Project: Waze Monthly User Churn Predictive Model
Random Forest and XGBoost Modeling

Overall Project Goal: Increase app growth by creating a predictive model that predicts Waze monthly user churn and accurately identifies who, when, and why users churn.

Memo Objective: This report offers an evaluation and insights derived from a comparison of a random forest and XGBoost predictive model performance to predict user churn. The goal was to identify a model with the highest predictive power to implement.

Results and Key Insights:

- The XGBoost model performed better than a random forest model, where both the F1 and recall scores were better in the XGBoost model. Both models had similar accuracy scores of 81%.
- Compared to the regression model built previously, the XGBoost model performs higher on all evaluation scores.
- Despite its better performance on all evaluation metrics, XGBoost model has a low recall score (ability to correctly identify user churn predictions) of 16%, as shown in the models' confusion matrix (Figure 1) implying it is not a strong predictor model.
- Figure 2 depicts the most important features in the XGBoost predictive model. Of the top 10 predictors, six are engineered features, which implies that engineered features offer valuable insights and will need to be implemented for future iterations of models.
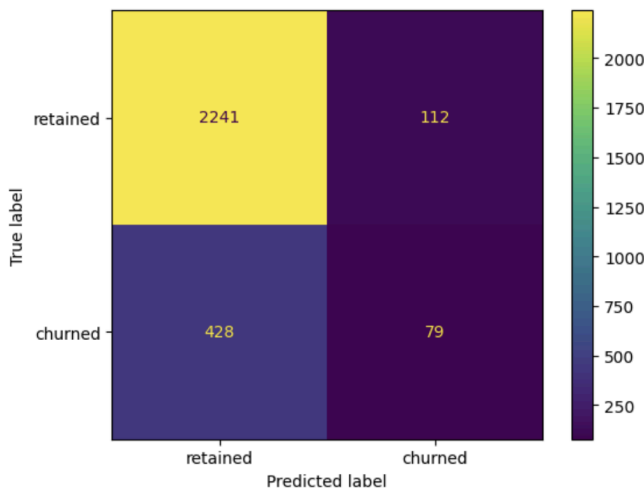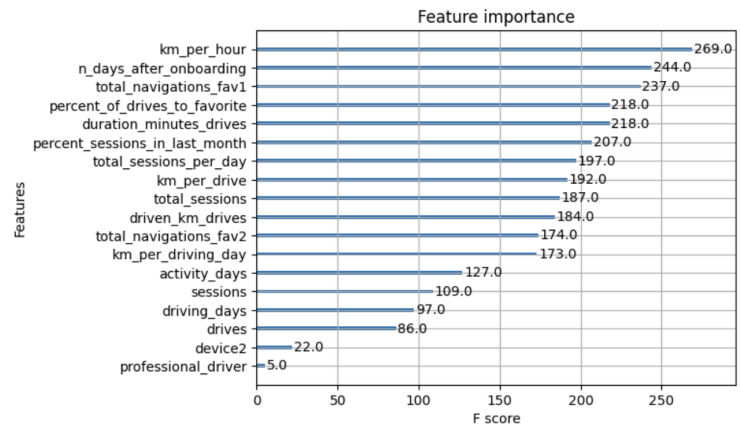

Figure 1

Figure 2

Recommended Next Steps Collect more user data and iterate this project process to identify and build a stronger user churn predictive model. Additional data may include user location (urban vs. non-urban) and user app interactions.