Neural Network Model HW

1. **Overview** **The purpose of this analysis is to predict whether not applicants for funding will be successful using machine learning and neural networks.**
2. **Results**:

* Data Preprocessing
  + What variable(s) are considered the target(s) for your model?

**IS\_Successful**

* + What variable(s) are considered to be the features for your model?

**APPLICATION\_TYPE**

**AFFILIATION**

**CLASSIFICATION**

**USE\_CASE**

**ORGANIZATION**

**STATUS**

**INCOME\_AMT**

**SPECIAL\_CONSIDERATIONS**

**ASK\_AMT**

* + What variable(s) are neither targets nor features, and should be removed from the input data?

**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?

**1st Attempt: 2 layers, 150 and 100 neurons, 100 epochs**

**2nd Attempt: 2 layers, 150 and 200 neurons, 150 epochs**

**3rd Attempt: 3 layers, 150, 200 and 250 neurons, 200 epochs**

* + Were you able to achieve the target model performance?

**No, the model performance remained at around 74%**

* + What steps did you take to try and increase model performance?

**Increased number of layers and neurons, changed the epochs**

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 explain your recommendation.

#### The model performance remained close to 74% with different attempts. Using feature selection to reduce the number of inputs (X variables) could help in optimizing the model. Some other models worth exploring could be RBF, Multilayer Perceptron and GAN