Executive summary report

Waze predictive model for identifying Churn customers

Overview

Waze's free navigation app makes it easier for drivers around the world to get to where they want to go. Waze's community of map editors, beta testers, translators, partners, and users helps make each drive better and safer. Waze partners with cities, transportation authorities, broadcasters, businesses, and first responders to help as many people as possible travel more efficiently and safely.

Problem

Waze is a navigational app that aims to help users reach places more easier by identifying best routes for most places. Waze is facing some troubles and is thinking about churn customers , so they decided to model ad implement a Machine learning predictive model to help them identify Churn customers before they churn ,so that they could have a chance to retain those customers.

Solution

The data team built one a RandomForest & XGBOOST classification models. The two models were used to predict on a held-out validation dataset, and final model selection was determined by the model with the best F1-score. The final model was then used to score a test dataset to estimate future performance.

Details

The two models architectures random forest (RF) and XGBoost—performed exceptionally well. The XGBOOST model had a better F1-score (0.851) and was selected as champion.

Performance on the test holdout data wasn't good enough for a model to be implemented , it requires more improvements

Upon investigating the feature importance for the champion model, we find that 14 out of 18 features are important to be used when training the model , this opens a way to try another round to train the champion model using the most important features.
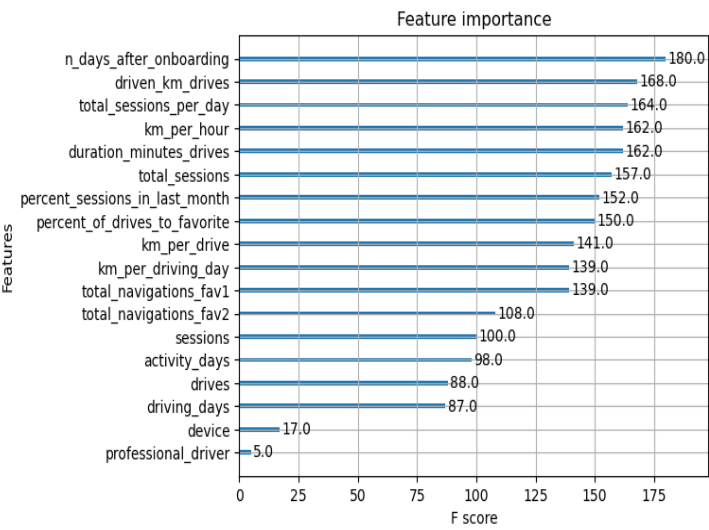
Confusion matrix for the champion XGBOOST model on test holdout data shows that the model is not good enough , it captures a lot of False positives and negatives .
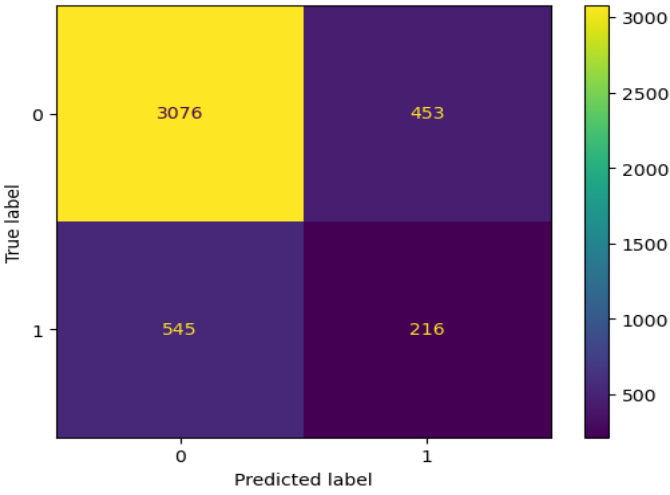

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Accuracy:0.767
Precision:0.323
Recall:0.284
F1 Score:0.302
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Next Steps

The model performed poorly on the test set , so Engineering more features , trying other algorithms and performing more advanced EDA might improve the model accuracy