

Introduction

The stock market refers to the collection of markets and exchanges where regular activities of buying, selling and issuance of shares of publicly-held companies take place. To get this into easy understanding have a look at this infographics by that gives breif overview While there has been enough evidence that news can change the market significantly. Taking one of the recent examples into light;

Such financial activities are conducted through institutionalized formal exchanges or over-the-counter (OTC) marketplaces which operate under a defined set of regulations. There can be multiple stock trading venues in a country or a region which allow transactions in stocks and other forms of securities. A stock market, equity market or share market is the aggregation of buyers and sellers of stocks, which represent ownership claims on businesses; these may include securities listed on a public stock exchange, as well as stock that is only traded privately. Leading stock exchanges in the U.S. include the New York Stock Exchange (NYSE), Nasdaq, BATS and Chicago Board Options Exchange (CBOE). These leading national exchanges, along with several other exchanges operating in the country, form the stock market of the U.S.

While both terms - stock market and stock exchange - are used interchangeably, the latter term is generally a subset of the former. If one says that she trades in the stock market, it means that she buys and sells shares/equities on one (or more) of the stock exchange(s) that are part of the overall stock market Though it is called a stock market or equity market and is primarily known for trading stocks/equities, other financial securities - like exchange traded funds (ETF), corporate bonds and derivatives based on stocks, commodities, currencies and bonds - are also traded in the stock markets.

Stock market indexes around the world are powerful indicators for global and country-specific economies. In the United States the **S&P 500**, **Dow Jones Industrial Average**, and **Nasdaq Composite** are the three most broadly followed indexes by both the media and investors. In addition to these three indexes there are approximately 5,000 others that make up the U.S. equity market. In This report different indices have been used for different purpose to serve.

My Proposed Work

The prediction of a stock market direction may serve as an early recommendation system for short-term investors and as an early financial distress warning system for long-term shareholders. The key factor for each investor is to earn maximum profits on their investment

Data: Historical daily price and volume data for all US-based stocks and ETFs trading on the NYSE, NASDAQ, and NYSE MKT.

Approach:

The preprocessing will consist of normalization and the creation of windows. Creation of the LSTM model, Training the LSTM model, Testing the LSTM model.

NLP has been applied to extract information from text and use it in our computations associated with stock index to analyse the stocks accordance with daily news.

To push the limits of computing power, model performance and computational speed. XGBoost minimizes a regularized (L1 and L2) objective function that combines a convex loss function (based on the difference between the predicted and target outputs) and a penalty term for model complexity (in other words, the regression tree functions). The training proceeds iteratively, adding new trees that predict the residuals or errors of prior trees that are then combined with previous trees to make the final prediction. It's called gradient boosting because it uses a gradient descent algorithm to minimize the loss when adding new models.