**Deep Learning Challenge:**

**Overview:** The purpose of this analysis is to create an algorithm that predicts whether applicants for funding will be successful or unsuccessful. Machine learning uses the features in the dataset to create a binary classifier in which would be capable to predict such success of a non-profit foundation such as the Alphabet Soup.

**Results:** In removing some irrelevant information, I was able to drop EIN and Name columns, I was able to focus more on the remaining features that indicate a more significant role in the data being more accurate for predictions. The target variable for the model labeled “Is\_successful” and is defined as a yes value with the number 1 and a no value with the number 0. I analyzed the application data and used the classification value for binning.

**Data reprocessing:**

What variables are the targets for your model? The variable target in my model include “IS\_SUCCESSFUL” variables.

What variables are the features for your model? The variables that are the features in my model include: Application\_type, Affiliation, Classification, Use\_Case, Organization, Status, Income\_AMT, Special Considerations, and Ask\_Amt.

What variables should be removed from the input data because they are neither targets nor features? The variables I removed from the input data because they are neither targets nor features include “EIN” and “NAME.”

**Compiling, Training, and Evaluating the Model:**

How many neurons, layers, and activation functions did you select for your neural network model, and why? For my neural network model, I had three layers total for each model.

Were you able to achieve the target model performance? Yes

What steps did you take in your attempts to increase model performance? By removing specific feature columns such as “EIN” and “NAME” I was able to increase model performance.

**Summary:**

The initial model had about a 72% prediction accuracy which is well below the required 75%. After performing a better optimized model by getting rid of column features not necessary needed for the model helped to achieve a higher target prediction accuracy model.