

SYRIATEL CUSTOMER CHURN



EJIDIAH KANYI



OBJECTIVES

- ◆ To predict customer attrition for SyriaTel using historical data and a binary classification model.
- ◆ To extract actionable insights for tailored retention strategies, enhancing customer satisfaction and bolstering SyriaTel's retention efforts.

PROBLEM STATEMENT

- ◆ SyriaTel wants to anticipate disengagement from customers in order to minimize any income loss. The goal of the research is to develop a prediction tool for identifying consumers who are at risk by examining consumption patterns and historical data. In order to prevent future client loss and maintain financial stability, targeted retention programs will be put into place.

MODELS USED

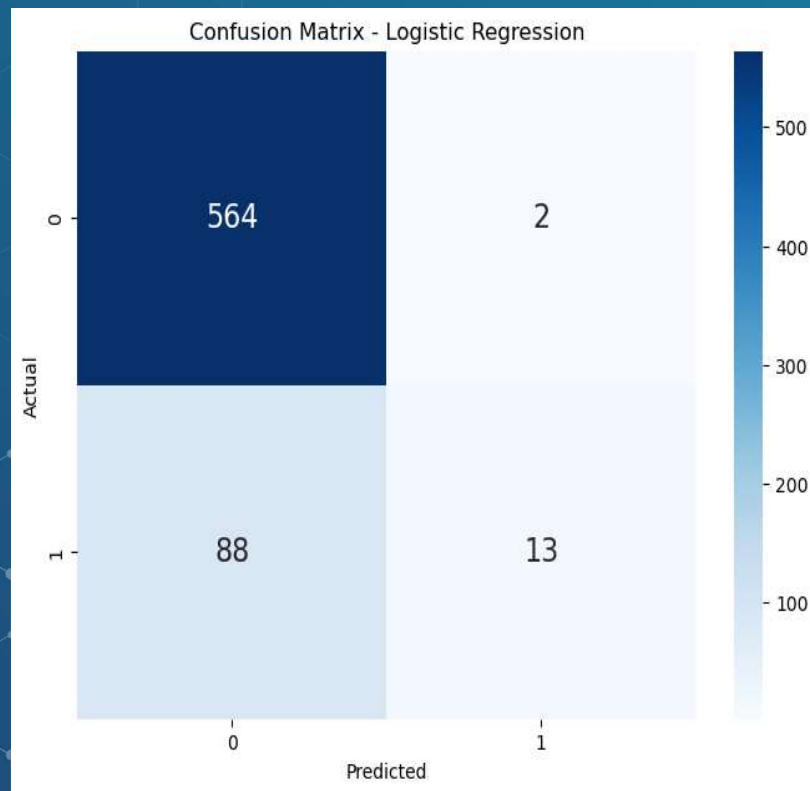
- Logistic Regression Model (Baseline)
- Decision Tree Model
- Random Forest Model
- XGBoosting Model

MODELING



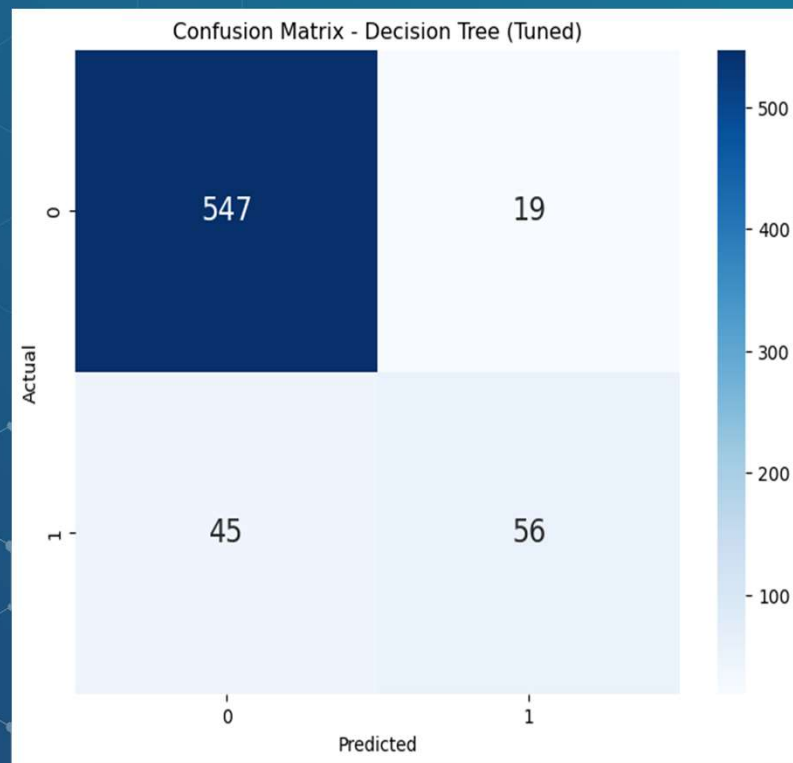
	ACCURACY	PRECISION	RECALL	F-SCORE
LOGISTIC REGRESSION	0.865	0.87	0.13	0.22
DECISION TREE	0.904	0.75	0.55	0.64
RANDOM FOREST	0.914	0.87	0.51	0.65
XGBOOSTING	0.916	0.81	0.58	0.68

LOGISTIC REGRESSION (BASELINE MODEL)



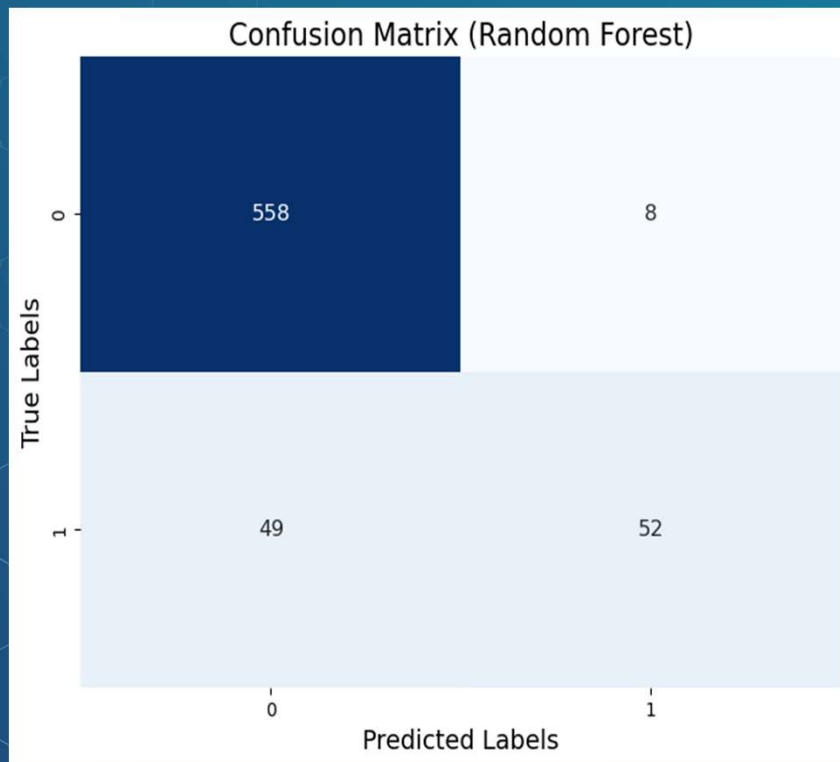
The model has a high accuracy due to the dominance of the negative class in the dataset. However, the low recall suggests that the model struggles to identify instances of the positive class. Further model improvement may be needed, especially if identifying positive instances is crucial for the business problem.

TUNED DECISION TREE



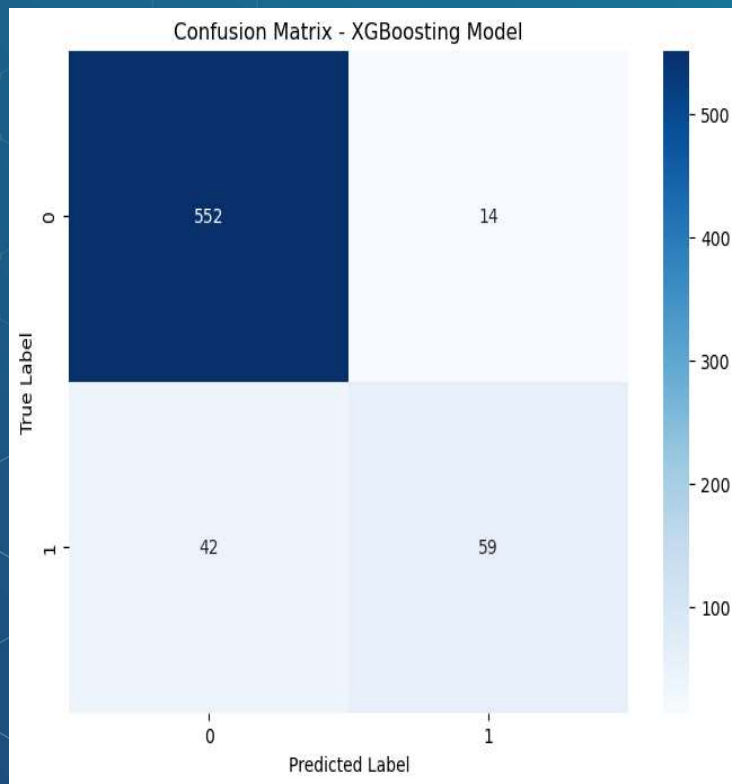
The model has a good accuracy rate and better recall compared to the Logistic Regression model. It seems to perform reasonably well in identifying instances of the positive class, but further analysis of precision and F1-Score is needed for a comprehensive evaluation.

RANDOM FOREST MODEL



The model demonstrates a high accuracy rate and decent precision. However, the recall is relatively lower, suggesting that the model may not be as effective in capturing all instances of the positive class. Further analysis and fine-tuning might be required to improve the model's performance, particularly in identifying instances of "Churn" (class 1).

XGBOOSTING MODEL



The model demonstrates a high accuracy rate and good precision. The recall is also relatively better compared to the Random Forest model, suggesting that the XGBoost model is more effective in capturing instances of the positive class. Further analysis and fine-tuning might still be considered to enhance the model's overall performance.

MODEL PERFORMANCE

- ◆ The logistic regression model, despite being the baseline model, demonstrated reasonable accuracy. However, it struggled with accurately predicting the positive class (churn).
- ◆ The decision tree model showed improvement after hyperparameter tuning, achieving a higher accuracy, especially in detecting churn cases.
- ◆ Both the Random Forest and XGBoost models outperformed other models, with XGBoost exhibiting the highest accuracy and better performance in identifying churn cases.

RECOMMENDATION

- ◆ Identify churn factors.
- ◆ Regularly evaluate the Decision Tree Model with new data for real-world effectiveness.
- ◆ Establish a feedback loop for ongoing strategy evaluation.
- ◆ Adopt the Tuned Decision Tree Model for superior performance, especially in identifying potential churn.

NEXT STEPS

- ◆ Establish a robust monitoring system to track the performance of implemented strategies.
- ◆ Foster collaboration between departments for success.
- ◆ Regularly update the models with fresh data to ensure their accuracy and relevance.

CONCLUSION

- Regular monitoring of competitors and adjustments to strategies based on market dynamics will be crucial for maintaining a competitive edge.
- A customer-centric approach, informed by data-driven insights, will be instrumental in building lasting relationships and loyalty.
- Consideration of flexible service plans and continuous innovation in services can cater to diverse customer needs and preferences.

THANKS!

