**Background**

Purpose of this project is to predict an algorithm that will predict whether or not applicants for funding will be successful.

**Overview**

Target data was the “IS\_SUCCESSFUL” column.

The feature data were the following:

Application\_Type

Affiliation

Classification

Use\_Case

Organization

Status

Income\_amt

Special\_considerations

Ask\_amt

**Compiling training and evaluation**

Initial attempt to train the model was done while using 2 hidden layers with relu activation and an outer layer using sigmoid activation. First layer had 80 units and layer 2 had 30 units. The optimizer was adam and there were 100 epochs. This model reached an accuracy of 72.77 percent.

Second attempt was done in a similar fashion to the first except hidden layer 1 had 43 units and hidden layer 2 had 25 units. Epochs were also increased to 200. This model received an accuracy of 72.63 percent.

For the third attempt I increased the hidden layers to 3, with the following parameters. Layer 1 20 units, layer 2 40 units, layer 3 80 units. I kept the epochs at 200. This model had an accuracy of 73.22 percent.

The final attempt used 4 hidden layers with the following parameters, layer 1 60 units, layer 2 also had 60 unites. Layer 3 had 40 units and layer 4 had 20 unites. Epochs stayed at 200 but this model was worse than the previous and dropped to 72.66 percent.

I was not able to reach the 75 percent target performance, but I believe I am on the right track and 3 hidden layers better optimized should work.