CVPR #01

Final Project: Machine Learning algorithm for Stock value prediction

CS 584 - Machine Learning - Fall 2022

Project Proposal

1. Introduction

1.1. Team members

The team will be made up of two members. On the one hand, ***Julen Ferro Bañales*** CWID:A20512110, currently studying the M.Sc. in Computational Decision Science & Operations Research. On the other hand, ***Eneko Gonzalez*** CWID: A20520157, currently studying the M.Eng. Computer Science.

1.2. Description of the problem

This project will deal with a really known problem in Finance called **'Stock prediction'**. Nowadays, the business environment is quite unstable due to different types of crisis that the world is suffering and the new context that has been given by the globalization. Therefore, the enterprises are forced to find different methods to fight against this uncertainty, in which there are not so used to work compared to the previous 'blue oceans' of economic competitiveness in which they have lived so far.

In order to sum up, this project will try to develop a tool valid for stock prices analysis and prediction. This way, the software that will be developed will try to train an **Artificial Intelligence** algorithm which tries to give an stock price output, based on past stock prices inputs. The insights given by the output of the software may be used as guidance for the consultants of the finance enterprises, due to the fact that the information got by the software will be in terms of likelihood and nothing will be assured.

1.3. Work done so far & project proposal

The authors of the project have just started to get information about the project. It has been a couple of weeks of research until finding an attractive topic and then another week gathering interesting links and bibliography related to the topic [5] [2] [4]. After having delivered the initial report for the project proposal, authors will start with the programming of the algorithm.

In relation to data, in the first instance the idea is to try to make use of systems for downloading and updating data in real time. However, for the early stages of development data-sets that are available in Kaggle [3] [1] will be used.

The election of the topic has been motivated by the idea of prioritizing the development of a hugely important and attractive project. Nevertheless, in order to create a more complex and useful project, originality, creativity, and innovation will be added in form of a more practical and real-use oriented implementation. The details of this aspect will be develop as progress is made.

1.4. Milestones

Oct 1, 2022: Initial Proposal
Oct 20, 2022: Algorithm programming finished
Nov 1, 2022: Intermediate project report (3-5 pages)
Nov 9, 2022: Tentative Final project presentation (5-8 minutes)
Dec 2, 2022: Final project report (8-10 pages)

References

[1] Sourav Banerjee. Nifty-50 stocks dataset, Jul 2022. 1

[2] Faryarmemon. S&P500 stock analysis for beginners, Jul 2022. 1

[3] Larxel. S&P 500 stocks (daily updated), Oct 2022. 1

[4] Liheng Zhang (University of Central Florida);Charu Aggarwal (IBM T. J. Watson Research Center);Guo-Jun Qi (University of Central Florida). Stock price prediction via discovering multi-frequency trading patterns. 1

[5] DataFlair Team. Stock price prediction - machine learning project in python, Aug 2021. 1