Tahron Herring

Lending Club
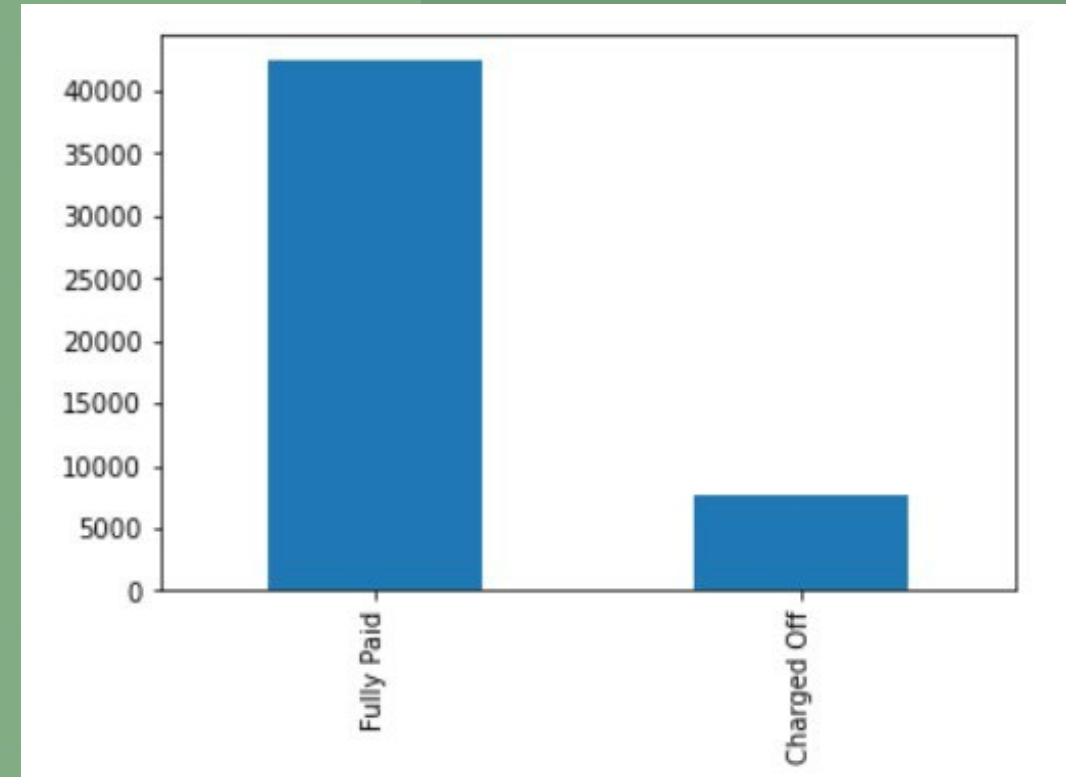# Loan Processing

Contents

Overview

Lending Club, one of the world's largest peer-to-peer lending companies, is looking for ways to improve its loan approval process. The focus for this project will be to improve borrower selection by identifying those borrowers who are more likely to repay their loans in full.

Business Understanding

- Project objective I: Accurately predict whether a new borrower will pay their loan in full

- Project objective II: Provide a list of customer focus areas that are key to accurately predicting customer outcomes

Data Understanding

- Large dataset: more than 500k records spread across over 150 features

- Project sample: 50k records and 30 features
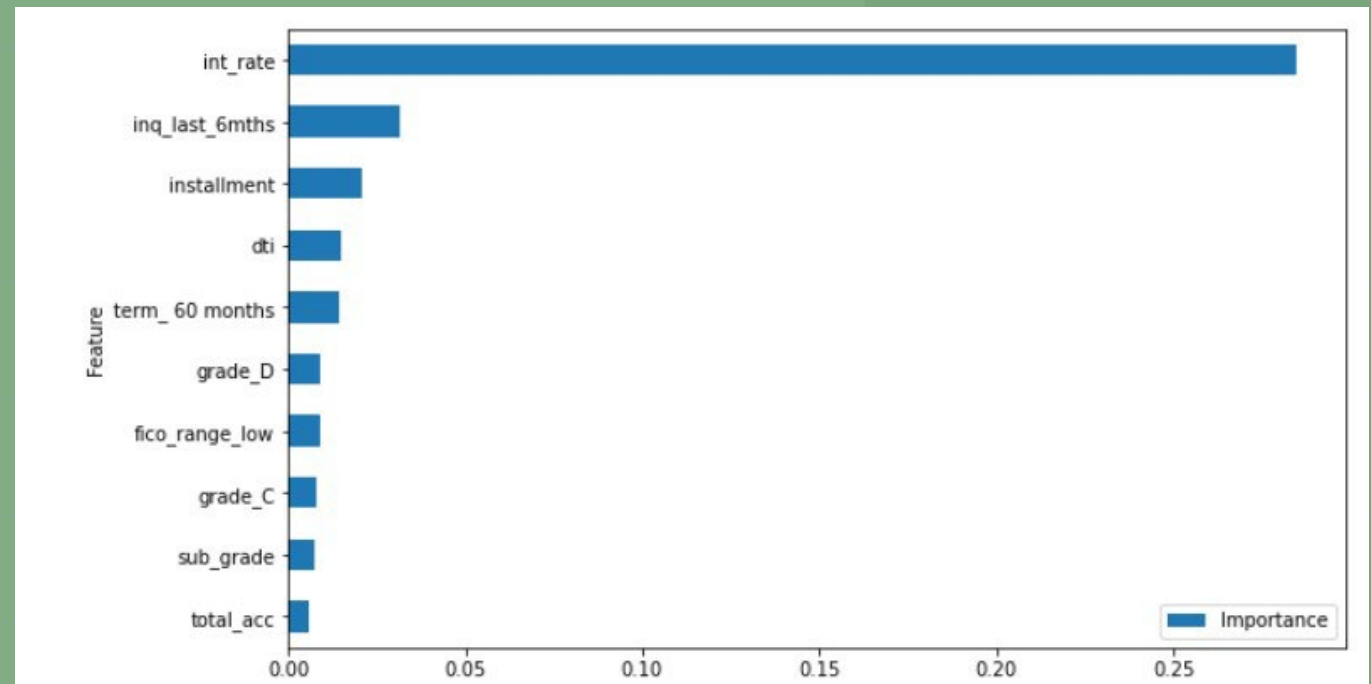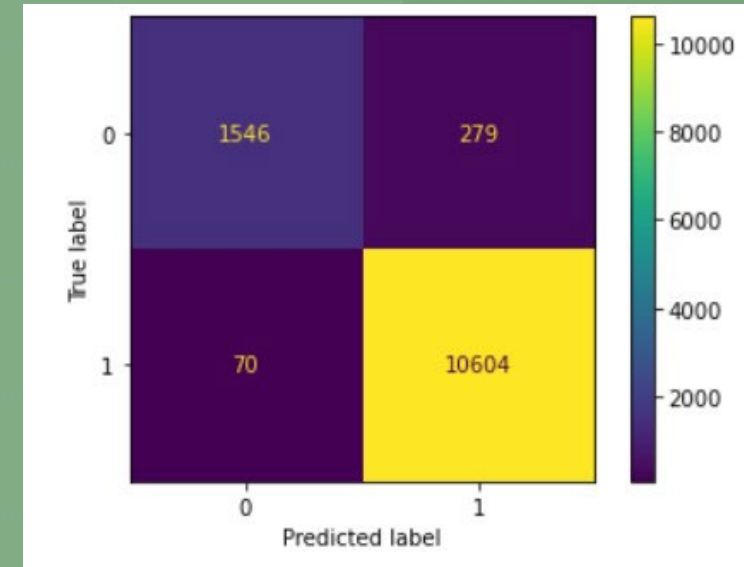
- Target feature: Loan Status

Modeling Results

Machine Learning Models:

- Logistic Regression
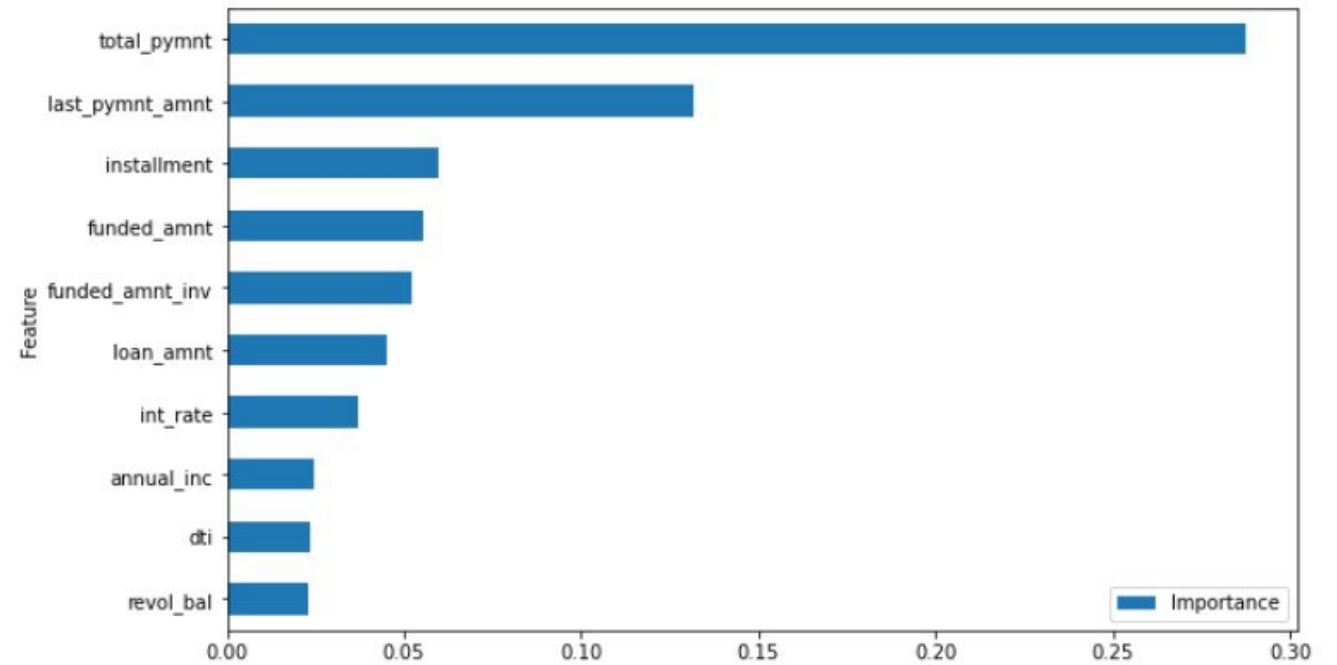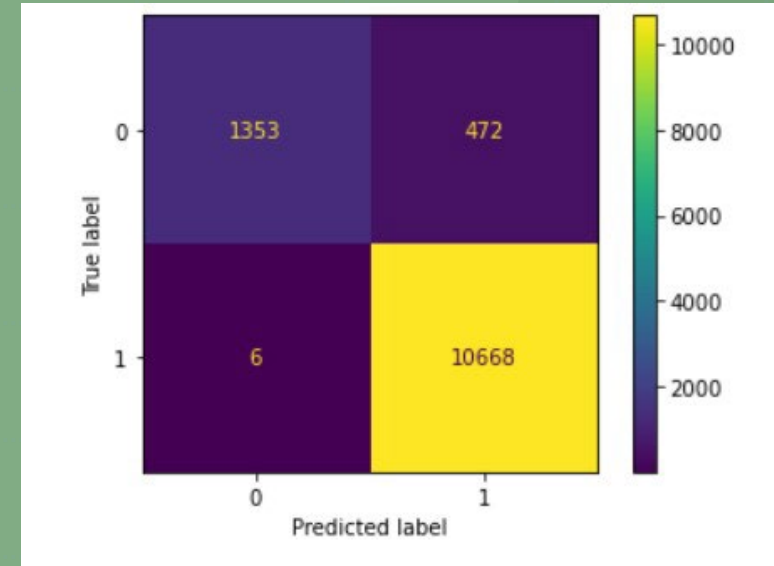
- Random Forest

- XGBoost

Logistic Regression

1. Accuracy: 97% Train & Test

2. Second best performer

3. Top 3 features:

1. Loan Interest Rate

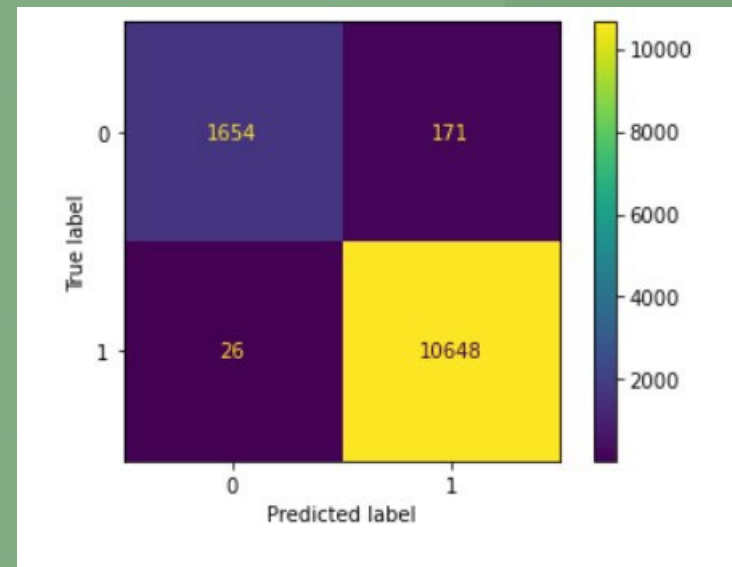2. Inquiries In Past 6 Months

3. Installment

Random Forest

1. Accuracy: 100% Train & 96% Test
2. Third best performer
3. Top 3 features:
   1. Total Payment Received
   2. Last Payment Amount Received
   3. Installment

XGBoost

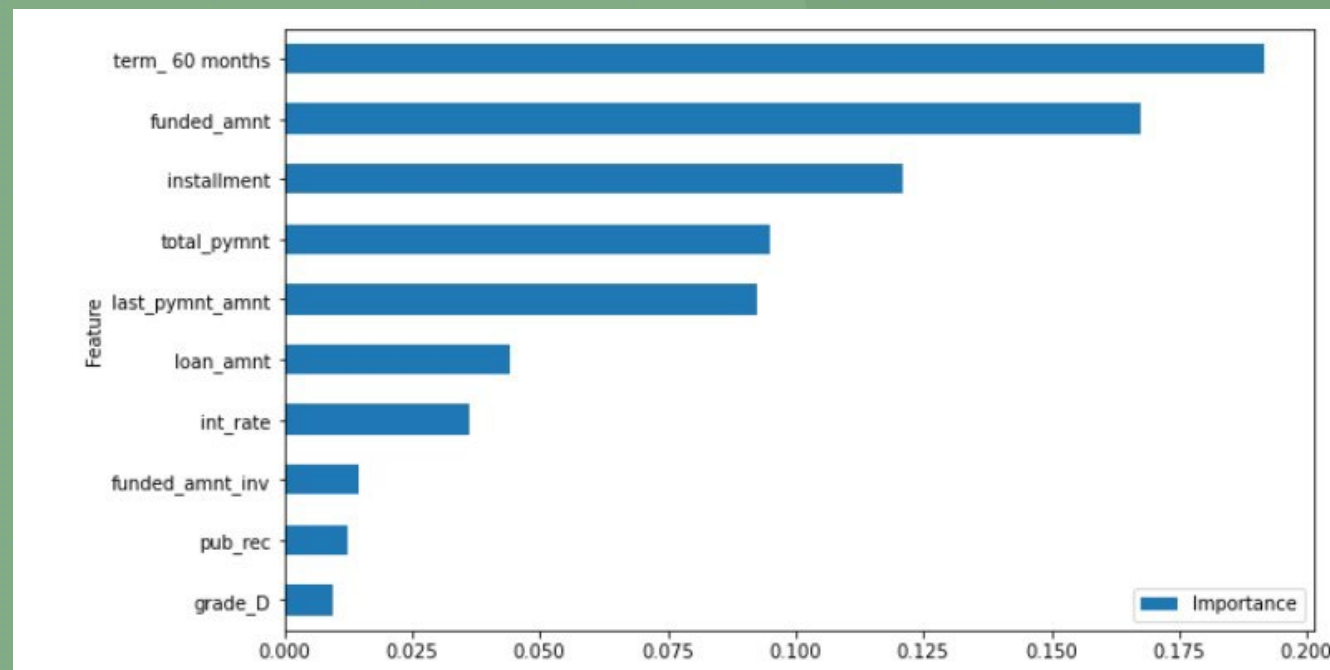1. Accuracy: 100% Train & 98% Test

2. Best performer

3. Top 3 features:
   1. Loan Term 60 months
   2. Funded Amount
   3. Installment

Recommendations

Based on our top performing model, the top five features Lending Club should be concerned with when considering borrower repayment are the following:

- Is the loan term 60 months?

- Consider the amount currently committed to the loan

- Consider the monthly payment for the loan

- Consider the payments received so far for the loan

- Consider the last amount received as a payment

Next Steps

- Leverage more records

- Leverage more features

- Apply different model parameters

- Employ different models

Thank You

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