Stock Market Predictor And Analyzer

### A Project Work Synopsis

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# IN

### BIG DATA AND ANALYTICS

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**TITLE OF PROJECT:**

##### Stock market analyzer and predictor

Stock market prediction is the act of trying to determine the future value of a company stock or other financial instrument traded on an exchange. The successful prediction of a stock's future price could yield significant profit.

Any time the market begins to decline, investors wonder how far down it'll go — but that's nearly impossible to predict Inflation has been enemy No. 1 for investors, shoppers and the Federal Reserve in 2022. The most recent monthly consumer price index revealed 9.1% inflation compared with a year ago, the largest year-over-year increase since 1981.

**ABSTRACT**

The purpose of the project entitled as “STOCK MARKET ANALYZER AND PRIDICTOR ”. The stock market where returns and risks fluctuate wildly, and both financial institutions and regulatory authorities have paid sufficient attention to it. As a method of asset allocation, stocks have always been favored by investors because of their high returns. The research on stock price prediction has never stopped. In the early days, many economists tried to predict stock prices. Later, with the in-depth research of mathematical theory and the vigorous development of computer technology, people have found that the establishment of mathematical models can be very good, such as time series model, because its model is relatively simple and the forecasting effect is better. Time series model is applied in a period of time The scope gradually expanded. However, due to the non-linearity of stock data, some machine learning methods, such as support vector machines. Later, with the development of deep learning, some such as RNN, LSTM neural Networks, they can not only process non-linear data, but also retain memory for the sequence and retain useful information, which is positive. It is required for stock data forecasting. This article introduces the theoretical knowledge of time series model and LSTM neural network, and select real stocks in the stock market, perform modeling analysis and predict stock prices, and then use the root mean square error to compare the prediction results of several models. Since the time series model cannot make good use of the non-linear part of the stock data, can’t perform long-term memory, and LSTM neural network makes better use of non-linear data and has better use of sequence data. Useful information in the long-term memory, which makes the root mean square error of the prediction result.

# 1.INTRODUCTION

# PROBLEM DEFINITION

Stock market prediction using machine learning**:**Prediction of stock price index movement is regarded as a challenging task of financial time series prediction. An accurate prediction of stock price movement may yield profits for investors. Due to the complexity of stock market data, development of efficient models for predicting is very difficult.

**System:**An accurate prediction of stock price movement may yield profits for investors. Due to the complexity of stock market data, development of efficient models for predicting is very difficult.

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**1.2 PROJECT OVERVIEW /SPECIFICATION**

Stock Price Prediction using machine learning helps you discover the future value of company stock and other financial assets traded on an exchange. The entire idea of predicting stock prices is to gain significant profits. Predicting how the stock market will perform is a hard task to do.

**SPECIFIC REQUIREMENTS**

EXTERNAL INTERFACES

The different types of interfaces that we would come across while developing the Airline Reservation System application are as follows:

• User Interface

• Hardware Interface

• Software Interface

**CONSTRAINTS**

Stock market or Share market is one of the most complicated and sophisticated way to do business. Small ownership, brokerage corporations, banking sector, all depend on this very body to make revenue and divide risks; a very complicated model. However, this paper proposes to use machine learning algorithm to predict the future stock price for exchange by using open source libraries and preexisting algorithms to help make this unpredictable format of business a little more predictable.

**FUNCTIONAL REQUIREMENTS**

Functional requirements deal with the functionality of the software in the engineering view. The component flow and the structural flow of the same is enhanced and described by it. The functional statement deals with the raw datasets that are categorized and learning from the same dataset. Later the datasets are categorized into clusters and the impairment of the same is checked for the efficiency purpose. After the dateset cleaning the data are cleansed and the machine learns and finds the pattern set for the same it undergoes various iteration and produce output.

**1.3 HARDWARE SPECIFICATION**

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**1.4 SOFTWARE SPECIFICATION**

* Random Forest reaches highest recall rate.
* Logistic Regression reaches highest precision and f-score. ...
* KNN is the worst algorithm among the four algorithms for prediction in terms of accuracy.
* Time taken for building of KNN algorithm is higher than the others.

**2 LITERATURE REVIEW**

In the arena of global competition, organizations all over the world are competing through the use of the most comprehensive and advanced technological features. The most common example of innovation is in the area of information technology and communication. Various industries are using technology and the advancements of software and internet to maintain and monitor their business transactions. In the application of the informative systems, the airline industry is the most commonly used system. This chapter explores the concept of reservation information system, their history, components, types and their applications in real world situation to solve problems.

* 1. **EXISTING SYSTEM OF AIRLINES RESERVATION SYSTEM**

In the existing system the exams are done only manually but in proposed system we have to computerize the exams using this application.

* Lack of security of data.
* More man power.
* Time consuming.
* Consumes large volume of pare work.
* Needs manual calculations.
* No direct role for the higher officials.
  1. **PROPOSED SYSTEM OF AIRLINES RESER**
  2. **VATION SYSTEM**

The aim of the proposed system is to develop a system of improved facilities. The proposed system can overcome all the limitations of the existing system. The system provides proper security and reduces the manual work.

* Security of data.
* Ensure data accuracy.
* Minimize manual data entry.
* Minimum time needed for the various processing.
* Greater efficiency.
* Better service.
* User friendliness and interactive
* Minimum time required.

# 3.PROBLEMFORMULATION

The existing system fails when there are rare outcomes or predictors, as the algorithm is based on bootstrap sampling .The previous results indicate that the stock price is unpredictable when the traditional classifier is used.The existence system reported highly predictive values, by selecting an appropriate time period for their experiment to obtain highly predictive scores.The existing system does not perform well when there is a change in the operating environment. It doesn’t focus on external event in the environment , like news events or social media. It exploits only one data source, thus highly biased

# 4.OBJECTIVES

Stock market prediction aims to determine the future movement of the stock value of a financial exchange.

The accurate prediction of share price movement will lead to more profit investors can make.

# 5.METHODOLOGY

The methodology describes the procedures, tools, techniques that were employed to achieve the specific objectives of the airline reservation system for Rwenzori Airlines. The development of the System was based on the model below. It involved requirement determination, requirement analysis, system design, implementation, testing and validation. This approach below describes the sequence of steps involved.

#### CONCLUSION AND FUTURE SCOPE

#### Conclusion: Conclusion Thus, as we can see above in our proposed method, we train the data using existing stock dataset that is available. We use this data to predict and forecast the stock price of n-days into the future. The average performance of the model decreases with increase in number of days, due to unpredictable changes in trend. The current system can update its training set as each day passes so as to detect newer trends and behave like an online-learning system that predicts stock in real-time. Stock Market Prediction.

#### Future Scope:-

The limitation of the proposed system is its computational speed, especially with respect to sliding-window validation as the computational cost increases with the number of forward day predictions.

• The proposed model does not predict well for sudden changes in the trend of stock data.

* This occurs due to external factors and real-world changes affecting the stock market.
* We can overcome this by implementing Sentiment Analysis and Neural Networks to enhance the proposed model.
* We can modify the same system to an online-learning system that adapts in real-time. Stock Market Prediction.

#### · This project can be upgraded by adding more options such as Ticket editing and more admin operations.

#### · Payment options and document checking such as ID proofs can be added.

#### · Applications can be upgraded by improving performance as per user feedback.

**6.References:**

*<https://www.w3schools.com/html/>*

*<https://www.javatpoint.com/servlet-tutorial>*