

Credit Risk Analysis Report

1. Provide an overview that explains the purpose of this analysis.
 - To create a model that can determine a borrower's creditworthiness using a dataset of past loan behaviour from a peer-to-peer lending services provider.
2. Using a bulleted list, describe the accuracy, precision, and recall scores of the machine learning model.
 - The overall accuracy of the model is significantly high with a value of 99%.
 - However, it performs somewhat better in detecting healthy loans (F1 score of 1.00) than high-risk loans (F1 score of 0.88). The F1 score is the model's accuracy considering precision and recall together.
 - The difference in F1 scores for the two different classes can also be attributed to the imbalance in the number of data points used from each class to train the model, (18,759 for Healthy Loan (Category 0) and 625 for High-Risk Loan (Category 1).
 - The Macro Average values of Precision: 0.94, Recall: 0.94, and F1-Score: 0.94 which shows the average across both values is significantly high.
 - Overall, it can be said that the model's prediction skills are rather accurate when considered overall.
3. Summarise the results from the machine learning model. Include your justification for recommending the model for use by the company. If you don't recommend the model, justify your reasoning.
 - Overall, it can be said that the model's prediction skills are rather accurate when considered overall. The model's excellent overall accuracy and balanced F1 scores in both categories show how reliable it is and how effectively it generalises to other loan kinds. I would recommend using the model given the accuracy scores overall and even slightly lower in category 1, the score of 88% accuracy could still be considered given the total performance of the mode. I however would suggest implementing balancing classes to maybe get more reliable data