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UCB Module 21 Report

The purpose of this analysis is to predict which applicants from the Alphabet Soup applicant pool are to be most successful in their ventures, if we are to grant them funding. In order to train the neural network model to predict which are most likely to be successful, we incorporate the data history of over 34,000 previous organizations who have received funding from Alphabet Soup over the years. The target variables for our neural network model are IS\_SUCCESSFUL, telling us if the funding provided was effectively used(1) not not(0). The features for our model include application type, affiliation, classification, use case, organization, status, income amount, special considerations, and ask amount. The EIN and NAME features were removed from our data due to low utility. In terms of model performance, originally three layers were used, with activations relu, relu, then sigmoid due to documentation suggestion for optimization. However, we were far from reaching target model performance(75%). Due to this, an additional dropout layer was added to try to optimize performance. The amount of neurons used for the model landed on 128 initial, 64, 1(as the outcome is binary). The number of neurons used varied by trial and error in an effort to achieve target model performance. I attempted 5 different variations of neuron configurations, but was unsuccessful in reaching target model performance. I believe with a higher level of epochs target model performance may be reached. I tried different epoch states, and my final attempt included 100.