

# Churn Driven Analysis of Phone Customers

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- **Data Cleaning:** Removed Negative Values for *account\_age\_days*
- **Initial EDA:** Greater *customer\_support\_calls* has higher churn rate (Figure 1)
- **Logistic Regression:** Features that are correlated to churn (p-values): *international\_plan*, *total\_calls*, *charges*. Used coefficient col to determine ROI
- **XGBoost:** 98%/97% accuracy on train/test split, results shown in (Figure 3)
- **Recommendations:** Phone company should prioritize reducing charges first, since customers are probably time sensitive. Also have better customer service so customers don't make too many service calls. Finally, target different states.

Figure 2

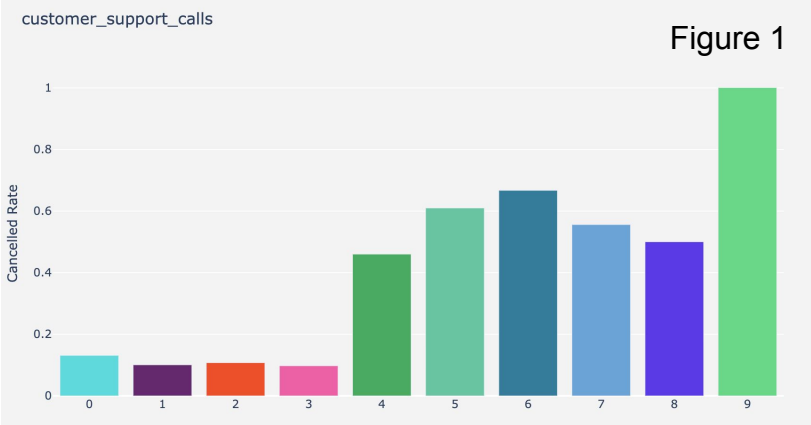
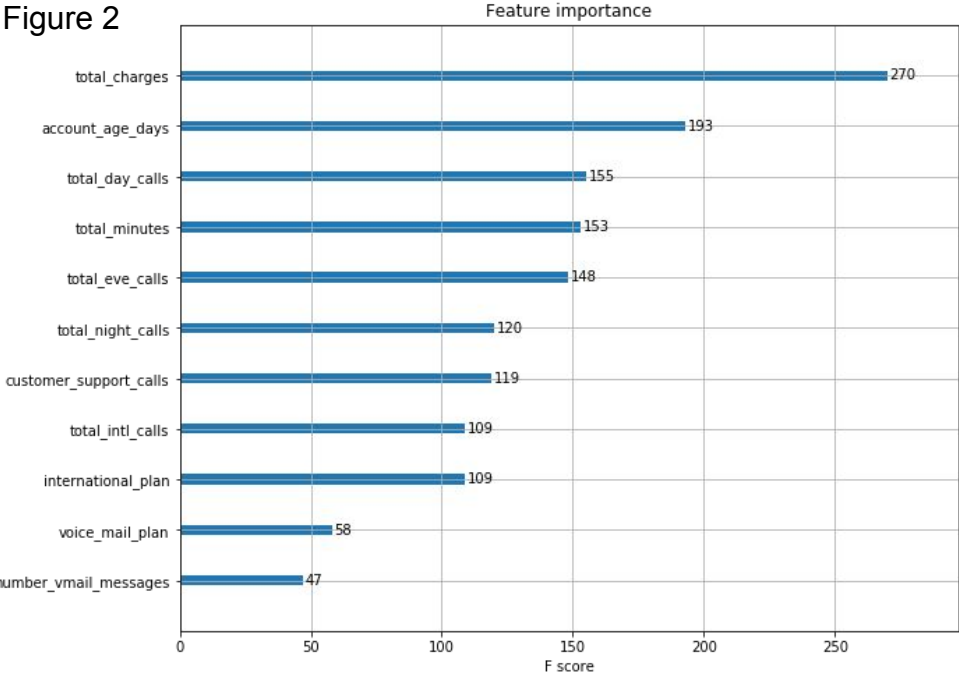


Figure 1

	customer_id	churn_probability	churn
0	1707	0.006059	0
1	2709	0.011497	0
2	2635	0.183748	0
3	359	0.021285	0
4	536	0.021451	0
5	178	0.012441	0
6	1423	0.037725	0
7	405	0.970039	1
8	59	0.015904	0
9	2894	0.984823	1

Figure 3

- Customer 405 will churn mainly because he is on an international plan and has high total charges. Also had high calls and minutes.
- Customer 2894 also has high total charges and call volume.