



SyriaTel Classification Analysis

By Susanna Han



DATA COLLECTED:

- Total **intl** minutes
- Total **intl** calls
- Total **intl** charge
- **State**
- Account length
- Area code
- **Phone number**
- International plan
- Voicemail plan
- Number vmail messages
- Customer service calls

- Total **day** minutes
- Total **day** calls
- Total **day** charge

- Total **eve** minutes
- Total **eve** calls
- Total **eve** charge

- Total **night** minutes
- Total **night** calls
- Total **night** charge

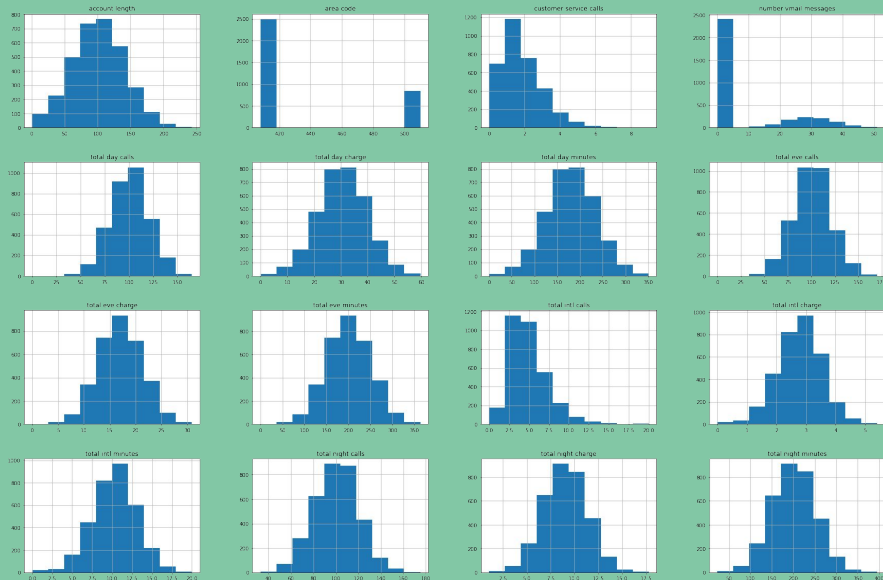


Churn

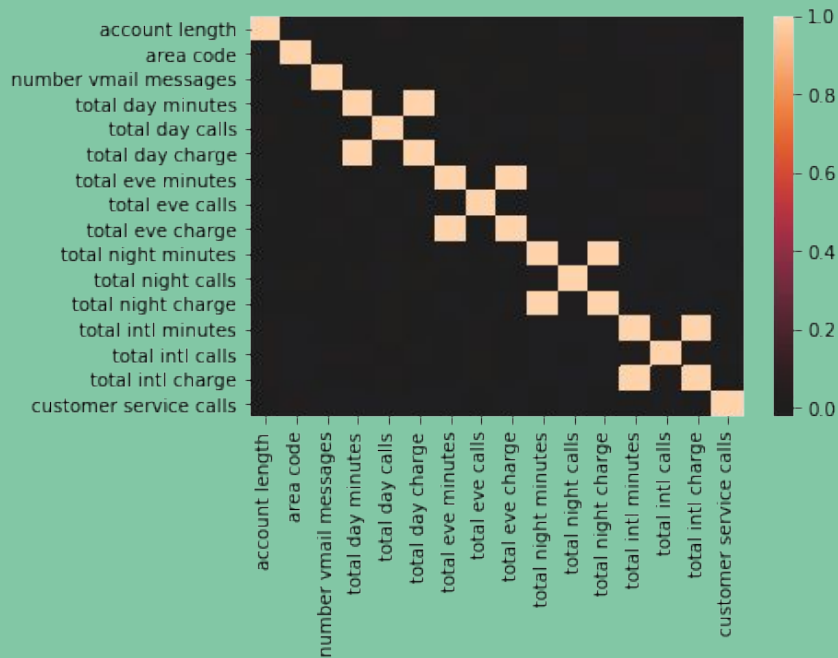
14.5%

of customers
no longer do
business with
SyriaTel

Normal distribution



Correlation



Random Forest - base model

test score : 0.936

Important features:

- International plan
- Total day charge
- Total day minutes
- Customer service calls
- Total eve minutes

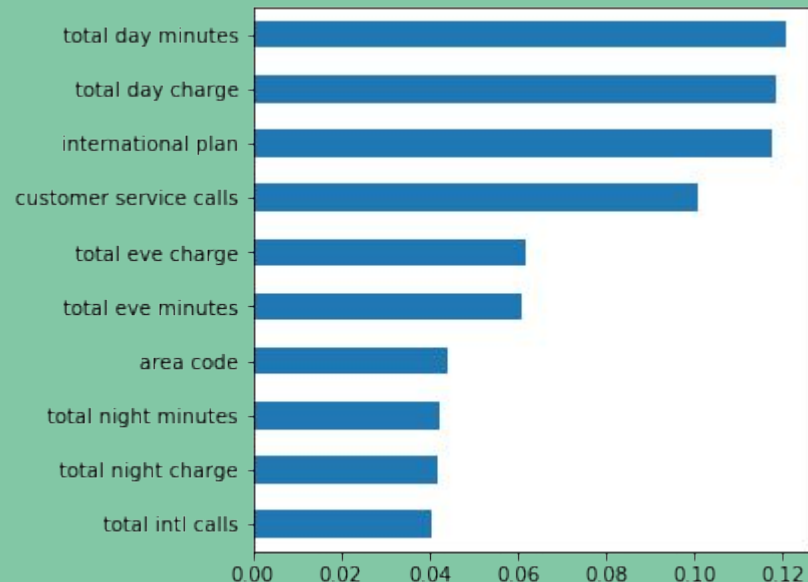


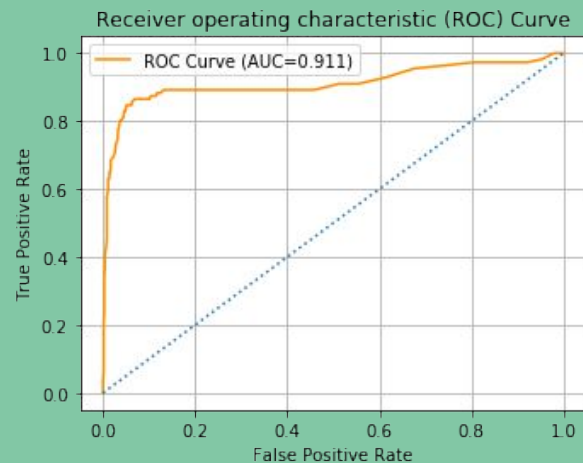
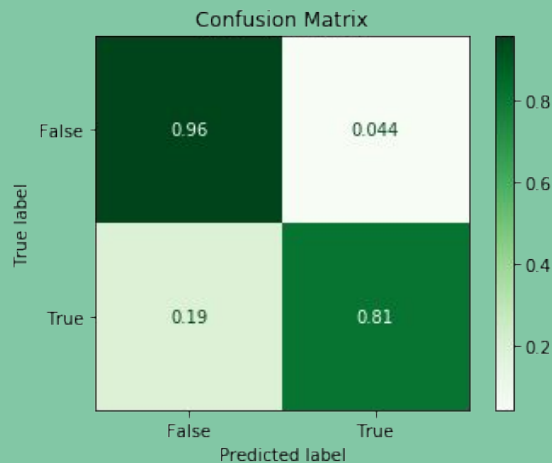
Random Forest - tuned model

test score : 0.952

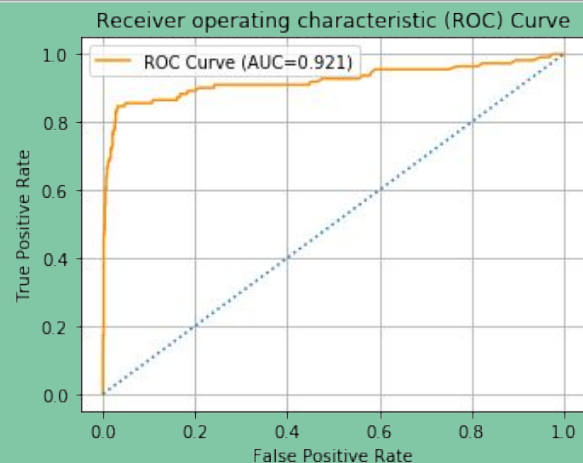
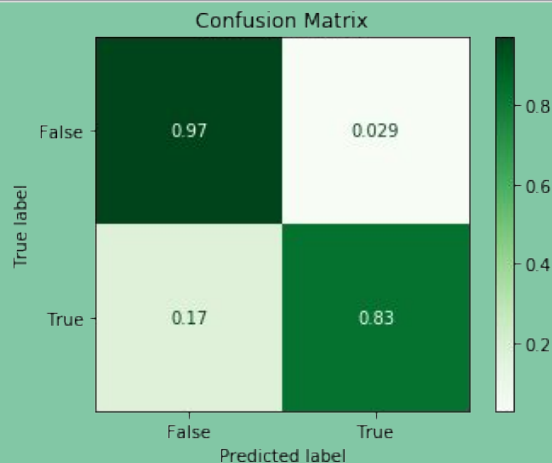
Important features:

- Total day minutes
- Total day charge
- International plan
- Customer service calls
- Total eve minutes





**Base
Model**



**Tuned
Model**




Insight and Recommendations

1. Customers who use more minutes during the day and have an international plan are more likely to stay.
2. Customers that do not make a lot of calls and don't have voice mail are more likely to stop doing business.
3. Promoting International Plans and making customer service a priority may increase longer lasting customers.



Future Work:

- Fit the data to GradientBoosting and compare different models.
 - Create more vibrant visuals to help analyze data.
 - Compare GridSearchCV with RandomizedSearchCV
- 

Thank
you!

