Deep Learning Challenge Analysis

Overview: The purpose of the analysis is to enable the nonprofit foundation, Alphabet Soup, to select the applicants for funding that will have the best chance of success in their ventures. The idea is the use machine learning on a data set of 34,000 organizations that have received funding in the past to classify future applicants based on the likelihood of success.

Results: The data was divided into the target (IS_SUCESSFUL) and the features (originally, all of the other columns, except for EIN and NAME. The variable "STATUS" did not appear to be either a feature or a target in this case. For the neural network model, I experimented with a number of configurations with different numbers of neurons and varying numbers of layers. The results seemed to be optimal with two hidden layers, with the first having 60-80 neurons and the second having 30, and an output layer. However, despite trying numerous configurations including changing the binning for the "other" categories, removing columns, adding more layers, configuring the layers with different activation functions and different amounts of neurons, the accuracy was never much above 73% and no path was found the achieve 75% accuracy.

Summary: The neural network model did not seem to be an optimal fit for this classification problem. Given the time, I would recommend doing a PCA analysis and trying a model like k-means to create the classifications.