LendingClub.com

Loan Churn Project

ISSUE / PROBLEM

LendingClub.com seeks to improve loan being fully paid and answer the following question:

What's likely to make the lenders fullty paid the loan?

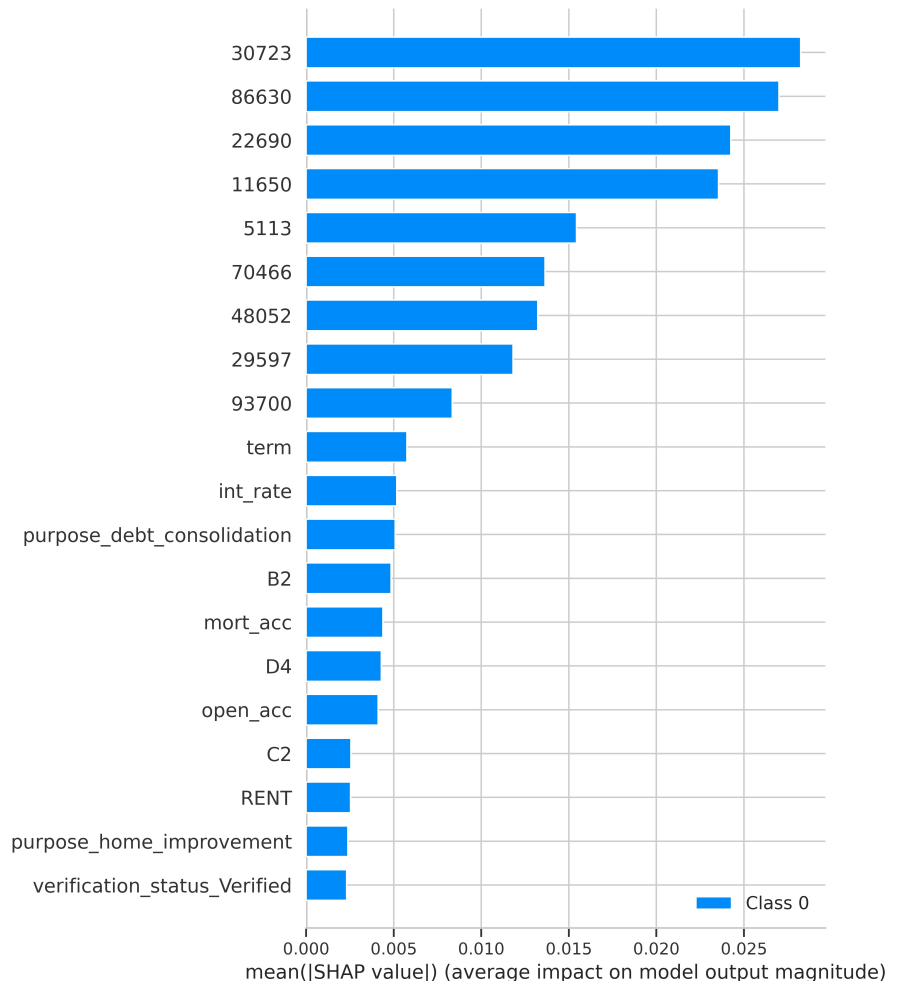## RESPONSE

We want to see deep learning using tensor flow/keras model.

The model shows the precision 90% and recall 89% with accuracy and f1 of 89% and 87%.

IMPACT

This model helps predict whether a customer will fully paid the loan and identify which factors are most influential. These insights can help appraisal team to make decisions to approve the right applicant

In the tensorflow/keras model above, *9 area s/zip codes*, '*term*', '*interest rate*', '*purpose for debt consolidation*', '*B2,D4,C2*', *mortgage, open account, rent and `purpose for home improvement`* have the highest importance. These variables are most helpful in predicting the outcome variable, `*loan repaid*`.

INSIGHTS/NEXT STEPS

- There are 9 area zipcode. Further investigation whether it is a certain area, office area, housing area etc.
- Offer low interest rate to people who have proven good record of paying their loan. We still need to elaborate further the range of the interest rate whether any particular rate is more helpfult as a variable to predict.
- Should we limit open account,we need to see the range of the open account.
- Bank should always be prudent but we can be more linient to people with subgrade B2, C2 and D4 and loan for rent or certain purposes mentioned in feature importance.
- It may be justified to still have some concern about data leakage. As this is unsupervised learning, the model still learning in which case need a strong base rate. We can still elaborate more in the interest,open account,mortgage account, installment or drop the zipcode if further analysis on those area don't show a distinctive area.