Report on the Neural Network Model

Overview of the analysis:

The purpose of this analysis is to evaluate our model accuracy. To do so we need to boost our accuracy. So what we will do is take a data set, take out the columns that have no added value. After having dropped them, we can then look into how many unique values we have. if the value count is low like in our case for some application type, we will have to regroup them by using a condition to put them into one category called other because the machine doesn’t have enough examples of what only one unique value is. To do so we will have to do a cut-off. In this case 500 and we do that by creating a variable. We then do a for loop do be able to regroup. Then we do a classification count of unique values to find the one greater than 1 and then do a cut-off of 1000 and again create another other value. Then we use the dummies code to create more columns so that our model can process the names into numeric value. This is why we binned together the data prior so that it reduces how many columns get dummies is going to produce. Then we want to predict if it’s successful or not. We split them into train and test data. After we are done compiling, we train the model and then see how accurate it is.

How many neurons, layers, and activation functions did you select for your neural network model, and why?

A screenshot of a computer program

Description automatically generated

We have 3 layers. The first layer has 80 neurons, the second has 30 and the third has 1.

I used 2 activation models . reLU and Sigmoid. Sigmoid is used for binary classification, it gives a probability between 0 and 1. Relu is for hidden layers, non linear and positive data.

Were you able to achieve the target model performance?

No since our accuracy was of 0.728. which is low. We should aim for something closer to 0.9-1.

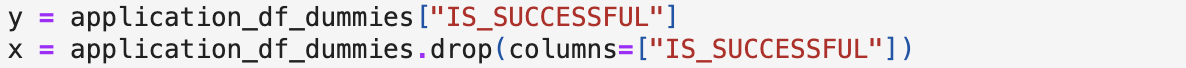
What steps did you take in your attempts to increase model performance?

You can add more neurons , lavers or even change activation functions

**Summary**: Summarize the overall results of the deep learning model. Include a recommendation for how a different model could solve this classification problem, and then explain your recommendation.

The accuracy of the model was 0.7281 which is pretty low. The closer it is to 1 the better. To solve the classification issue, we can use other models such as random forest classifier to get better predictions.

What variable(s) are the target(s) for your model +What variable(s) are the features for your model?



Y is the target variable and X is the feature variable.