

Alphabet Soup Applications

The purpose of this analysis is to select applicants for funding with the best chance of success in their ventures.

Data Pre-processing

- The target variable for this analysis is “IS_SUCCESSFUL”. A value of 1 in this column means that the venture was successful and represents the desired result.
- The features for this model are “[‘STATUS’, ‘ASK_AMT’, ‘APPLICATION_TYPE_Other’, ‘APPLICATION_TYPE_T10’, ‘APPLICATION_TYPE_T19’, ‘APPLICATION_TYPE_T3’, ‘APPLICATION_TYPE_T4’, ‘APPLICATION_TYPE_T5’, ‘APPLICATION_TYPE_T6’, ‘APPLICATION_TYPE_T7’, ‘APPLICATION_TYPE_T8’, ‘AFFILIATION_CompanySponsored’, ‘AFFILIATION_Family/Parent’, ‘AFFILIATION_Independent’, ‘AFFILIATION_National’, ‘AFFILIATION_Other’, ‘AFFILIATION_Regional’, ‘CLASSIFICATION_C1000’, ‘CLASSIFICATION_C1200’, ‘CLASSIFICATION_C2000’, ‘CLASSIFICATION_C2100’, ‘CLASSIFICATION_C3000’, ‘CLASSIFICATION_Other’, ‘USE_CASE_CommunityServ’, ‘USE_CASE_Healthcare’, ‘USE_CASE_Other’, ‘USE_CASE_Preservation’, ‘USE_CASE_ProductDev’, ‘ORGANIZATION_Association’, ‘ORGANIZATION_Co-operative’, ‘ORGANIZATION_Corporation’, ‘ORGANIZATION_Trust’, ‘INCOME_AMT_0’, ‘INCOME_AMT_1-9999’, ‘INCOME_AMT_10000-24999’, ‘INCOME_AMT_100000-499999’, ‘INCOME_AMT_10M-50M’, ‘INCOME_AMT_1M-5M’, ‘INCOME_AMT_25000-99999’, ‘INCOME_AMT_50M+’, ‘INCOME_AMT_5M-10M’, ‘SPECIAL_CONSIDERATIONS_N’, ‘SPECIAL_CONSIDERATIONS_Y’]”
- The variables “APPLICATION_TYPE” and “CLASSIFICATION” were removed from input data.

Compiling, Training, and Evaluating the Model

- In the original model, I used a total of 150 neurons, 2 layers, and 2 activation functions. In my most optimized model, I used a total of 175 neurons, 3 layers, and 2 activation functions. I believed that more neurons and layers may have produced more accuracy but this did not necessarily prove to be the case.
- I was not able to achieve target model performance with these models.
- I attempted to reach target model performance by increasing the number of neural network layers and increasing the number of neurons per layer.

Summary

Overall, the most accurate model was Model 5, which gave results that were 73.1% accurate. My recommendation would be to find a different model to solve this problem, since none of the models created were able to reach target accuracy. I believe that even more neurons may help this model to be more accurate.