Deep Learning Project: Charity Funding Predictor

Deep learning and neural networks were used to determine if applicants would be successfully funded by Alphabet Soup, whom previously funded over 34,000 organizations.

**Data Processing**

The dataset removed any irrelevant information; therefore, EIN and NAME were dropped from the model. The remaining columns were considered features for the model. Although NAME was added back in the second test. CLASSIFICATION and APPLICATION\_TYPE was replaced with ‘Other due to high fluctuation. The data was split into training and testing sets of data. The target variable for the model is “IS SUCESSFUL” \_and is verified by the value, 1 was considered yes and 0 was no. APPLICATION data was analyzed, and CLASSIFICATION’s value was used for binning. Each unique value used several data point as a cutoff point to bin “rare” categorical variables together in a new value, ‘Other’. Afterwards checked to see if binning was successful. Categorical variables were encoded by ‘pd. Get dummies(\_).

**Compiling, Training, and Evaluation the Model**

Neural Network was applied on each model multiple layers, three in total. The number of features dictated the number of hidden nodes.

![Graphical user interface, text, application, email

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A three-layer training model generated 477 parameters. The first attempt came close at 72% which was  
under the desired 75%.

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**Optimization**

The second attempt added ‘NAME’ back into the dataset, this time I achieved 79% which was 4% over target. A total of 3,298 params.

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Deep learning models should have multiple layers, since it is machined based it teaches a  
computer to filter inputs through the layers to learn how to predict and classify information.

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