Michael Dong Woo Kang

DU-Data-Virt-PT-12-2023

Steven Green

Credit Risk Analysis Report

The purpose of the regression analysis was to find out the loan status (1 = high-risk loan, 0 = healthy loan) of individual loans based on their borrower’s other recorded financial statistics. The machine model was created to use this data and regression to predict future loan applicants loan status based on their personal financial statistics.

Model Results:

* Model Weighted Average Accuracy: 0.99 or 99%
* Model Weighted Average Precision Score: 0.99 or 99%
* Model Weighted Average Recall Score: 0.99 or 99%
* Model Accuracy Score predicting healthy loans (0): 1.00 or 100%
* Model Accuracy Score predicting high-risk loans (1): 0.89 or 89%
* Model Precision Score predicting healthy loans(0): 1.00 or 100%
* Model Precision Score predicting high-risk loans(1): 0.84 or 84%
* Model Recall Score predicting healthy loans(0): 0.99 or 99%
* Model Recall Score prediction high-risk loans(1): 0.94 or 94%

These scores indicate that the logistic regression model performs exceptionally well in predicting healthy loans (class 0), with very high precision 100%, recall 99%, and corresponding F1-score 100%. However, its performance in predicting high-risk loans (class 1) that is slightly lower, with precision, recall, and F1-score values ranging from 84% to 94%. Overall, it seems the model is better at identifying healthy loans compared to high-risk loans, but it still maintains a decent level of performance for both analyses with an overall accuracy, precision score, and recall score of 0.99 or 99%.