All of the python files attached are different versions of my AI powered stock predicting python code.

The GPU version is a version I had to slightly edit to utilize the GPU of Google’s colab pro GPU. As explained in my other explanation paper, the GPU and extra disk space from colab pro did not make a difference in the hopes that it would be able to support a larger LLM but it was not able to.

The CPU version is for the smaller LLMs such as ChatGPT2 which was one that I was able to utilize from huggingface and it was able to predict a number but, the number was way off from a predicted value for tomorrow’s apple stock. This code was able to implement the yfinance library from Yahoo Finance’s stock database and I was also able to implement multiple LLMs from huggingface into this project with the use of huggingface tokens.

The methods I have created withing this code are all similar within each version of the code.

1. Fetch\_stock\_data

Very self explanatory, this downloads the yahoo finance stock data from the specific ticker entered in the main method and returns the stock data.

1. Load\_model

This method takes your huggingface token and logs into huggingface API, it then returns the model that you specifically want to use and the tokenizer that you want to use. The model is the specific LLM from huggingface and the tokenizer prepares the inputs for your LLM of choice.

1. Predict\_stock\_price

utilizes a pre-trained language model (model) to generate a stock price prediction based on recent historical data. It constructs a textual prompt from the last five data points of the input stock\_data, asking the model to predict the next day's closing price. The text is tokenized and fed into the model, which generates a text response. The function then extracts a numerical prediction from the model's text output using regular expressions.

1. Main

This is the main method that runs the code, you input the stock ticker for the data you want here and the start and end date of the stock data you want as well. It will then call the load\_model method, the predict\_stock\_price method and formatted prints a sentence about the predicted stock price.