e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:04/Issue:05/May-2022 Impact Factor- 6.752 www.irjmets.com

STOCK PRICE PREDICTOR USING STREAMLIT

Shubham. R. Tawale[*1], Gaurav. S. Jawalkar[*2], Sanket .S. Pathare[*3], Prof. Satish. D. Kale[*4]

[*1,2,3]Student, Department of IT, JSPM'S Jaywantrao Sawant Polytechnic, Pune, Maharashtra, India.

[*4]Prof. Department of IT, JSPM'S Jaywantrao Sawant Polytechnic, Pune, Maharashtra, India.

ABSTRACT

One of the most important practices in the financial world is stock trading. The process of trying to predict the price of a particular stock or share using the data available in the market is called as the stock price prediction and In this paper we have developed a model based on Lstm and machine learning to predict the price and The Training model we have developed works on the 70:30 principle where the 70% of the data about a company is given to the training part and 30% to the prediction part so the model gets better over Time.

Keywords: Stock, LSTM Model, Machine Learning, Prediction, Deep Learning, Yahoo Finance, Keras, Streamlit.

I. INTRODUCTION

The financial market or Stock market is a complex, composite mechanism that allows people to buy, sell and buy currencies, stocks, bonds, and tax credits worldwide. The stock market allows investors, through exchange or over-the-counter trading, to own stocks in the public company. This business model allows investors to make a living in low risk of initial sums of money and a low risk of opening a new company or high wage proficiency. Many factors that create uncertainty and high volatility in the stock markets are also affecting the stock markets of other sectors. These factors include increases in liquidity in the financial markets, reputational factors, and spread uncertainty. However, macro or microeconomics like interest rates, exchange rates and monetary policy can easily influence inventory price, which makes prediction into a difficult task but the experience which the model will get over time will make them into a valuable source from which data will be imported over time.

II. METHODOLOGY

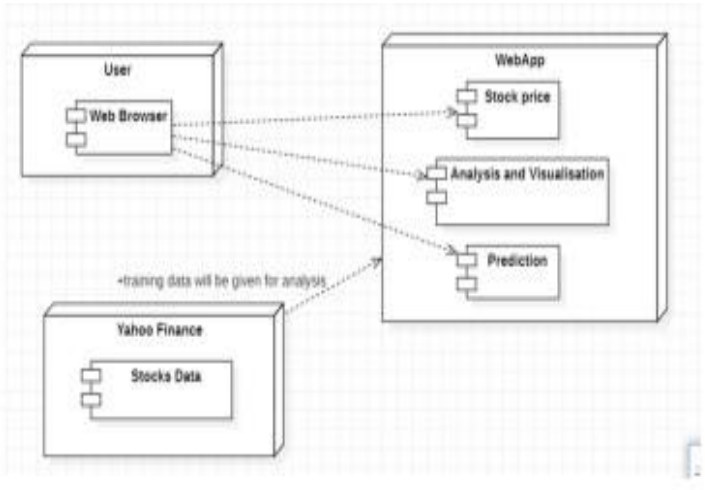

Figure 1: Proposed Architecture

There were several studies on predicting stock price trends for a daily period, mainly for the development of models incorporating various data sources such as news articles, twitter data, google data and Wikipedia data. The effect on stock price movements has been shown by all these external factors in combination with stock prices and technical stock indicators. The study made use of the yahoo finance module, which is basically a Python scraper which extracts financial data from the Yahoo Finance home page In Fig 1, facebook prophet a web based application which predicts stock prices of particular companies, which are used in this project to forecast stock market prices and building a Recurring with LSTM cells as the latest state of forecasting.

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:04/Issue:05/May-2022 Impact Factor- 6.752 www.irjmets.com

The main aim of this research is to help stock market investors predict the behaviour and/or direction of stock market prices in order to participate in a long-term profit trend.

III. MODELING AND ANALYSIS

LSTMs are very powerful in sequence prediction problems because they're able to store past information. This is important in our case because the previous price of a stock is crucial in predicting its future price.

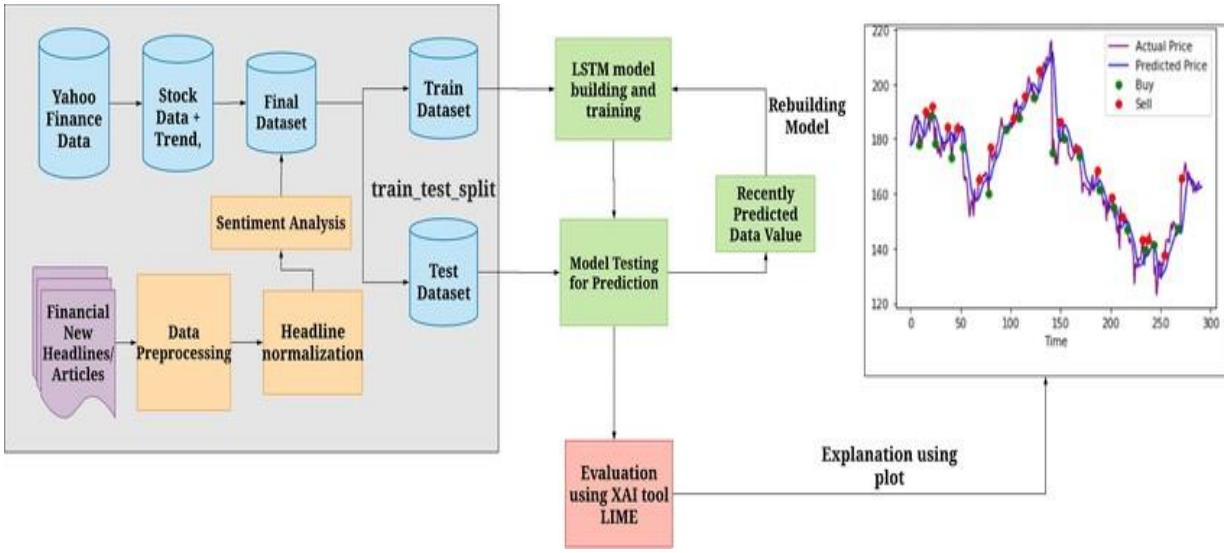

Figure 2: LSTM MOODEL.

IV. RESULTS AND DISCUSSION

Figure 3: Prediction

Using data scraped from Yahoo Finance, which was raw and complex, to train the algorithm Build an LSTM has an output layer, one neuron, and a dense input layer that needs a sequence of values consist of sequence_length consecutive time steps (days) and inputs to the scalar output layer. Build the LSTM. Then we used the refined dataset to train the LSTM model, which produced realistic results.

TensorBoard was also used during the learning phase to visualize model output. The model was trained to reach a decision using a set of FY in a range of the variables'. Fig.3.

e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:04/Issue:05/May-2022 Impact Factor- 6.752 www.irjmets.com

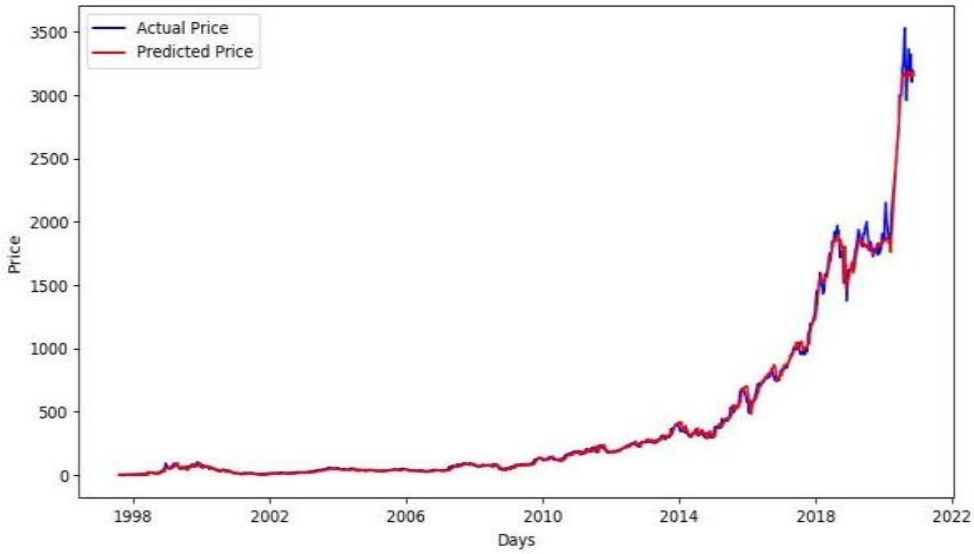

Figure 4: Time Series Prediction Curve showing Yahoo Finance

Chart Explanation and Model Metrics

Fig. 4 is a graphical representation of model prediction with the red line indicating prediction curve in Fig. 3. Whilst Fig. 3 shows an almost flat but gradual growth of stock from the year 1998 - 2010. However, 2010 has a significant growth, of which improved through 2018 to 2022. As such our model at the point of testing and training using Yahoo_Fin, assumed that within fifteen days the price of AMAZON amongst other stock will be , using available metrics in python pandas programming language.

Model Metrics

1. We get about 20 error, which means, in average, the pricing solution is far by over 20$ to the true price, in the case of a fact circle prediction, it might decreased 20 error, the error will vary from ticker to another. Therefore, in order to compare the models when the ticker is stable, you should use this metric to compare the models ii. Buy/Sell profit: This is the profit we get upon account of opening trades on all the testing samples, these were calculated on get_final_df()

2. Total profit: This is simply the sum of investment and depreciation.

3. Profit per trade: This is the general formula for the percentual profit rate is the ratio of the total profit to the total number of testing samples.

4. Accuracy score: This is the score of how accurate our forecasts are, this calculation is based on the positive profits we receive from the trade of tests.

V. CONCLUSION

In recent years, it has been noted that a majority of people were investing in the stock market because of the fast rate of return of the stock market. At the same time, an investor stands a good risk of losing all his or her money. As a result, for the consumer to understand future market trends, an effective predictive model is needed. There are several predictive models that tell whether the economy is going up or down, but they do not always produce reliable results. An attempt has been made to develop an effective stock market predictive model that forecasts the next day's trend using with the help of facebook-prophet model predictions are significantly off. This is because of the error between the model and the actual prices. Therefore, you can only use this metrics to compare the models when the ticker is in not varying.

ACKNOWLEDGEMENTS

1. Prof. R.P.Bembade. (Head Of Department)
2. Prof. Satish.D.Kale. (Guide)
3. Prof. Monoj.B.Shinde. (Project-Coordinator)

VI. REFERENCES

[1] Atsalakis GS, Valavanis KP. (2018). Forecasting stock market short-term trends using a neuro-fuzzy based methodology. Expert Syst Appl. 2009;36(7):10696–707. Computer Systems, vol. 79, pp. 960–972.

[2] Fischer T, Krauss C. (2018). Deep learning with long short-term memory networks for financial market predictions. Eur J Oper Res. 270(2):654–69.

[3] Gareja Pradip, Chitrak Bari, J. Shiva Nandhini (2018). Stock market prediction using machine learning. International Journal of Advanced Research and Development

[4] Khedr, Ayman E., and Nagwa Yaseen. (2017). Predicting stock market behaviour using data mining technique and news sentiment analysis." International Journal of Intelligent Systems and Applications 9.7.

[5] Lei L. (2017). Wavelet neural network prediction method of stock price trend based on rough set attribute reduction. Appl Soft Comput J. 2018;62:923–32.

[6] Lin Z. (2018). Modelling and forecasting the stock market volatility of SSE composite index using garch models, Future Generation

[7] Maini, Sahaj Singh, and K. Govinda. (2017). Stock market prediction using data mining techniques." 2017 International Conference on Intelligent Sustainable Systems (ICISS). IEEE

[8] Nekoeiqachkanloo H, Ghojogh B, Pasand AS, Crowley M. (2019). Artificial counselor system for stock investment. ArXiv Preprint arXiv :1903.00955.

[9] Sun J., Xiao K., Liu C., Zhou W., and Xiong H. (2019). Exploiting intra-day patterns for market shock prediction: a machine learning approach," Expert Systems With Applications, vol. 127, pp. 272– 281.

[10] Tsai CF, Hsiao YC. (2010). Combining multiple feature selection methods for stock prediction: union, intersection, and multiintersection approaches. Decis Support Syst

[11] Weng B, Lu L, Wang X, Megahed FM, Martinez W. (2018). Predicting short-term stock prices using ensemble methods and online data sources. Expert Syst Appl

[12] McNally S, Roche J, Caton S. (2018). Predicting the price of bitcoin using machine learning. In: Proceedings—26th Euromicro international conference on parallel, distributed, and network based processing, PDPpp.339–43