

Peer Review for Luo_Fu_Wang_Wang' s Project Report

SUMMARY: This report summarizes the team's effort on this Kaggle Task using the LightGBM model. The team went through data exploration, feature engineering, LightGBM modeling, performance evaluation and eventually got a score of 0.69329 on Kaggle.

STRENGTHS: The report is written in a well-organized way. The whole process of the project is clearly shown through a hierarchical structure. The introduction part shows that the team fully understood the purpose of the task. The team explained why they chose LightGBM as their model and then conducted feature selection correspondingly. After constructing and fitting the model, the team use several methods to evaluate it, including ROC-AUC, K-S score and confusion, which made there evaluation more convincing.

WEAKNESSES: However, there are certain weaknesses. **First of all**, there is a typo on page 4 where the report says 'im value' when it probably should be 'importance value'. **Secondly**, the data exploration part is insufficient. The team mainly covered the size of the dataset, the distribution of the target variable, and the data type of the input variables. However, a thorough data exploration analysis should include more information about the data, such as important tendency, variability, distribution of variables, as well as correlation and relationships within the dataset. **Thirdly**, the feature engineering part was done completely by Featuretools, which performed automatically without any economic logic. I believe constructing some features based on domain knowledge would boost the model. **Fourthly**, the hyperparameter tuning part is not quite convincing. All the best parameters that the team got were the upper bounds of the ranges that they had set. In this case, I think it's better to raise the upper bounds and find if there're better parameters for the model. **Finally**, there isn't any conclusion for the result. For example, deep analysis on feature importance and summary on which attributes of a client can be highly correlated with loan default probability.

My score for clarity and quality of writing: 3. The report is quite clear and easy to understand. The grammar is good and it's well organized. There are very few typos and formatting errors. But there aren't enough examples and figures to support their analysis. Example of typos: On page 4 where the report says 'im value' when it probably should be 'importance value'.

My score for technical quality: 2. The results seems to be easy to replicate but the experiment is not convincing enough and the research is not thorough. The authors did not assess the strengths and weaknesses of their approach. No relevant papers are discussed and compared to the presented work.

My Overall rating: 3.

Confidence on my assessment: 3. I have carefully read the paper and checked the result. I also carefully checked the code they put on Github.