

Waze User Churn Project

Binomial Logistic Regression Model

Overview

- The data team at Waze has been asked to develop a machine learning model to predict user churn.
- Churn is defined as users who stopped using the Waze app or removed it from their device.
- The end goal is to reduce user churn, improve customer retention and to advance business growth

Objective

- Performing EDA and checking model assumptions
- Building a binomial logistic regression model and model evaluation
- Interpreting model results

Results

- The variable that most influenced the model's prediction was `total_navigations_fav1`. For every one unit increase in `total_navigations_fav1`, with other factors constant, the probability of a user churning will decrease by 0.105182264.
- The values of the Beta coefficients for most, if not all, of the independent variables in the model were very small, indicating they were not strong predictors of user churn.
- The amount of true positive predictions was very low (80), but true negatives were very high (3466). The amount of false positives was low (66) but the false negatives was relatively high (681).
- The precision score (55.94%) was not satisfactory enough, meaning that the model was not able to sufficiently predict user churn. Also, the recall score (10.51%) was very low, meaning that the model had a high amount of false negatives.

Next Steps

- I would not recommend waze to use this model due to low precision and recall metric scores
 - I recommend adding more features/independent variables to the dataset to further explore user churn
 - Promote the use of the waze app even when travelling to known locations; users are less likely to churn by using the waze app when travelling to known/favorite locations.
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