Overview:

This analysis intends to use a deep neural network to estimate if an applicant for funding will be successful in the future before investing in or granting funding to an organisation.

Results:

Target Variable:

IS\_SUCCESSFUL

Dropped Variables:

EIN

NAME

Feature Variables:

APPLICATION\_TYPE

AFFILIATION

CLASSIFICATION

USE\_CASE

ORGANISATION

STATUS

INCOME\_AMT

SPECIAL\_CONSIDERATION

ASK\_AMT

Compiling, Training, and Evaluation:

An initial model using 24, then 8, units in the first two hidden layers was chosen. This steadily brings down the number of data dimensions, beginning at 45. Trained over 100 epochs, this gave a training accuracy of around 0.49, but only a testing accuracy of 0.72.

Increasing the model size for a range of configurations, adding layers and increasing layer size, was able to bring the training accuracy above the 0.75 mark, but evaluation accuracy stayed around 0.72, even with simplifying down some of the categorical data.

Summary:

A simple deep neural network was not able to achieve good results on this dataset. Given the categorical nature of this dataset, a decision tree may be better suited to this task.