Stock Price Prediction using Supervised Machine Models

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Idea description:

The purpose of this project is to explore different techniques for forecasting future stock profits based by historical returns and news indicators in order to construct a portfolio of multiple stocks to diversify risk. It does this interpreting seemingly chaotic market data and applying supervised learning methods to predict stock prices.

Goals and Objectives:

To create a portfolio of many equities in order to diversify risk. It accomplishes this by predicting disorganized market data and using supervised learning techniques to forecast stock values.

Motivation:

The Stock market is volatile and has many complex financial metrics. However, technological advancements also offer opportunities for a steady fortune in the stock market and help experts find the most profitable indicators to make better forecasts. is paramount to maximizing the return on stock option purchases while minimizing risk.

Significance:

For financial professionals to manage their assets most effectively, and for academics to develop better and more precise asset pricing models, stock price forecasting is crucial. The ability to forecast stock returns has significant consequences for market efficiency.

Literature Survey:

Stock market forecasts are made using various forecasting models. These forecasting models which leads to prediction of stock.

Many investors have had unusually volatile investment results during the many phases of the request cycle. While volatility may occasionally be less than expected, there is also evidence to suggest that the way volatility is typically evaluated adds to the issue of markets responding erratically and unexpected.

Other fundamental models can be categorized as linear or nonlinear. Direct models that take into account linear trend expectation demonstrate [N. Altay, F. Rudisill, and L. A. Litteral, "Adapting Wright's modification of Holt's method to forecasting intermittent demand," *International Journal of Production Economics*, vol. 111, no. 2, pp. 389–408, 2008.] and the exponential smoothing show, which relegates exponentially diminishing weights for time arrangement forecast [R. G. Brown, "Smoothing, forecasting and prediction of discrete time series," *Courier Corporation*, 2004]. Also, the Autoregressive Coordinates Moving Normal (ARIMA) show picked up energy and is still broadly respected as a noteworthy commitment to time arrangement expectation.

Objectives

to build a portfolio with a variety of stocks in order to spread risk. It achieves this by predicting jumbled market data and projecting stock prices using supervised learning techniques.

Features :

The Features of our project includes :

Feature Extraction

Preprocessing and Cleaning

Twitter Sentiment Analysis and Score

Analysis of various supervised learning methods

Data Normalization

Expected outcome:

Gradient Descent Regressor: Gradient Descent + Boosting

As Bagging (Bootstrap sampling) depends on the assumption that the combination of several independent base learners will considerably reduce the error, Bagging Regressor is designed to work effectively.

As a result, we strive to create as many independent base learners as we can.

By replacing a portion of the original data set with samples, each base learner is produced.

References:

(1) N. Altay, F. Rudisill, and L. A. Litteral, "Adapting Wright's modification of Holt's method to forecasting intermittent demand," *International Journal of Production Economics*, vol. 111, no. 2, pp. 389–408, 2008.

(2) R. G. Brown, "Smoothing, forecasting and prediction of discrete time series," *Courier Corporation*, 2004

(3) http://colah.github.io/posts/2015-08-Understanding-LSTMs/

(4) http://www.investopedia.com/articles/basics/09/simplified-measuring-interpreting-volatility.asp

Github link

Prasaadreddy/Stock-Price-Prediction-using-Supervised-Machine-Models (github.com)