Introduction

Machine learning is a part of artificial intelligence (AI). It is based on making computers to learn from data and improve via learning from data instead of being explicitly programmed to do so. Machine learning is a process were algorithms are trained to relations in large data sets and to make the best decisions and predictions by the analysis. Machine learning models improve with more use and become more accurate with more data . Applications of machine learning are found every where in our day to day life like our homes, working life ,travel and financial markets.An artificial neural network (ANN) uses neurons in a biological brain. Artificial neurons are also knowns as nodes and are clustered together in multiple layers, in parallel format . When an artificial neuron gets a numerical signal, it processes it and passes command to other neurons connected to it. Like in a human brain, neural reinforcement results in learning patterns and getting insights from the previous learning

Deep learning is a part of machine learning that helps computers to do what naturally human brain can do that is learning by example. Deep learning is one of the important tech behind driverless cars, that helps them to recognize a stop sign, or to distinguish between walking persons and car. Deep Learning consists various features such Image Recon that is CNN working with text Data that is NLP The libraries that you can practice Deep Learning include Scapy , NLTK , tensorflow ,opencv .In deep learning, a computer model learns to perform classification tasks directly from images, text, or sound. Deep learning models can achieve state-of-the-art accuracy, sometimes exceeding human-level performance. Models are trained by using a large set of labeled data and neural network architectures that contain many layers. Stock market is non-linear and volatile and it is very difficult to extract the valuable information from patterns. Stock market is one of the most important institutions of any economy . In the past, several researchers have proposed innovative approaches to predict stock prices. Researchers have used Linear regression, Support Vector Machines [1].

Deep learning based on neural network has attracted a number of researchers from the field of Deep Learning . Neural network is a complex nonlinear dynamic system, therefore, what other method can’t deal with low efficiency of complex and nonlinear system can be through neural network method, this method is characterized by handling mechanism can highly parallel, topological structure performance is very flexible, operation ability is extremely powerful, nonlinear operation faster and stronger ability of self learning organization. This method has been paid attention to in the research field.[2]

Long Short Term Memory Network is an advance form of RNN. It is a sequential network, that allows information to persist. The LSTM model solves the problem of vanishing Gradient problem caused by RNN by which the model forget certain information about the data .While you are watching a video you remember the previous scene or while reading a book you know what happened in the earlier chapter. Similarly RNNs work, they remember the previous information and use it for processing the current input. .The main problem with RNN is that it cannot remember Information for long period of time.

Conclusion and future Work

In the following paper we have studied about the LSTM model an prediction of the stock prices through by the model using the stock data such as opening and closing price. In the further research we can different time series Forecasting model such as ARIMA , SARIMAX, FbProphet. We can also consider different parameters Data parameters such volume of stock, uptrend and downtrend in market the economy of the country and macroeconomic factors that affet the market. More research can also be done on tuning the Model by changing the model parameters .In the above paper we have trained the data with two different model to increase the accuracy and precision. Different compliers are to be tested different loss functions must be tested different optimizers must be tested .The best parameters must be used to get the best model

Implementation Details

* Stock data is continuous and is fetched from Yfinance using Pandas Data Reader
* The data is fetched by pandas Data Reader into Dataframe
* The data frame is further used for future Prediction
* The data frame is analyzed for the closing price
* The data is divide into X and Y data frame X consists of the closing price and Y consists of target price
* The X and Y data frame is divided into four parts that is X\_train, X\_test, Y\_train, Y\_test.
* The X\_train constist of 10 days continuous data and Y\_train consist of the 11 day data to predict
* This creates the continuous flow of data that help in prediction
* The model is created with Keras Using LSTM layers
* The optimizer and loss function is created
* The model is compiled and the training data is fitted on the model
* The accuracy and precision is checked and the model is saved
* The front end of the software is made using streamlit and model is used for prediction