
Bank Credit Card Default Prediction

Project Description

The banks with the invent of credit card were more focused on the number of customers using their credit service but the drawback of them not being able to pay back the credit in time was an issue that soon followed, a system was in need to effectively decide the credit limit to be allowed to a person based on his previous credit history.

You will learn how to use neural network using Keras to identify credibility of the customer. Also learn how to evaluate the model using various parameter like on accuracy.

Problem Statement

Build a classification model using neural network to predict the credibility of the customer, in order to minimize the risk and maximize the profit of Taiwan Credit Bank.

Data Description

There are 25 variables:

- ID: ID of each client
- LIMIT_BAL: Amount of given credit in NT dollars (includes individual and family/supplementary credit)
- SEX: Gender (1=male, 2=female)
- EDUCATION: (1=graduate school, 2=university, 3=high school, 4=others, 5=unknown, 6=unknown)
- MARRIAGE: Marital status (1=married, 2=single, 3=others)
- AGE: Age in years
- PAY_0: Repayment status in September, 2005 (-1=pay duly, 1=payment delay for one month, 2=payment delay for two months, ... 8=payment delay for eight months, 9=payment delay for nine months and above)
- PAY_2: Repayment status in August, 2005 (scale same as above)
- PAY_3: Repayment status in July, 2005 (scale same as above)
- PAY_4: Repayment status in June, 2005 (scale same as above)
- PAY_5: Repayment status in May, 2005 (scale same as above)
- PAY_6: Repayment status in April, 2005 (scale same as above)
- BILL_AMT1: Amount of bill statement in September, 2005 (NT dollar)
- BILL_AMT2: Amount of bill statement in August, 2005 (NT dollar)
- BILL_AMT3: Amount of bill statement in July, 2005 (NT dollar)
- BILL_AMT4: Amount of bill statement in June, 2005 (NT dollar)
- BILL_AMT5: Amount of bill statement in May, 2005 (NT dollar)
- BILL_AMT6: Amount of bill statement in April, 2005 (NT dollar)
- PAY_AMT1: Amount of previous payment in September, 2005 (NT dollar)
- PAY_AMT2: Amount of previous payment in August, 2005 (NT dollar)
- PAY_AMT3: Amount of previous payment in July, 2005 (NT dollar)
- PAY_AMT4: Amount of previous payment in June, 2005 (NT dollar)

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- PAY_AMT5: Amount of previous payment in May, 2005 (NT dollar)
- PAY_AMT6: Amount of previous payment in April, 2005 (NT dollar)
- default.payment.next.month: Default payment (1=yes, 0=no)

Evaluation Parameters

Evaluation will be based on:

- Data Preparation
- Model Selection
- Presentation

Data Preparation

Analyze the data statistically and treat the multicollinear variables.

Model Comparison

Apply classification algorithms for every change made in the datasets and compare results.

Model Selection

Select the best model. Model selection to be based on accuracy and confusion matrix.

Expected Outcome

Higher accuracy is expected in predicting the outcome using test data.