

Project Proposal

CS 584 - Machine Learning

Prof: Yan Yan

Title: Stock Price Analysis, Prediction & Benchmarking of different Machine Learning Algorithms.

Project Idea:

We have divided our project into 3 subsets:

- 1) **Benchmarking** the predictions and accuracy of different machine learning algorithms like: LSTM, SVM, RNN, ARIMA, SARIMA, LR. Determining which model is more accurate in capturing the seasonal trends, market emotion, market corrections and whether the market will be bullish or bearish based on historical moves by the market.
- 2) We will be **comparing the top 4 technical financial indicators** like MACD, RSI etc and how accurately they forecast the stock prices.
- 3) We will **determine the market emotion** related to the stock market by gathering the sentiment of the brokers and traders based upon current news and online comments/tweets.

Dataset:

We will be using the stock market data available for the past 5 years from Yahoo finance, Kaggle and any other reliable financial sources.

Progress Milestone:

March	1st April	April	May
Read Base Papers and Implement few models	Intermediate project report including few implemented models	Implement Advanced models and Extend upon the base papers	Final Project Report Submission

References:

- [1]<http://cs229.stanford.edu/proj2017/final-reports/5231579.pdf>
- [2]<http://www.smallake.kr/wp-content/uploads/2017/10/Isaac-Madan-Shaurya-Saluja-Aojia-Zhao-Automated-Bitcoin-Trading-via-Machine-Learning-Algorithms.pdf>
- [3]http://cs230.stanford.edu/projects_fall_2019/reports/26254244.pdf
- [4]<http://cs229.stanford.edu/proj2017/final-reports/5234854.pdf>
- [5]<http://cs229.stanford.edu/proj2017/final-reports/5212256.pdf>
- [6]<http://cs229.stanford.edu/proj2019spr/report/31.pdf>
- [7]<https://towardsdatascience.com/machine-learning-for-day-trading-27c08274df54>
- [8]<http://anmolkapoor.in/2019/05/02/Technical-Analysis-With-Indicators-And-Building-ML-Based-Trading-Strategy-Part-2/>
- [9]<https://www.analyticsvidhya.com/blog/2021/01/algotrading-using-technical-indicator-and-ml-models/>