

Alphabet Soup Neural Network Model

- This neural network was trained on a dataset consisting of over 34 thousand organizations that have received funding from Alphabet Soup. Throughout these organizations, Alphabet Soup has tracked several external factors that may have had an influence in their success, such as affiliated industry, use case, and income classification amongst many others. The purpose of our analysis is to predict whether future applicants with similar qualities will be successful.
- The target variable for our model is labeled in our dataset as "IS_SUCCESSION", which is a boolean variable measuring whether a venture has been successful or not.
- With the exception of variables "EIN" and "NAME", the features for our model are the remainder of the variables excluding "IS_SUCCESSION", which is the target, or dependent variable. The features are our independent variables, and directly affect the output of our model.
- Variables "EIN" and "NAME" can be dropped from our dataset as they simply identify our data and are neither dependent or independent variables.
- Our original neural network model consists of two hidden layers, both of which use "relu" activation functions and have 10 and 20 nodes, respectively. This original model resulted in an accuracy score of 72.96%

Optimization

- Initially, I added a third hidden layer to the neural network, originally using a "relu" activation function.
- Then I increased the nodes within each hidden layer to 60 in the first, 40 in the second, and 20 in the final hidden layer.
- Finally, I exchanged the activation function in the third hidden layer of our model for a "tanh" activation function.
- However, this still resulted in an accuracy score below 75%, 72.8%.
- I would recommend a different model to Alphabet Soup, due to the accuracy score being below optimal.