicted as No Churn.
- False Positives (FP) = 9
Customers who did not churn but were incorrectly predicted as Churn.
- False Negatives (FN) = 28
Customers who churned but were incorrectly predicted as No Churn.
- True Positive (TP) = 117
Customers who churned and were correctly predicted as Churn.

RECOMMENDATIONS

- Stakeholders should focus on states with highest churn NJ(New jersey) and CA(Carlifonia) with special offers, loyalty programs, or improved customer service inorder to retain the customers.
- High charges, frequent customer service calls and international plans are the key factors driving churn. By targeting retention efforts to these customers, the company can maximize revenue retention.
- Stakeholders should de-priotize Voicemail usage, account length, state, and area code because they have minimal predictive value when working on interventions.
- Stakeholders should investigate complaints or service issues in high-churn states to reduce dissatisfaction and also pay attention to areas that are reported by customer complaints to increase customer satisfaction .
- Stakeholders should relocate resources to higher-risk states such as New Jersey, California ,Texas among others since churn is low in those states and replicate strategies used in those states to improve others.

Conclusion

In conclusion, in order for SyriaTel to have an competitive advantage in the Telecommunication Industry, it needs to solve the Key factors that drive churn which are high charges, customer service calls and international plans that affect various states in which the solution is through special offers and improved customer service.

Thank You