Customer Churn Prediction Project

An in-depth analysis and predictive modeling

Overview

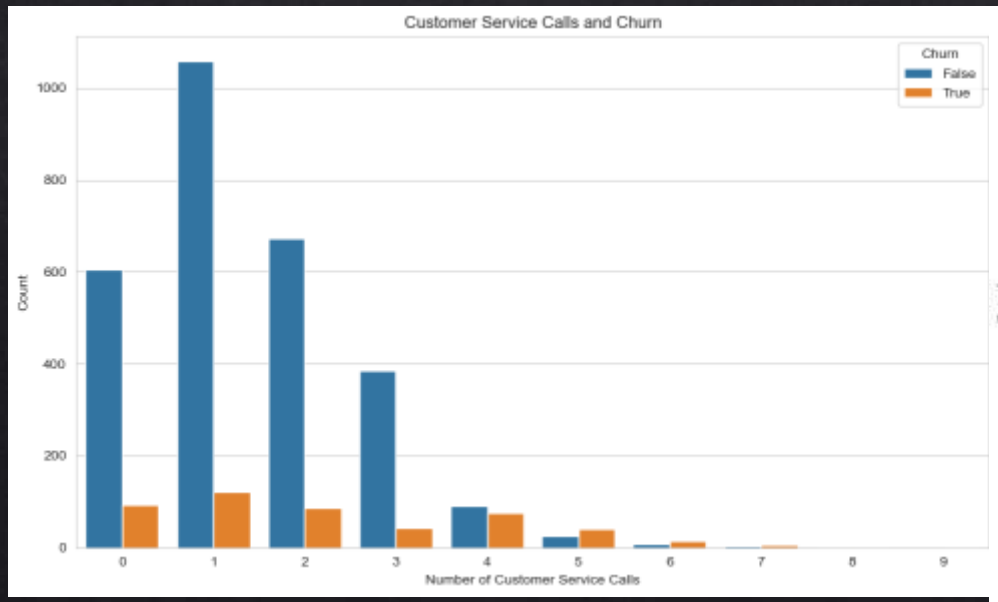
- This presentation provides an overview of our project aimed at predicting customer churn. We cover the business and data understanding, modeling approach, evaluation of the model, and conclude with recommendations and next steps.

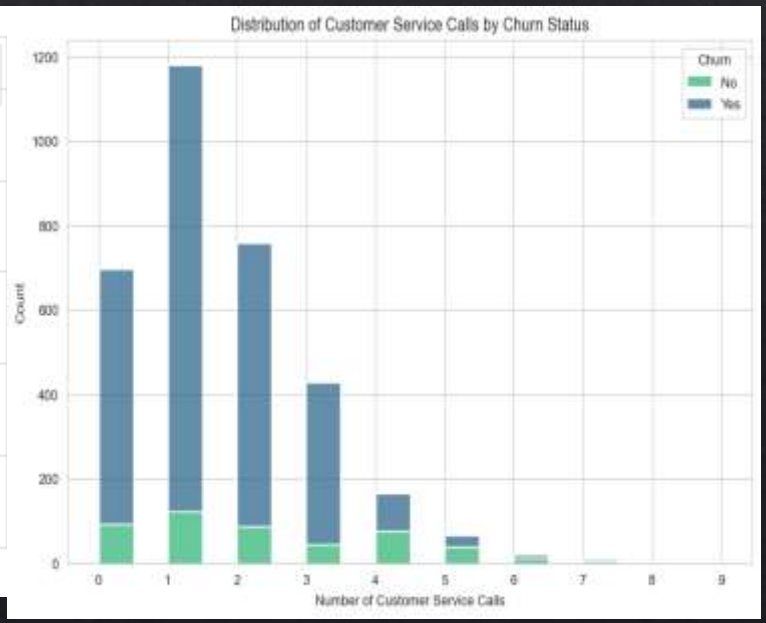
Business and Data Understanding

- The project focuses on identifying factors leading to customer churn. Using a dataset with various customer attributes, we aim to understand patterns and behaviors that indicate a higher likelihood of churn.

Modeling

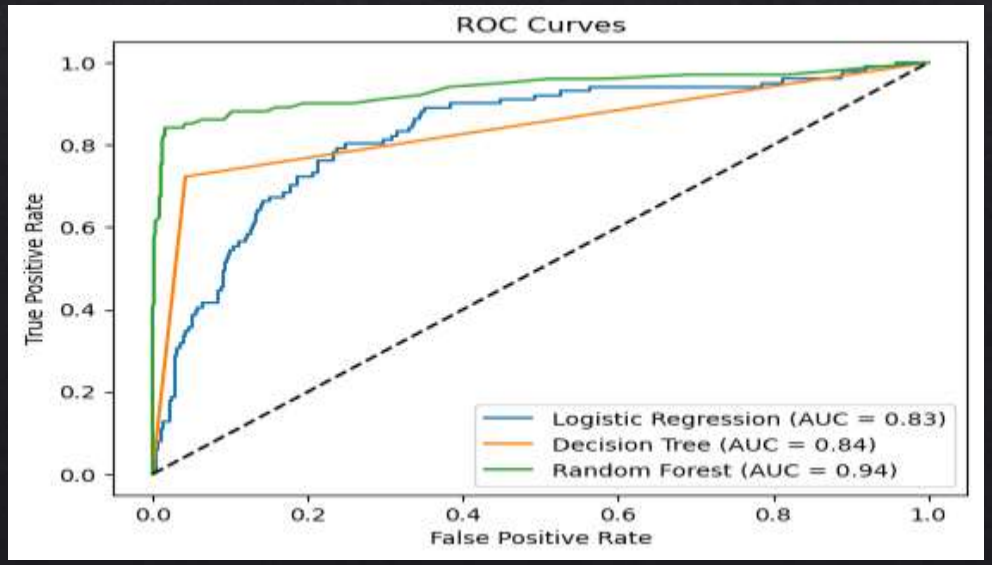
- A Random Forest Classifier was employed to predict customer churn. The model was trained on a subset of the data, with features including call charges, plan subscriptions, and customer service calls among others.





ROC Curves

- Receiver Operating Characteristic (ROC) curves are useful for visualizing the performance of binary classifiers. A ROC curve plots the true positive rate against the false positive rate at various threshold settings. The area under the curve (AUC) can also be used as a summary of the model's ability to distinguish between the positive and negative classes.



Evaluation

The model demonstrated strong predictive performance with an accuracy of 94.3% and a ROC-AUC score of 0.84.

The Random Forest model significantly outperforms the Logistic Regression model across all metrics, indicating a strong ability to predict customer churn. The improvement is particularly notable in the recall (69.31%) and F1 score (78.65%), suggesting that this model is much better at identifying true positive cases i.e. correctly predicting customers who will churn

Recommendations

- Based on the analysis, we recommend revising pricing strategies for day-time calls, offering special packages for heavy users, improving customer service, and providing competitive rates for international plans to reduce churn.

Next Steps

- Further analysis could explore deeper customer segmentation and personalized retention strategies. Additionally, refining the model with more data and advanced techniques could enhance predictive accuracy.

Thank You

- Thank you for your attention. We look forward to your questions and feedback.