Alphabet Soup Funding Neural Network Deep-Learning Challenge

Overview

This deep- learning challenge was to help alphabet soup funding establish a neural network to help them sort through applicants wanting to receive funding and to determine how successful each applicant would be based on different criteria. Given the CSV provided laid out the data containing the thousands of applicants’ information to help determine if they were a good fit for funding. This CSV did include whether the applicant was successful to help train the model.

Results

Data Processing

* The variable that was the target for this model were IS\_SUCCESFUL which was the column that stated whether the applicant was successful or not based on 1 for successful and 0 for not.
* The variables that were features were APPLICATION\_TYPE, AFFILIATION, CLASSIFICATION, USE\_CASE, ORGANIZATION, INCOME\_AMT, INCOME\_AMT.
* The variables that could have been removed from the input data were NAME and EIN as they were not need for the creation of the neural network.

Compiling, Training, and Evaluating the Model

* For the neural network I settled on was using 4 hidden layers with various nodes decreasing per layer. I tried less and more and settled on this being the best one to use. I used more because it allowed for more params to help home in on the accuracy of the model.
* I failed in being able to achieve the 75% but it got 72.5% as my best run for this neural network.
* Trying to increase the accuracy of the model I tried didn’t node layers and number of nodes in each layer. This did show some improvement but not as much as I was hoping for. I tried some other things with dummy variables rendering the model useless, so I did not try changing those. Another thing I could have tried was training based on another variable but with successful applicants in mind it didn’t make sense to train it on anything other than IS\_SUCCESSFUL.

Summary

The overall model didn’t get the overall results of 75% but I was able to get the model to 72.5% which is close to the target but not quite there. Recommendations for this model is using a different method other than Deep learning it could maybe be done in a supervised or unsupervised model that would use a linear regression to get correlations rather than training a model to find out how successful applicants would be with Alphabets funding.