Case Study of Prediction in Neural Network model for Bankruptcy

20201635 전찬

One of the biggest advantages of Neural network is accuracy. It can predict, classify, or does other job with much more accurate prediction. Thus we can adapt this NN to many areas such as translation, voice recognition, classification, stock market prediction. In this study, researchers did Bankruptcy prediction using NN, and comparing its prediction accuracy with other prediction model. For the result, NN prediction accuracy was 81%, and DA(Discriminant Analysis) was 74%.

One of the Most important things in NN is how to make input / output / hidden layer. In this study, researchers make output as Bankrupt to 0, Nonbankrupt to 1. They use 5 input X1 ~ X5 which are working capital / total assets, retained earnings / total assets, earning / total assets, market value / total dept, sales / total assets. and lastly, they use one hidden layer with 5 nodes. They use 129 data set in this model, dividing 74 training set, 55 test set. they make half and half proportion of bankruptcy or not to make no bias of the data.

As a result, NN model beats DA model with more than 7% of prediction rate, and more than 80% of prediction accuracy model is considered to good model.(>90 great / >80 good / >70 usable)

In this case we see NN prediction was even better in predicting bankruptcy. We can also adapt this NN model in other areas, and can predict that NN model will be the best model in that area.