

1. **Overview** of the analysis: This analysis is about the effectiveness of using a neural net in a classification scenario. As a result of this work, we can see that using a neural net for this kind of scenario is a bit overkill. Using a simpler model like a forest model classifier would yield more accurate predictions.
2. **Results:** Using bulleted lists and images to support your answers, address the following questions.
  - **Data Preprocessing**
    - What variable(s) are considered the target(s) for your model?
      - The target is the IS\_SUCCESSFUL column, it tells whether or not the money was used effectively.
    - 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(Employer Identification Number) was dropped because the model would have implied that those numbers were significant, even though they are just used for identification.
  - **Compiling, Training, and Evaluating the Model**
    - How many neurons, layers, and activation functions did you select for your neural network model, and why?
      - My final model had hidden layers with lots of neurons. This seemed to boost the accuracy. The number of Epochs was increased from 25 to 100 and this also seemed to have a positive effect on the overall accuracy. Keeping the activation function as “relu” and changing the other two functions to “sigmoid” as well as the output function also boosted the accuracy.
    - Were you able to achieve the target model performance?
      - No
    - What steps did you take to try and increase model performance?
      - Using the Sigmoid function seemed to have the greatest effect on the accuracy
  - **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 overall results of the model were poor, only achieving 53.2% accuracy. Using a deep learning model like this is over complicated when only classifying a binary result. Using a RandomForest or KNeighbors classifier would more likely yield a higher accuracy and be able to predict outcomes faster.