

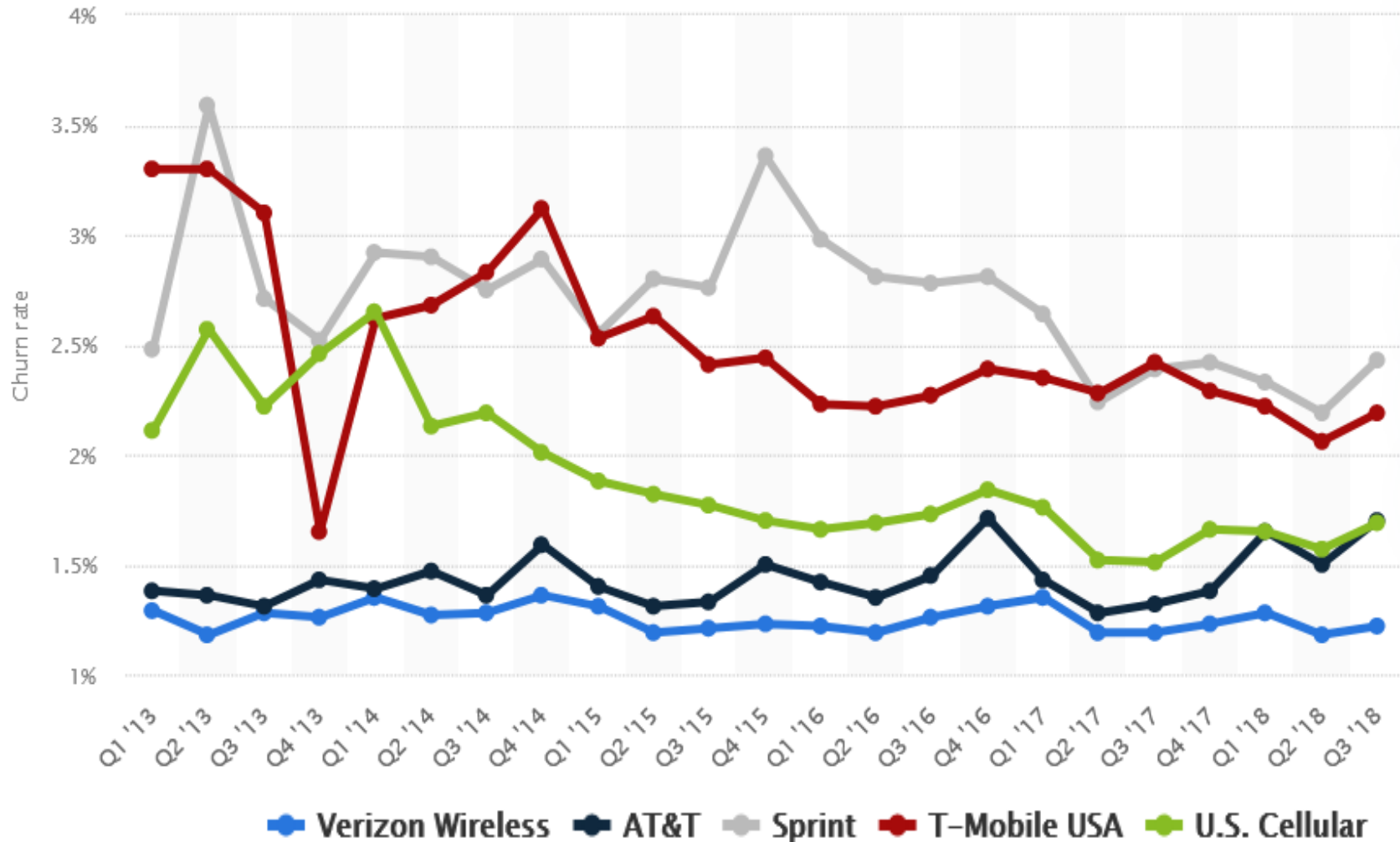


# Predicting customer churn at Syriatel

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# BUSINESS OVERVIEW

Average monthly churn rate for wireless carriers in the United States  
from Q1, 2013 to Q3 2018



- The average monthly churn rate for U.S. telecom companies: 1.9% for wireless carriers and around 1.6% for broadband services.
- Costs U.S. telecom companies billions of dollars each year.
- Common causes: pricing, customer service, network performance, etc.

# PROJECT OBJECTIVES

- 1. Develop a predictive model to determine churn
- 2. Identify key factors influencing customer churn
- 3. Provide actionable insights to reduce churn



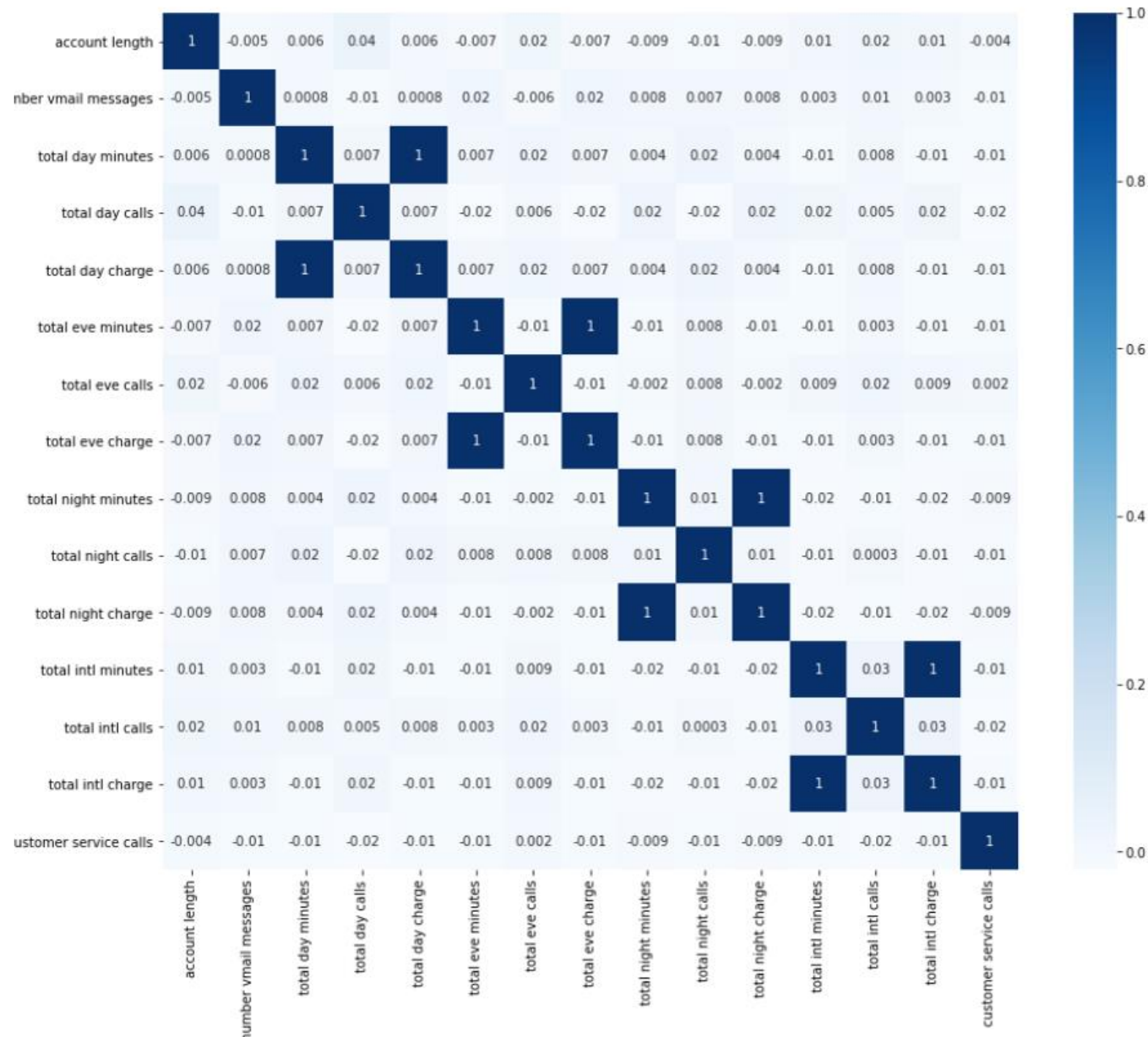


# DATA OVERVIEW

- Dataset is provided by the Kaggle community
- 20 predictor variables, 3333 records
- The ratio of churners in this dataset is 14%
- Feature instances (customer usage patterns) such as account length, total day charge, customer service call, etc.

# PREPROCESSING

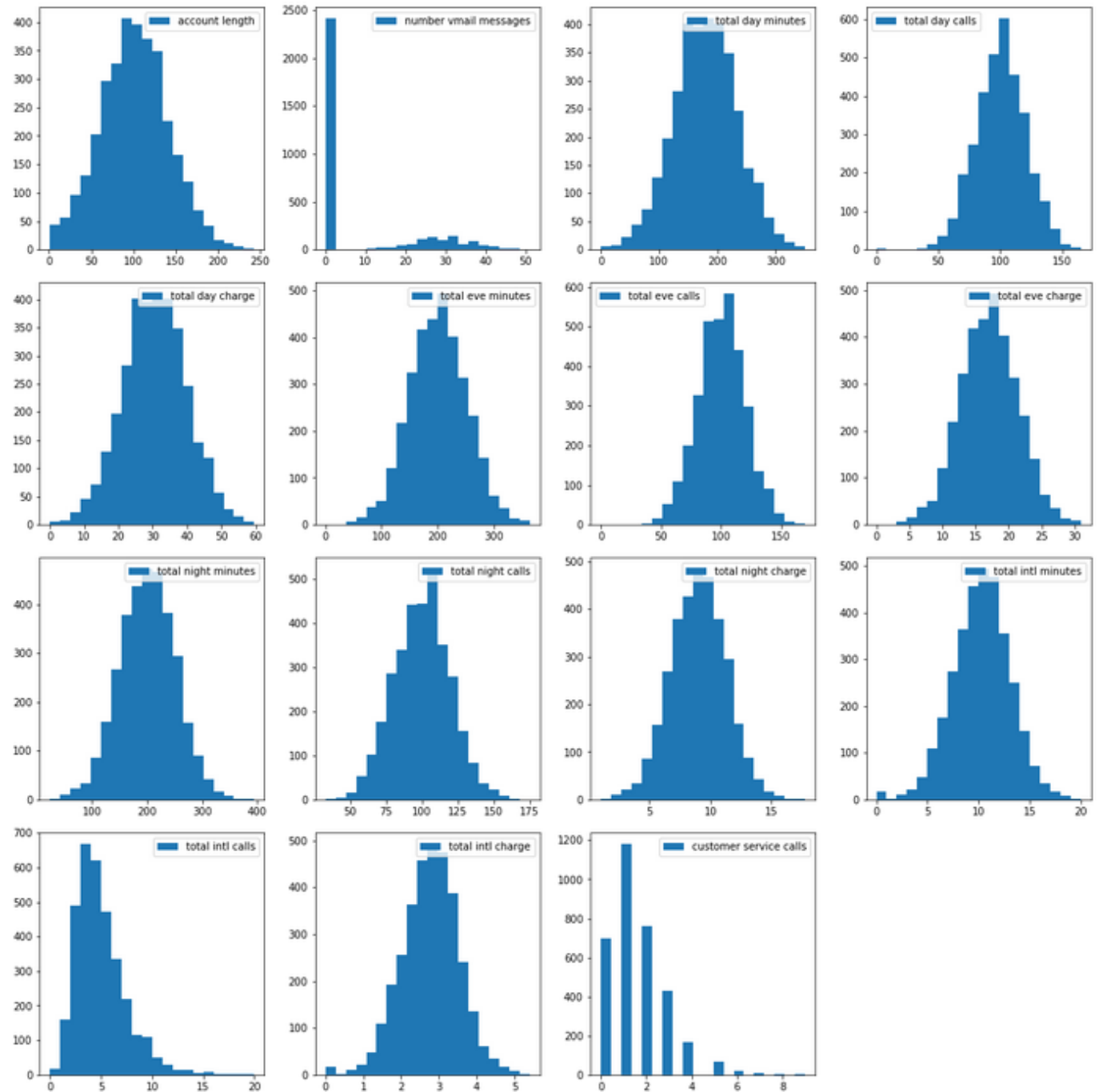
Remove multicollinearity by dropping columns with perfect correlations





# PREPROCESSING

- Apply one-hot encoding for categorical features
- Train – test split with test size set at 25%
- Normalize both train and test separately with Standard Scaler for numerical features



# LOGISTIC REGRESSION

Without any regularization, achieve

- 76.37% accuracy rate
- 66.4% recall rate
- AUC ROC is 0.80.

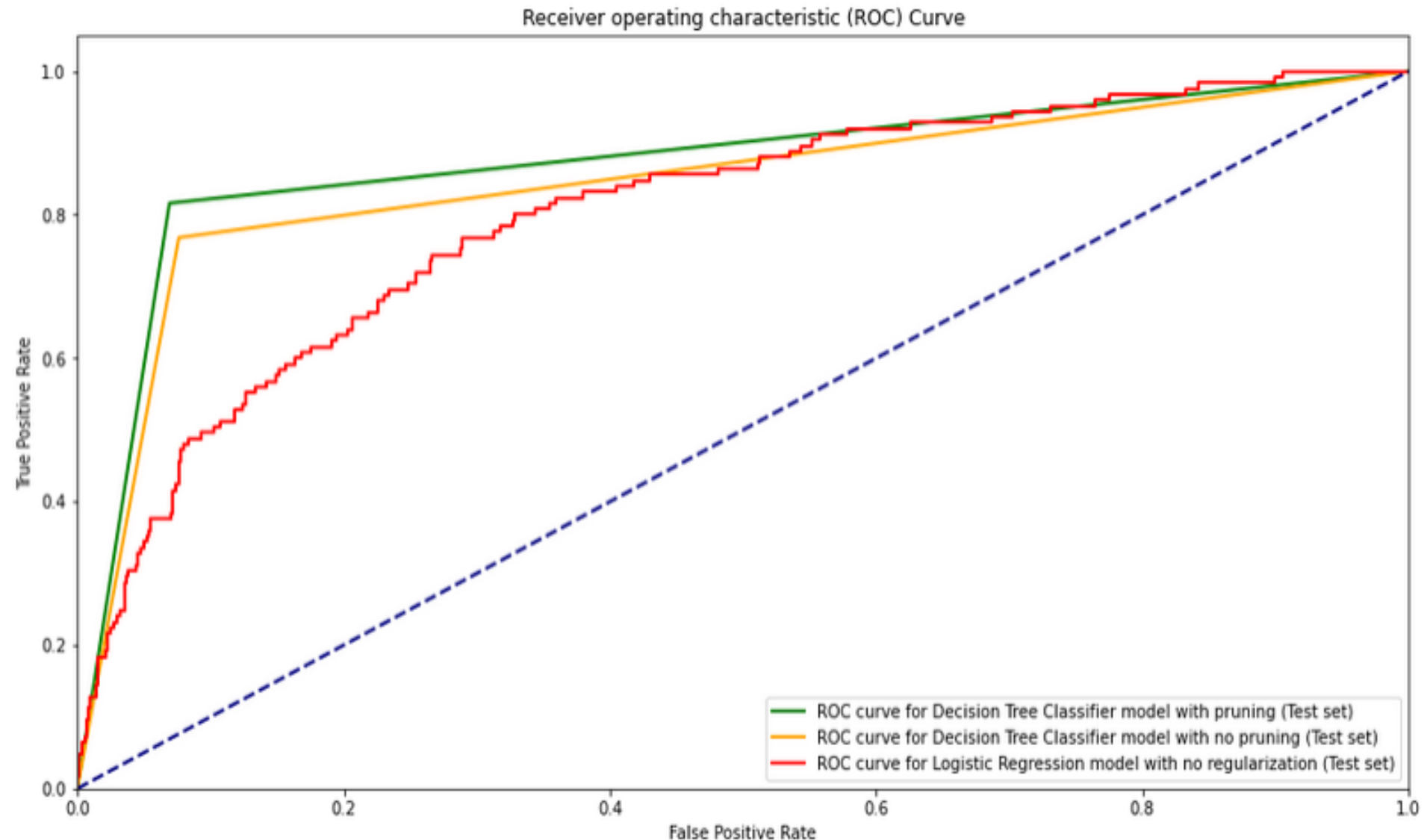
Tuning this with different regularization does not improve model



# DECISION TREE CLASSIFICATION

Final model with  
maximum depth set at 5

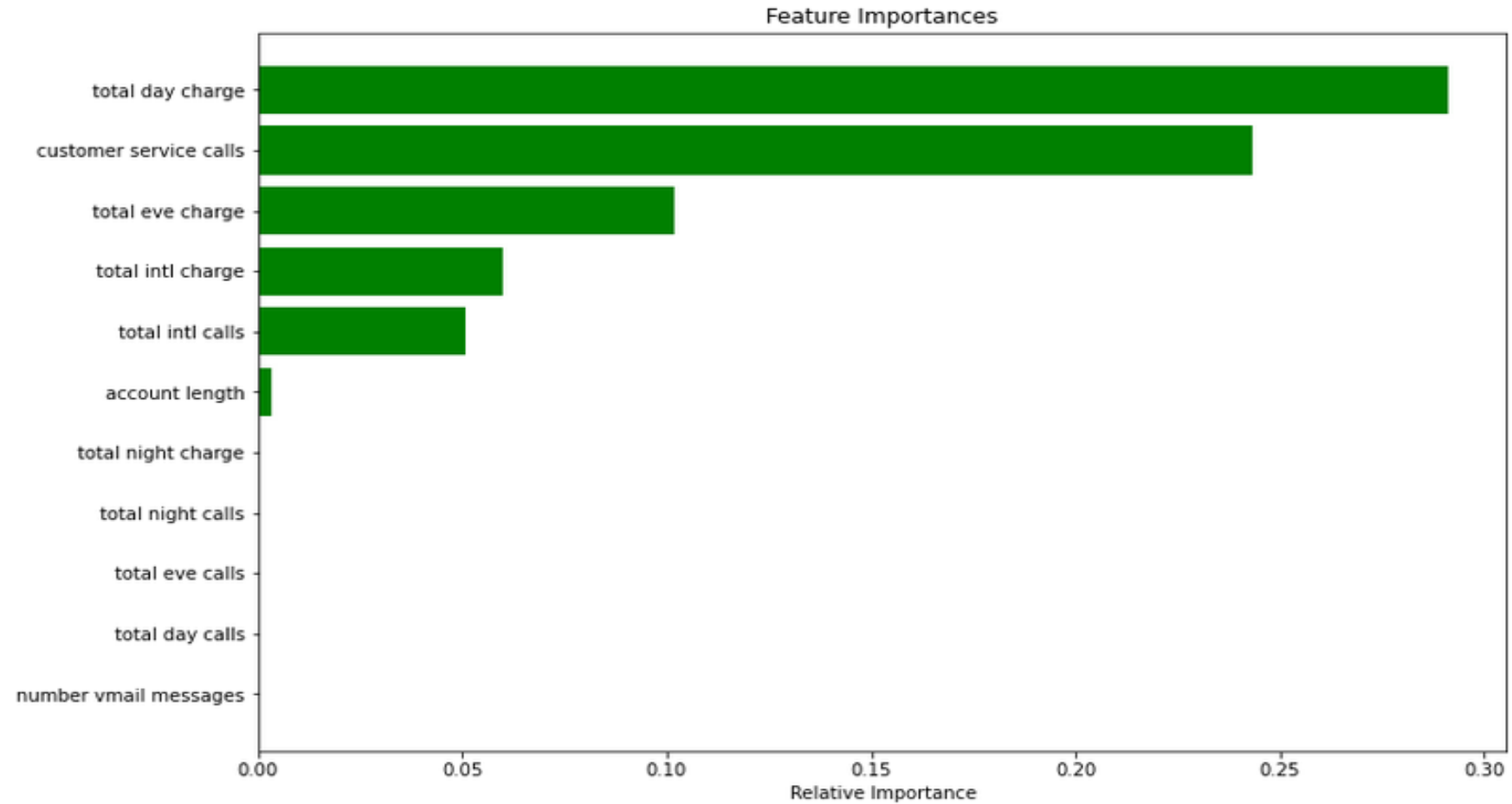
- 91.36% accuracy
- 81.6% recall rate
- AUC ROC 0.8734





# RECOMMENDATIONS

- Reduce charges for day and evening calls with campaigns or customer loyalty programs
- Improve customer service by reducing waiting times and providing extensive training





# Thank you

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