# Credit-Risk-Classification

Module 20

**An overview of the analysis: Explain the purpose of this analysis.**

- The purpose of this analysis is to evaluate the training material provided to teach a machine learning model. The insights gained from this training can be used to determine loan worthiness for new clients of banks and creditors alike. In this analysis we use a logistic regression model to fit our data and then make predictions based on that. We end this exercise by calculating the accuracy of the model.

**The results: Using a bulleted list, describe the accuracy score, the precision score, and recall score of the machine learning model.**

precision recall f1-score support

0 1.00 0.99 1.00 18765

1 0.85 0.91 0.88 619

accuracy 0.99 19384

macro avg 0.92 0.95 0.94 19384

weighted avg 0.99 0.99 0.99 19384

- The model did a good job in predicting with an accuracy of 99%.

- As I mentioned previously the only consideration worth mentioning in the data is that 75036 out of 77536 or ~97% loans are considered healthy meaning that the data we are trying to train with is not balanced. This imbalance could lead to inaccurate predictions on high-risk loans as the data set used to train was biased towards healthy loans.

- The model has a precision score of 100% for the healthy loans and 85% for the high-risk loans. I believe this is caused by the skewed data towards healthy loans.

**A summary: Summarize 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.**

- Based on the data I feel the model is accurate enough for use by financial companies, with over 99 % accuracy for classifications of loans. I feel this is true if the company is aware that the data used to train the model was skewed towards having more healthy loans rather than high-risk. Going forward I would recommend training the model with a more varied set of training data or perhaps adding an additional testing model to ensure accuracy.