



# Telco Customer Churn

## Churn Classification Modeling

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# Business Problem

- Analyze data from customer churn at Telcom
- Determine the best metrics to predict customer churn
- Predict behavior to retain customers
- Make Recommendations to Telcom to prevent churn



# Data

- Available from Telco Customer Data
  - Customers who left within the last month – the column is called Churn
  - Services that each customer has signed up for
  - Customer account information
  - Demographic info about customers
- 7,043 Customer Records
- 2017-Present



# Predicted Class

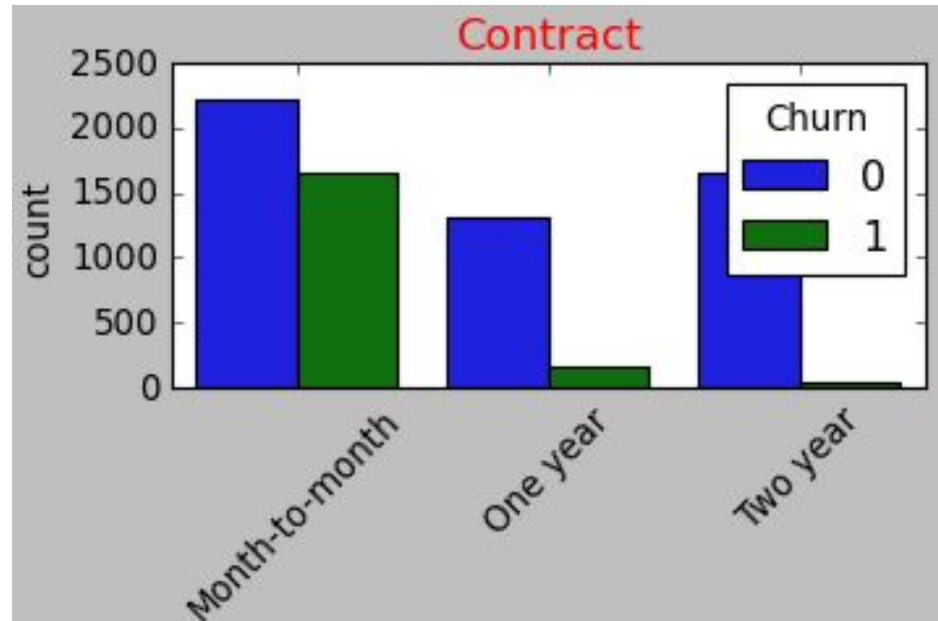
- Building Models to Predict Customer Churn

Yes - 1869 data points

No - 5163 data points

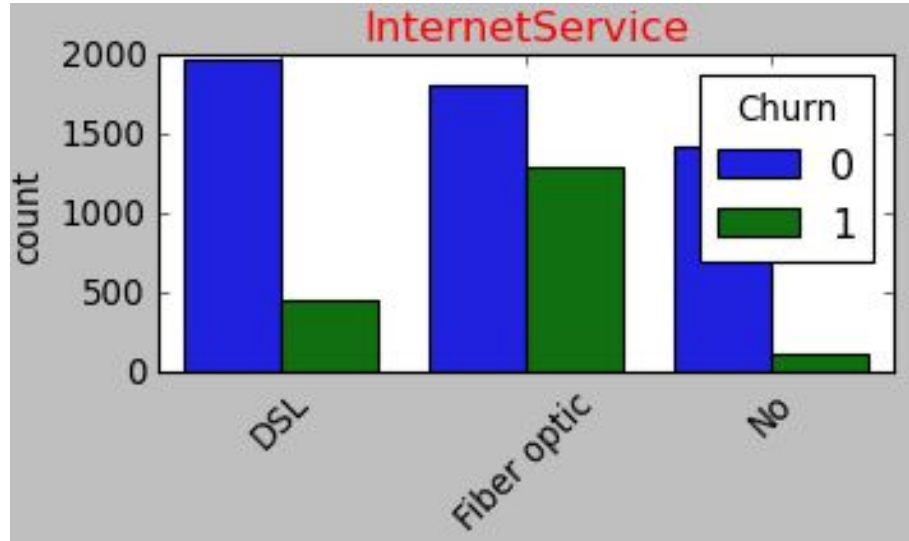
# Findings

- Customers who are month-to-month are more likely to churn



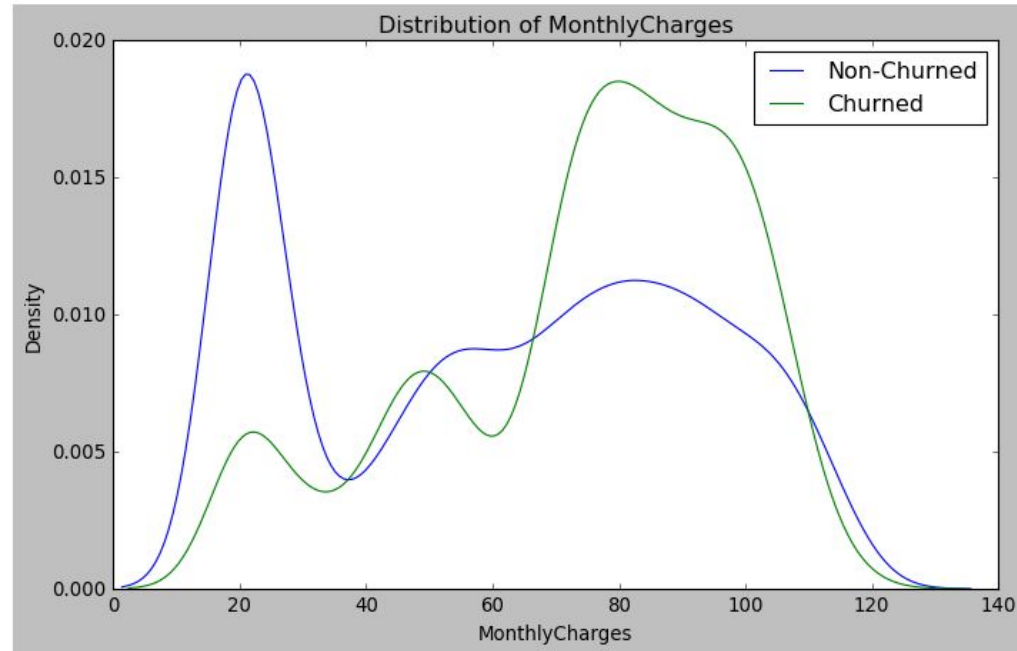
# Findings

- Customers who sign up for fiber optic internet are more likely to churn



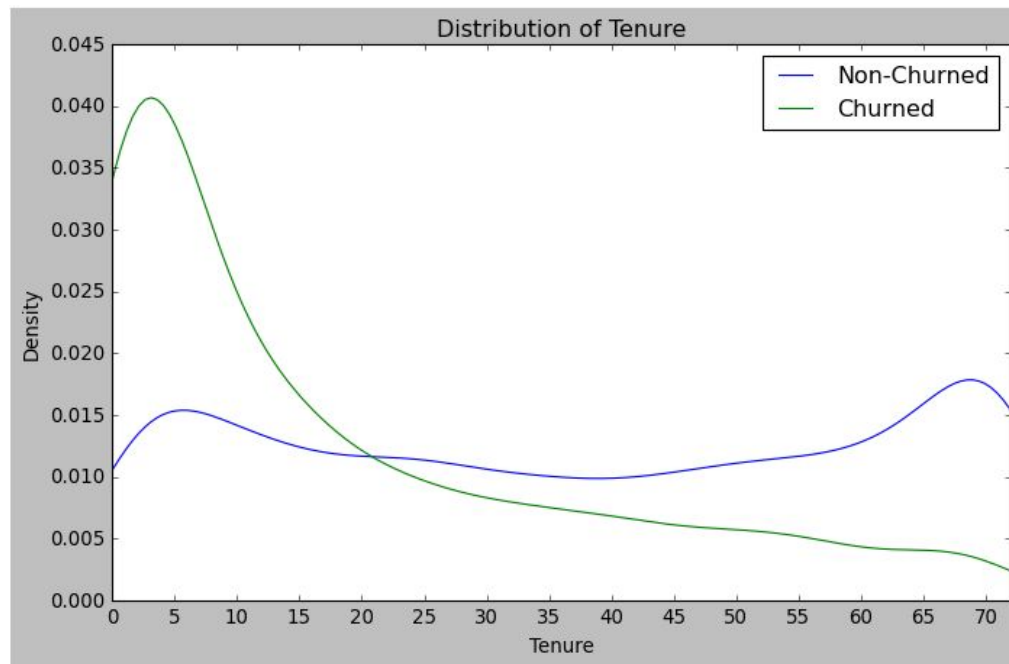
# Findings

- Customers churn less with a lower monthly payment



# Findings

- Customers churn less after staying with Telco for 5+ months







# Modeling



**Import Data and EDA**

**Train-Test Split**

**Preprocessing**

Data Cleaning

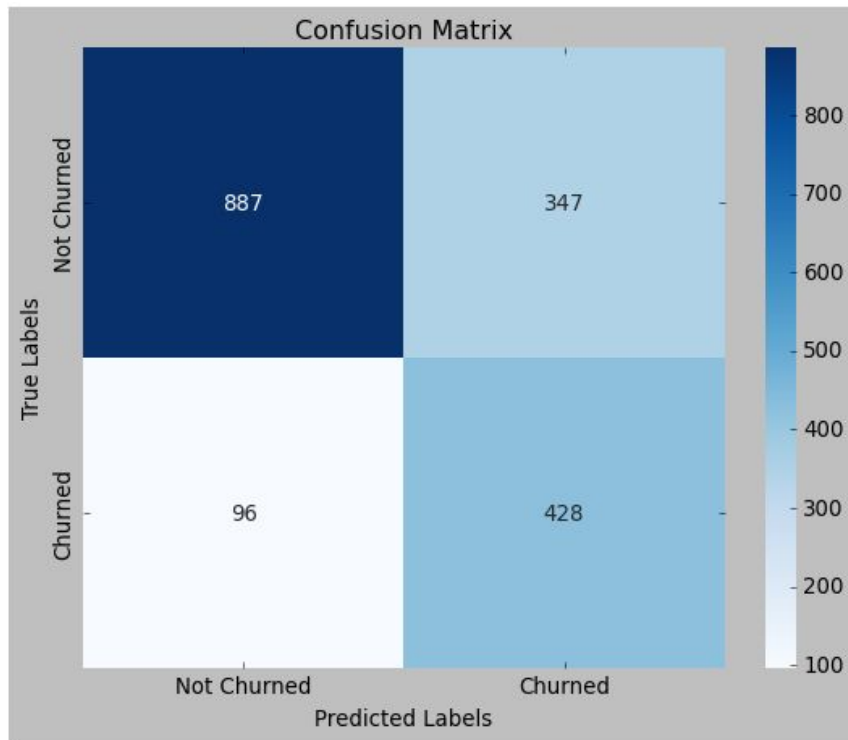
**Modeling**

Random Forest Classifier,  
Standard Scaling, Grid search  
Cross validation, SMOTE  
pipeline

**Model Evaluation**

Overall Accuracy, Recall

# Model Performance



## Recall

For class Not Churned: 72%

For class Churned: 82%



# Recommendations

- Minimize month to month contracts
- Maximize two-year contracts
- Minimize customers who use fiber optic internet.
- Maximize tenure of customers(over 5 months)
- Keep the monthly charge under 40 dollars