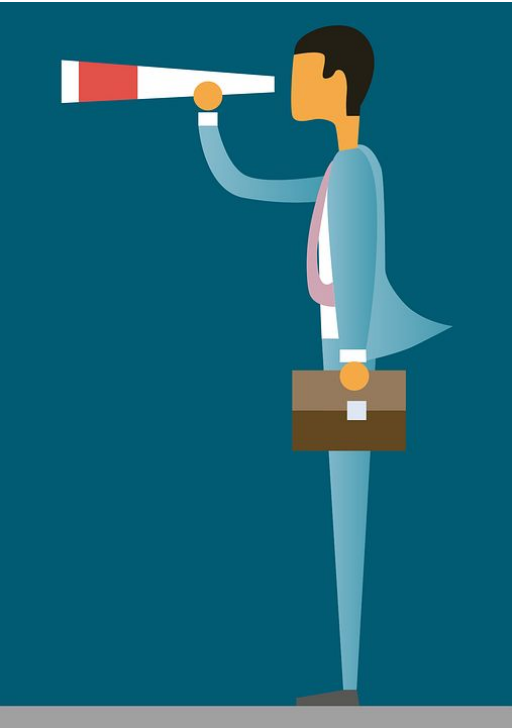

SyriaTel Customer Churn



By: Jeremias Campos



Overview

- ❖ Business & Data Understanding
 - ❖ Our Research
 - ❖ Research Results
 - ❖ Recommendations
 - ❖ Next Steps
 - ❖ Conclusion
-

Business Understanding

SyriaTel's c-suites executive have asked my team to conduct research on customer churn.

Current churn rate: ~14.5%

Acceptable churn rate: 5-7%

Our goal:

- ❖ **To observe which features affect churn rate.**
 - ❖ **Determine predictive patterns that lead to churn.**
-

What is Customer Churn?



Customer churn rate: "a business metric that represents the percentage of customers who terminate their relationship with a company in a particular period of time."



What Shall We Keep An Eye For?

Type I Error
(false-positive)



Type II Error
(false-negative)

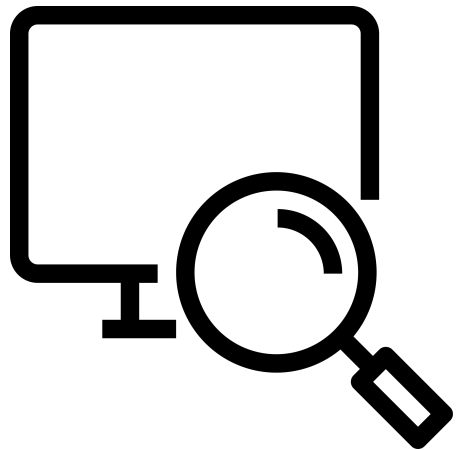


A **false negative** (Type II Error) means our model is predicting that the customer is not going to cancel when they really are.

A **false positive** (Type 1 Error) means our model is predicting that the customer is going to cancel when they are not.

Our priority is given to the **metric of recall** since we want to minimize the false negative.

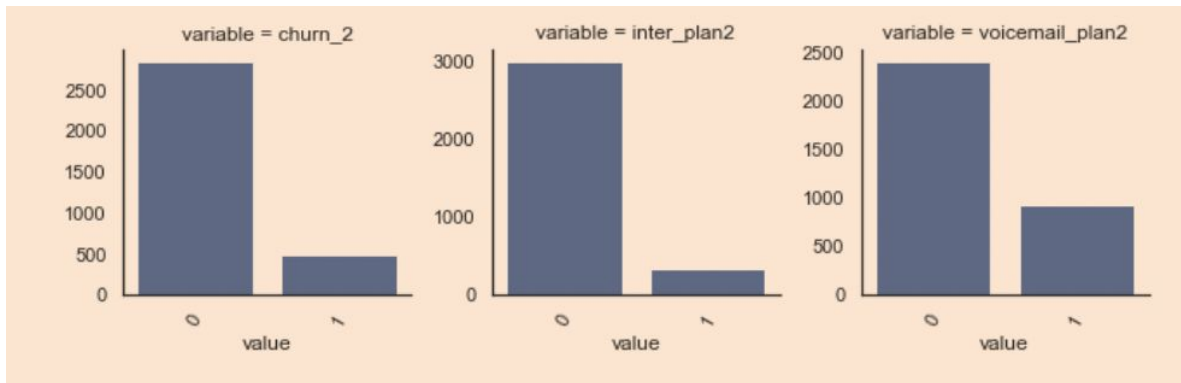
Our Research

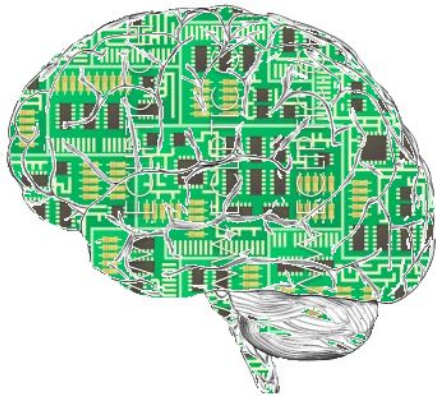


- ❖ 2 questions that research may be able to answer:
 - What is the relationship between churn and other features?
 - What features increase the likelihood of churn?
-

Research Results: Categorical

- ❖ Categorical information:
 - International/voicemail plan
 - Churn Rate

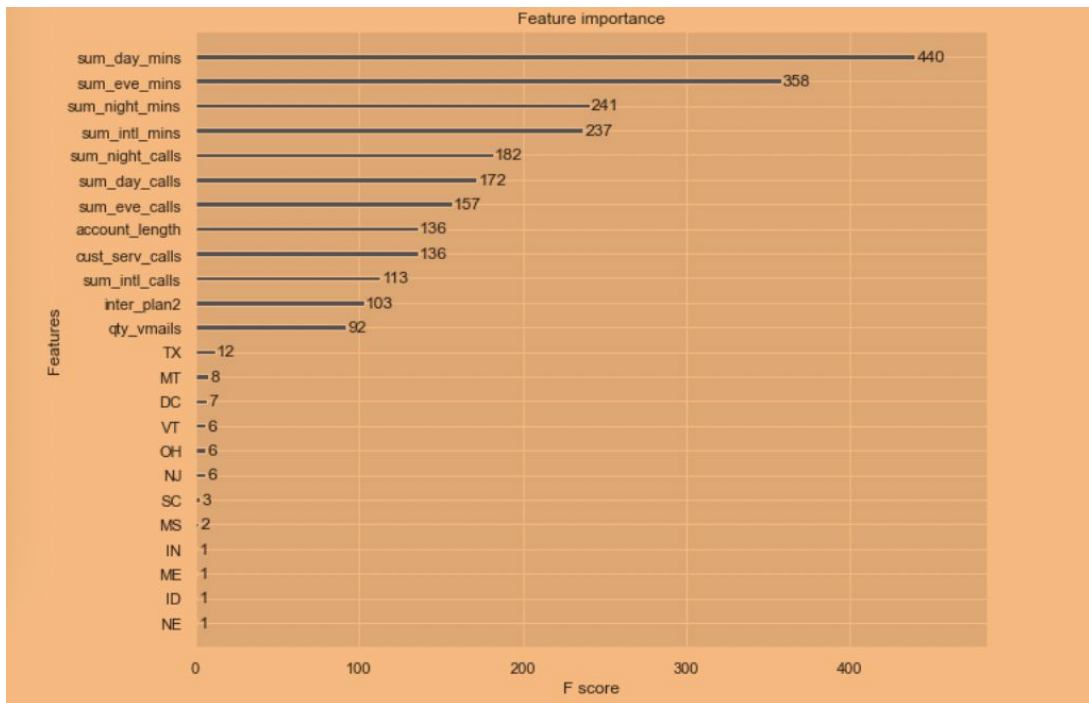




Research Results: Our Best Model

- ❖ Our XGBoost model performed best compared to 4 other models ran.
 - recall : ~79%
 - Validation accuracy: ~96%
-

Research Results: Top Features



All columns with numeric values showed to have the most impact on churn rate.

- ❖ Numeric information:
 - Sum of minutes used (day/eve/night)
 - Total charge (day/eve/night)
 - Number of voicemails
 - Account length

Recommendations



- Create dataset per **state** to allow data analyst to see what he/she can do to improve churn per state.
 - Explore the impact of **monthly/annual charge for minutes used & the total monthly/annual charge**. This may be useful to find an **optimal charge per minute** compared to competitors prices to see if this decreases churn rate.
-

Github: <https://github.com/DataJCampos>

Gracias

Sources

- *Biswas, Sushman. "5-Step Guide to Building a Churn Prediction Model." Width.ai, 10 Nov. 2021, <https://www.width.ai/post/churn-prediction-model>.*