A Machine Learning-Based Stock Price Prediction Model that Uses On-Chain Data

Mr.Noor Mohammed[1],R.Mohith SaiTeja[2],D.Sravani[2],G.Nikhiteswari[2],K.Lavanya[2],S.Shajiya Banu[2], T.Tarun[2]

[1] Assistant Professor, Sanskrithi School of Engineering, Puttaparthi, Andhra Pradesh, India

[2] Department of Computer Science and Engineering, Sanskrithi School of Engineering, Puttaparthi, Andhra Pradesh

A B S T R A C T

Due to its fundamental tenets of decentralisation and transparency, the stock market has recently drawn a lot of interest from investors. Given the volatility and distinctive qualities of cryptocurrencies, precise price prediction is crucial for creating effective trading strategies. In order to achieve this, the authors of this paper provide a cutting-edge framework that forecasts the price of a dominant stock. The change point detection technique is used for steady prediction performance in unobserved price range. Time-series data are segmented in particular so that normalisation can be carried out individually based on segmentation. On-chain data is also gathered and used as an input variable to forecast prices. On-chain data are the distinct records listed on that are intrinsic in the stock market. Additionally, this project

Keywords: Stock Price Prediction, LSTM, ARIMA, Recommendations, Machine Learning

1. Introduction

The goal of LSTM stock market prediction is to create a machine learning model that can precisely forecast future market or stock patterns based on historical data. In order to estimate future price movements, it is important to take advantage of the capabilities of LSTM (Long Short-Term Memory) neural networks to identify complex temporal correlations and patterns in the stock data. The model should be able to recognise important characteristics that can aid in forecasting future trends by learning from a big dataset of historical stock prices. For the model to be applied to real-world trading applications, it must be reliable, accurate, and able to generalise well to new data.

Series of time

2. Literature Review

Jingyi Shen and M. OmairShafq [1] In this paper they substantially bandied about three major corridor data birth and pre-processing of the Chinese stock   request dataset, carrying out point engineering, and stock price trend vaticination model grounded on the long short- term memory (LSTM). They applied the point expansion (FE) approaches with recursive point elimination (RFE), followed by top element analysis (PCA), to make a point engineering procedure that's both effective and effective.

Xiongwen Pang, Zhou, Pan Wang, Weiwei Lin, Victor Cha, [2] In this paper they explained the vaticination of a stock price using Machine literacy. The specialized and abecedarian or the time series analysis is used by the utmost of the stockbrokers while making the stock prognostications.

VaniPriyaC.H, ThammiReddy.K, IN Satapathy, Avadhani.P., Udganta.S., Lakshmi Narayana [3] This paper missions about, stock request vaticination models are one of the most grueling fields in computer wisdom. Stock request vaticination is the act of trying to determine the unborn value of a company stock or other fiscal instrument traded on a fiscal exchange. The being model are prognosticating stock request prices either by using machine learning through the statistical data (LSTM), with the intent of perfecting delicacy.

3. Design and Development:

1. **System Architecture**

Fig   1:
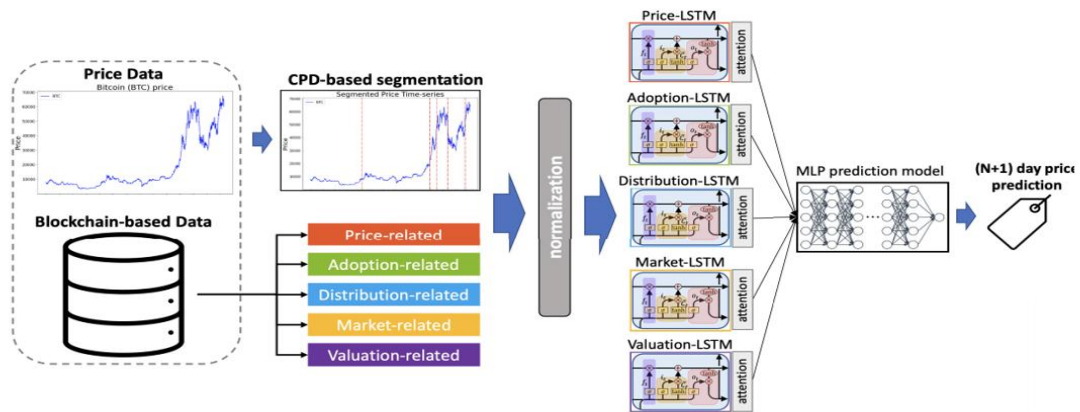
System Architecture

2. Data Flow Diagram:

The DFD is also called as bubble map. It's a simple graphical formalism that can be used to represent a system in terms of input data to the system, colorful processing carried out on this data, and the affair data is generated by this system. The data inflow illustration (DFD) is one of the most important modeling tools. It's used to model the system factors. These factors are the system process, the data used by the process, an external reality that interacts with the system and the information flows in the system. DFD shows how the information moves through the system and how it's modified by a series of metamorphoses. It's a graphical fashion that depicts information inflow and the metamorphoses that are applied as data moves from input to affair.
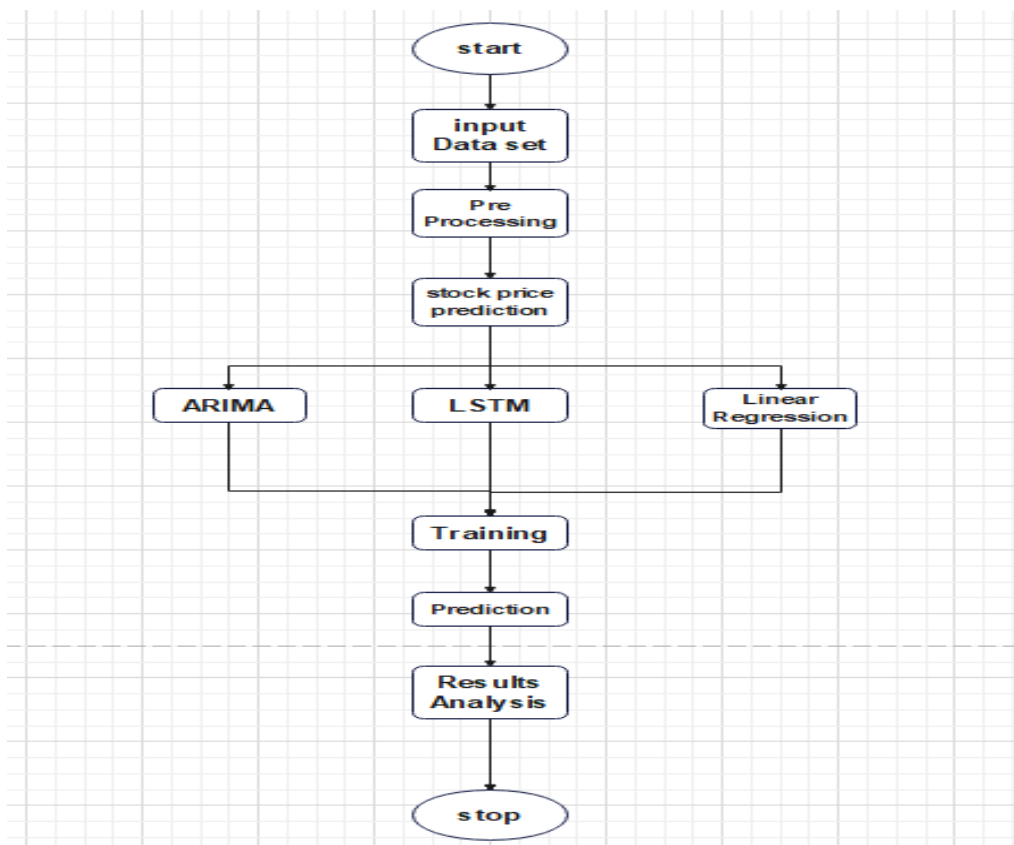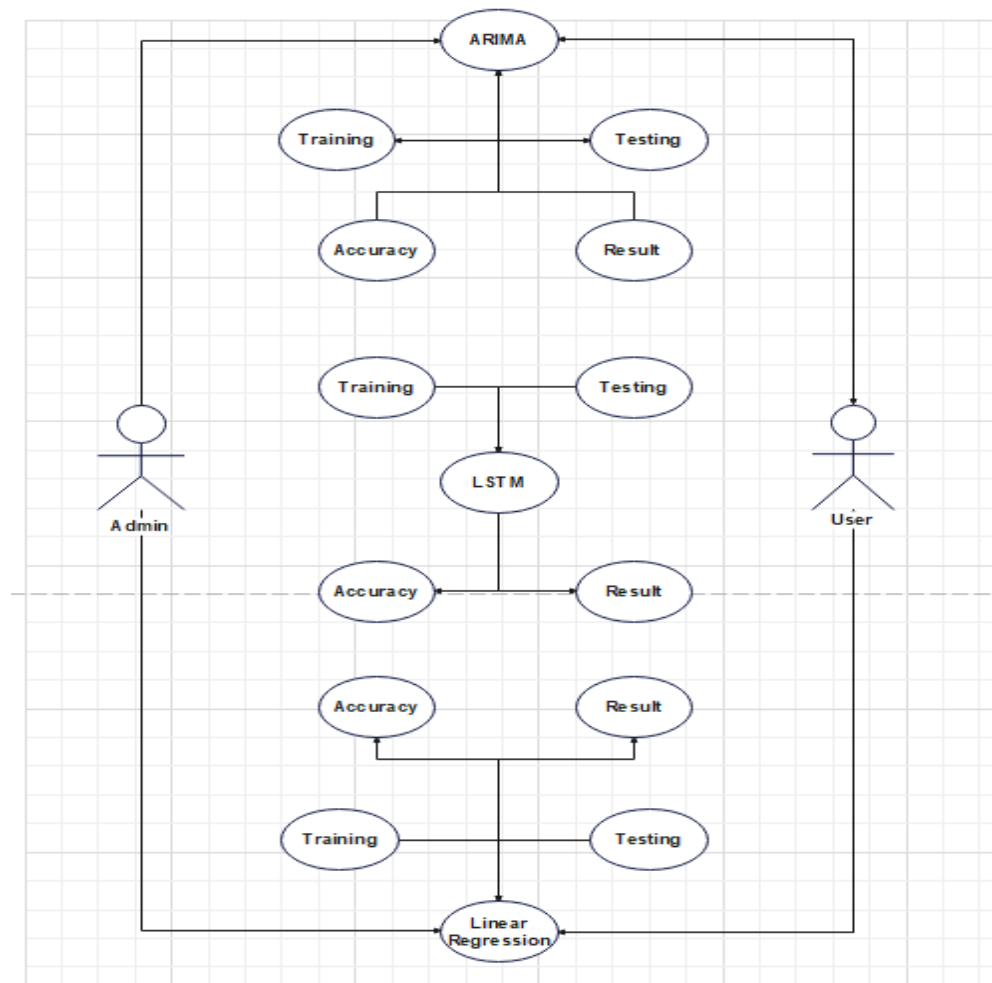

Fig 2:Data Flow Diagram

4. Model

Fig 1: Use Case Diagram of Stock Market Price Prediction

In this paper, we proposed an armature of a use case illustration that represents the processes of furnishing the former dataset to the system also the system start to prognosticate the data with different algorithms and give the accurate prognosticated data. The study of the Use case illustration provides detailed information about the process of the recommendation system, it consists of several way which are easy to understand by everyone and the use case illustration describes the high- position function and compass of the system and explains how druggies will perform tasks on a particular task. The recommendation process then considered of six ways landing the image, Processing the captured image, Facial emotional discovery, recommending content, Searching for content, and Feedback. These ways are used to explain detailed information on how the process will start, and work, and gives the result to the stoner.

5. Outputs and Results:
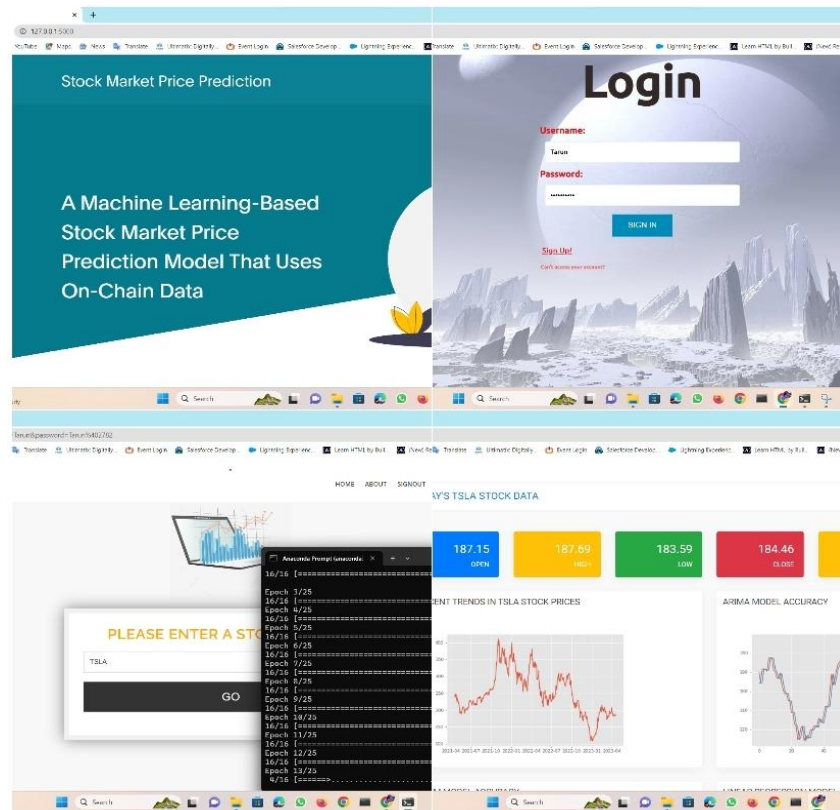
Fig3: Predicted Price of Tesla Stock.

6. Conclusion

In this project, we proposed the use of the data collected from different global financial markets with machine learning algorithms in order to predict the stock index movements of different companies. Various machine learning based models are proposed for predicting the daily trend of market stocks. Numerical results suggest the high efficiency. The practical trading models built upon our well-trained predictor. These model generates higher profit compared to the selected benchmarks.

Acknowledgements

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