




Customer Churn Predictor



A machine learning prediction engine for customer churn analysis

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June 8, 2020

Motivation

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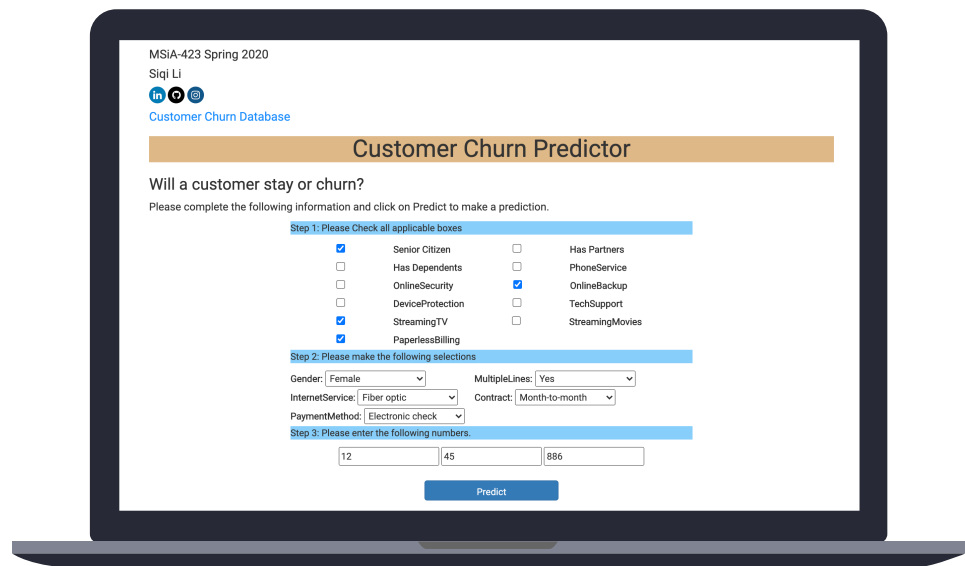
Customer attrition is undesirable, as in most of the cases, the cost to retain a customer is lower than that to acquire a new customer.

Goal:

Help a telecom company make reliable predictions for customer churn.

Company can implement remedial actions for customer retention.

Live Demo



MSIA-423 Spring 2020
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[Customer Churn Database](#)

Customer Churn Predictor

Will a customer stay or churn?

Please complete the following information and click on Predict to make a prediction.

Step 1: Please Check all applicable boxes

<input checked="" type="checkbox"/> Senior Citizen	<input type="checkbox"/> Has Partners
<input type="checkbox"/> Has Dependents	<input type="checkbox"/> PhoneService
<input type="checkbox"/> OnlineSecurity	<input checked="" type="checkbox"/> OnlineBackup
<input type="checkbox"/> DeviceProtection	<input type="checkbox"/> TechSupport
<input checked="" type="checkbox"/> StreamingTV	<input type="checkbox"/> StreamingMovies
<input checked="" type="checkbox"/> PaperlessBilling	

Step 2: Please make the following selections

Gender: MultipleLines:

InternetService: Contract:

PaymentMethod:

Step 3: Please enter the following numbers.

Dataset

Information about a telecom company which provides services to customers in California.

From Kaggle.com

7, 043 observations

Binary Response Variable: Churn (Yes/No)

20 features including: Gender, Monthly charges, Contract type, Payment Methods

Model

Random Forest Classifier

80% Training set; 20 % Test set

Success criteria

Model performance metric

Accuracy on the test set: 81.02%; AUC: 0.8346 (Goal
Achieved!)

Business outcome metrics:

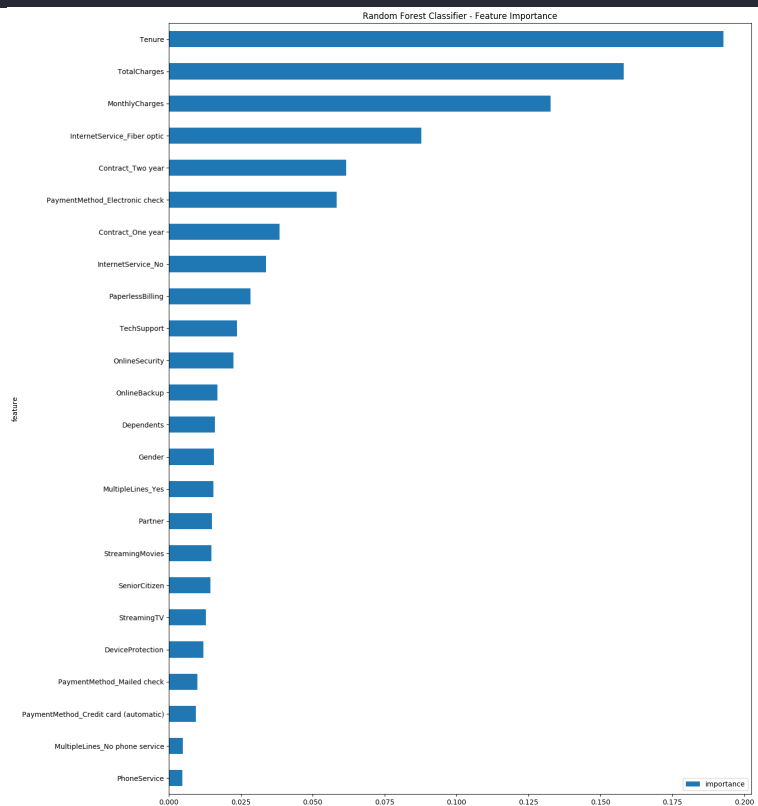
10% decrease in customer attrition rate in the month

Insights

Tenure, Total Charges, Monthly Charges, Contact Type and Internet Service are the top 5 most important features.

Female and male are equally likely to churn.

Customer with Paperless Billing service are more likely to churn (74.9% among churn customers vs. 53.6% non-churn customer)





Thanks!

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Github: <https://github.com/LSQI15/2020-msia423-Li-Siqi>