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GitHub URL: https://github.com/isaacsutor/SeniorCapstone

Project URL: N/A

SP500GUI.py:

This is the master file of this project. It is built on the Dash Framework for displaying Plot.ly plots. This is what the user interacts with, the game, and displays the results after the game is over.

SP500.csv:

This file contains the Open, High, Low, Close, Adjusted Close, Volume, and Date for the S&P500 index from January, 1950 until February 2019.

assets folder:

index.css:

CSS file that styles the entire app. Dash requires this be in an “asset folder”. This styles the GUI for the application.

kerasneuralnetfulldata.py:

This file contains the Neural Network that is trained on 85% of the data from January 1950 until November 2008. It is then tested on November 2008 until February 2019 which is the remaining 15% of the data. The data is formatted through MinMaxScaler from 0 to 1 so as to reduce noise and data separation. Then a Sequential, LSTM model was created with the Adam optimizer which uses squared gradients per mini batch to estimate new moments in data. The train score and test score were then produced in terms of Mean Squared Error which is the average squared difference between the estimated values and the actual value. The model and learned weights are stored in model.json and model.h5 respectively in this file.

model.json:

The model setup is saved as the json file model.json. It contains the model type, batch numbers and types, distribution, and everything needed to run more tests or train new data.

model.h5:

The model.h5 file contains the learned weights from my Neural Net trainings. The data can be loaded to a model and then can be used to test on new data or continue testing on data.

README.md:

This is the README file from my GitHub page. It goes into depth on the project, how it works, how to run it, what technologies are used, and how to report issues.

appDesign.jpg:

This picture is my rough sketch of my design for the application. It is hand written because I am not much of an artist. I created it so I could better picture my divs as I built them in Dash.

sysVision.doc:

This document is my vision of what the project was meant to do at the very beginning of this project. It has since adapted down the winding road of the semester, but is included here so it can be compared to the final product and see how things changed from the original idea.

userStories.doc:

This document contains user profiles of people who I may expect to be using my app.