Project Proposal NEA

I will be designing an Artificial Intelligence that can determine what hand written number is shown to it, by utilising the TensorFlow API from Google. Specifically, it will be designed to do optimal image recognition of the famous MNIST data, and I will judge its efficiency by utilising Kaggle: <https://www.kaggle.com/c/digit-recognizer>

* This project requires computer vision fundamentals, as well as simple neural networks.
* Also classification methods such as SVM (Support Vector Machine) and K-nearest neighbours.

I will also be using classes of my Neural Network, to utilise the Tensor Flow Backend which will look something like this:

A screenshot of a cell phone

Description automatically generated

The weighting for the AI and Neural Network will be outputted to a .h5 file, so that the weighting can be called again, allowing people to rerun the application to test the image recognition and AI’s ability to distinguish between different numbers, meaning I will have to use file reading and writing, but specific for a .h5 file.

I will also be utilising several complex user defined algorithms, to allow the AI to tell the difference between different numbers, part of the different complex scientific models and different sigmoids, to ensure that the program will be complex enough.

* I could also extend this to be able to write data from a given table to an excel document. This would allow for ease of use when it comes to translating hand-written tables into digital, editable tables. Adding another layer of simplicity for users.