

Why are Telco customers churning?

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Process - Bring in Customer Data, and Model

Acquire/Prep Data

Telco - Codeup SQL database

Create acquire.py that will get telco data.

Prepare.py

- Clean data
- One hot encoder
- Split - train, test

Explore

Which variables have a higher churn_rate than the population?

- Internet service, Contract type, payment type
- Those who have Fiber optic makeup 69% of churned customers

Model Predictions

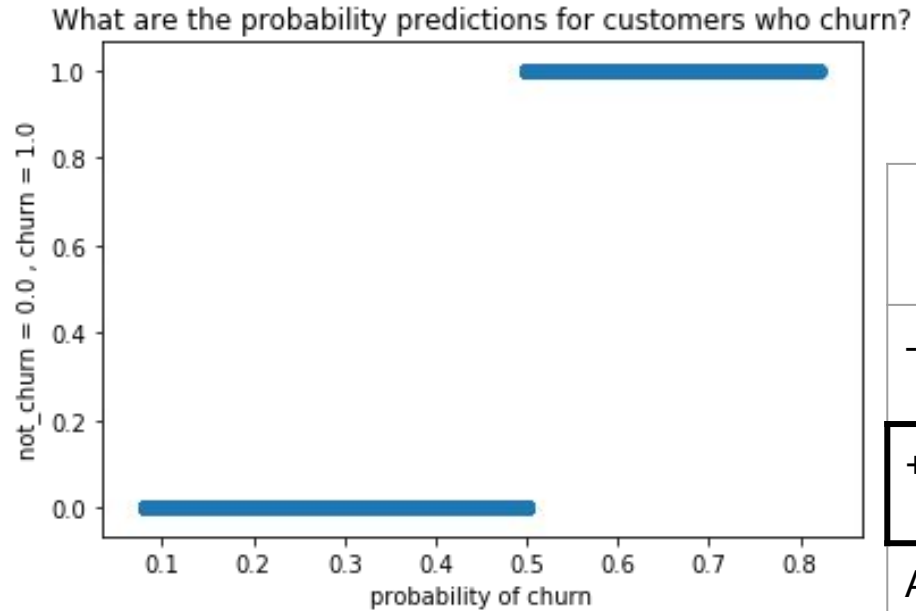
Create models that will predict the probability of customers who churn

Run train data through

1. Simulations
2. Decision Tree
3. Logistic
4. Random Forest
5. KNN

FOCUS: Model Recalls

What was the rate that we correctly predicted churn?



Range of probabilities of customers who churned: 50% - 80%

Range of probabilities of customers who did not churn: 10% - 50%

	Sim1	Sim2	RF	Tree	KNN	Log
-Churn	100%	74%	94%	91%	93%	69%
+Churn	0%	26%	38%	51%	55%	73%
Acc.	73%	61%	79%	80%	83%	70%

Conclusions

Why are Telco customers churning?

For customers who churned the rate of churn was highest for those who paid \$68 - \$108 in monthly charges. This was also the case for Fiber optic customers. This leads to think that the pricing of Fiber optic service is a driver of churn.

Going Forward:

Continue to consider pricing for Fiber Optic. Create more predictive models with refined features that can give us insight into customer churn probabilities.
