DEEP LEARNING MODEL ANALYSIS

1 OVERVIEW OF THE ANALYSIS

A neural network model was built using the data of over 34,000 loan applicants to predict the success of campaigns.

2 RESULTS

2.1 Data Preprocessing

- The target is a binary variable called “Success” which indicates whether a given campaign was successful.
- Feature variables include organization type, loan amount and income
- “EIN” and “NAME” are removed from the data set as they do not provide useful information

2.2 Compiling, Training, and Evaluating the Model

- There are two layers with 80 and 40 neurons respectively. “Relu” activation function was used for the last two layers while “sigmoid” was used for the final layer.
- The model didn’t quite reach the 75% accuracy, it hovers around 74%
- Various combinations of activation functions were used, but “relu” always seemed to preform the best. I tried a third layer, but accuracy usually decreased a few points. Decreasing the number of features used also tended to decrease the accuracy score.

3 SUMMARY

Although the target level was not completely achieved, the overall results were favorable. With an accuracy rate of 74%, the model performed significantly better than chance (50% accuracy). While there is room for improvement, it is worth noting that decision tree models could also be considered as suitable alternatives. Decision tree models have the advantage of providing insights into feature importance, which can be valuable in understanding the factors that contribute to the prediction.