# Stock Market Prediction Using ML

## A Project Work Synopsis

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#### 1 INTRODUCTION

In the era of big data, deep learning for predicting stock market prices and trends has become even more popular than before. Stock market is one of the major fields that investors are dedicated to, thus stock market price trend prediction is always a hot topic for researchers from both financial and technical domains. It has been a critical area of research and is one of the top applications of machine learning, which has spurred the interest of researchers over the years to develop better predictive models. Due to the fluctuating nature of the stock, the stock market is too difficult to predict. Stock prices are constantly changing every day.

Investors must predict the future stock value of companies in order to obtain high proﬁts. Various prediction techniques have been developed to do predictions on the stock market accurately. Two methods that are widely used in general are namely Fundamental Analysis and Technical Analysis. In this approach, we are using the technical analysis by using LSTM (Long Short-Term Memory) method. LSTM, Recurrent Neural Network, one of the popular deep learning models, used in stock market prediction. In this task, we will fetch the historical data of stock automatically using python libraries and fit the LSTM model on this data to predict the future prices of the stock.

#### 2 LITERATURE REVIEW

For our project we did a lot of research and below we are providing all the links from we studied.

(We are proving links for a better and clear understanding as the information is too big to be written here.)

1. Long Short-Term Memory (LSTM):- <https://www.geeksforgeeks.org/deep-learning-introduction-to-long-short-term-memory/>
2. Linear Regression: - <https://www.geeksforgeeks.org/ml-linear-regression/>
3. Simple Moving Average:- <https://www.investopedia.com/terms/s/sma.asp#:~:text=A%20simple%20moving%20average%20(SMA)%20is%20an%20arithmetic%20moving%20average,periods%20in%20the%20calculation%20average.>

#### PROBLEM FORMULATION

#### The challenge of this project is to accurately predict the future closing value of a given stock across a given period of time in the future. For this project we will use a Long Short Term Memory networks – usually just called “LSTMs” to predict the closing price of the 1 S&P 500 using a dataset of past prices .In this project we are going to collect a sufficient amount of historical stock data. Using the data to train a dataset. Once trained, it can be used to predict stock behaviour. The particular algorithms and indicator on which the prices would be predicted will be moving averages, Bollinger bands and Fibonacci series.

#### 4 OBJECTIVES

The proposed work is aimed to carry out work leading to the development of an approach for Stock Price Prediction The proposed aim will be achieved by dividing the work into following objectives:

1. Create a Machine learning model

2. Design website to show real time data

#### METHODOLOGY

The following methodology will be followed to achieve the objectives defined for proposed research work:

1. Detailed study of stock market and different indicators to predict future prices will be done.
2. Create a Machine Learning model and feed API data to predict future prices by using linear regression and LSTM neural network

**TENTATIVE CHAPTER PLAN FOR THE PROPOSED WORK**

**CHAPTER 1: INTRODUCTION**

This chapter will cover the overview of ...................................

**CHAPTER 2: LITERATURE REVIEW**

This chapter include the literature available for ............................... The findings of the researchers will be highlighted which will become basis of current implementation.

**CHAPTER 2: BACKGROUND OF PROPOSED METHOD**

This chapter will provide introduction to the concepts which are necessary to understand the proposed system.

**CHAPTER 4: METHODOLOGY**

This chapter will cover the technical details of the proposed approach.

**CHAPTER 5: EXPERIMENTAL SETUP**

This chapter will provide information about the subject system and tools used for evaluation of proposed method.

**CHAPTER 6: RESULTS AND DISCUSSION**

The result of proposed technique will be discussed in this chapter.

**CHAPTER 7: CONCLUSION AND FUTURE SCOPE**

The major finding of the work will be presented in this chapter. Also directions for extending the current study will be discussed.