**Performance Review – Alphabet Soup Application Success Predictor**

1. **Overview**

A deep learning model has been created for the nonprofit foundation Alphabet Soup. The purpose of this model is to predict whether a funding application is likely to be successful or unsuccessful. However, the model needs to be accurate and trustworthy once generalised and therefore a reviewal of the steps taken to create the model and it’s performance will be undertaken to help create transparency and evaluate the model created.

1. **Results**:

Data Preprocessing

* **Target variable:** ‘IS\_SUCCESSFUL’ – a binary classification of if an application is likely to result in the money being used effectively [successful (1) or unsuccessful (0)].
* **Features:** The variables which are fed into the model to aid prediction:
  + APPLICATION\_TYPE – The type of Alphabet Soup application
  + AFFILIATION – The affiliated sector of industry
  + CLASSIFICATION – Government organisation classification
  + USE\_CASE – Use case for funding
  + ORGANIZATION – Organization type
  + INCOME\_AMT – Income classification
  + SPECIAL CONSIDERATION – Special consideration for the application
  + ASK\_AMT – Funding amount requested
  + What variable(s) should be removed from the input data because they are neither targets nor features?
* Compiling, Training, and Evaluating the Model
  + How many neurons, layers, and activation functions did you select for your neural network model, and why?
  + Were you able to achieve the target model performance?
  + What steps did you take in your attempts to increase model performance?

1. **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.