A MINI PROJECT REPORT

Submitted in partial fulfillment of the requirements for the award of the degree of

Bachelor of Technology

in

COMPUTER SCIENCE AND ENGINEERING

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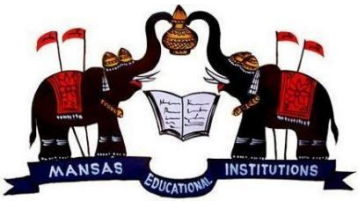

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

MVGR COLLEGE OF ENGINEERING (Autonomous)

VIZIANAGARAM-535005, AP (INDIA)

(Accredited by NBA, NAAC, and Permanently Affiliated to Jawaharlal Nehru Technological University Kakinada)

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CERTIFICATE

This is to certify that the project report entitled "**STOCK PREDICTION**" is being submitted by **K. HEMANTH, K. KOWSHIK, K. ANKITHA, P. DEEPAK** bearing registered numbers **19331A0573, 19331A0578, 19331A0582, 19331A05C4** respectively, in partial fulfilment for the award of the degree of "**Bachelor of Technology" in Computer Science and Engineering** is a record of bona-fide work done by them under my supervision during the academic year 2022-2023.

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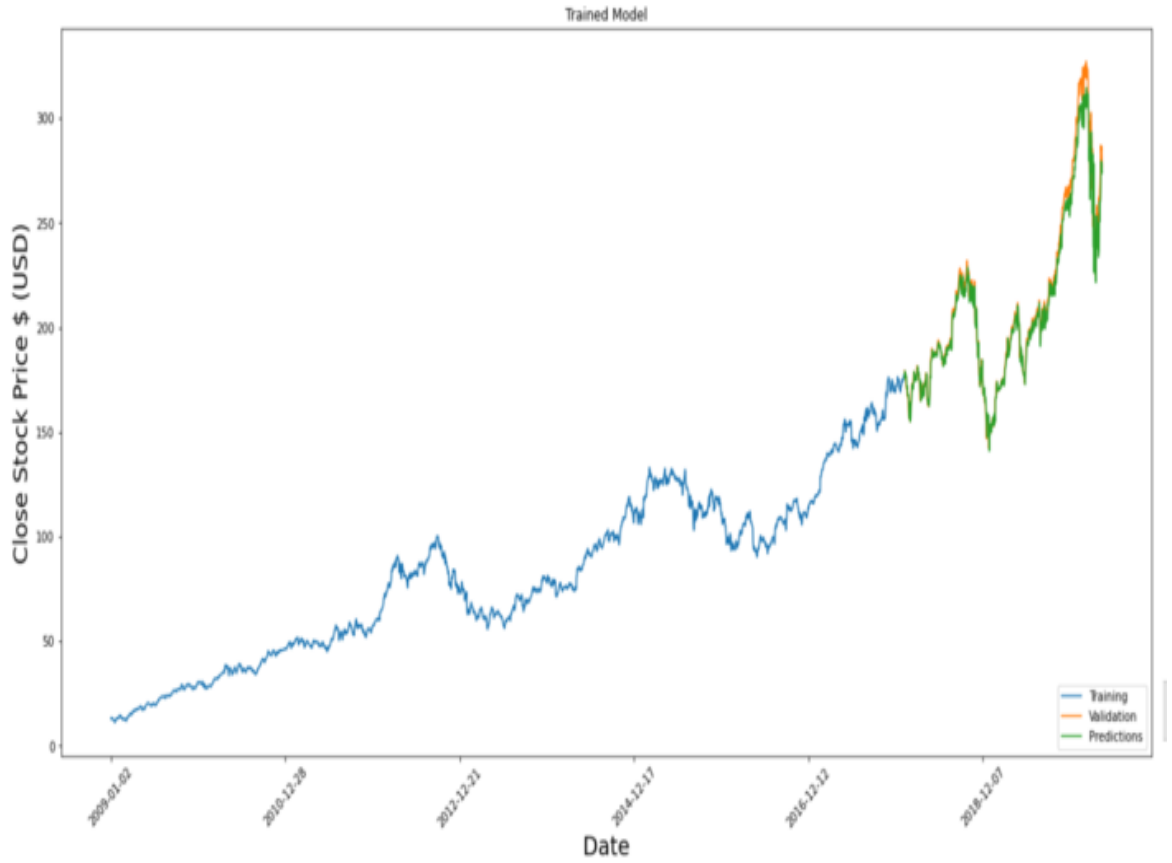
ABSTRACT

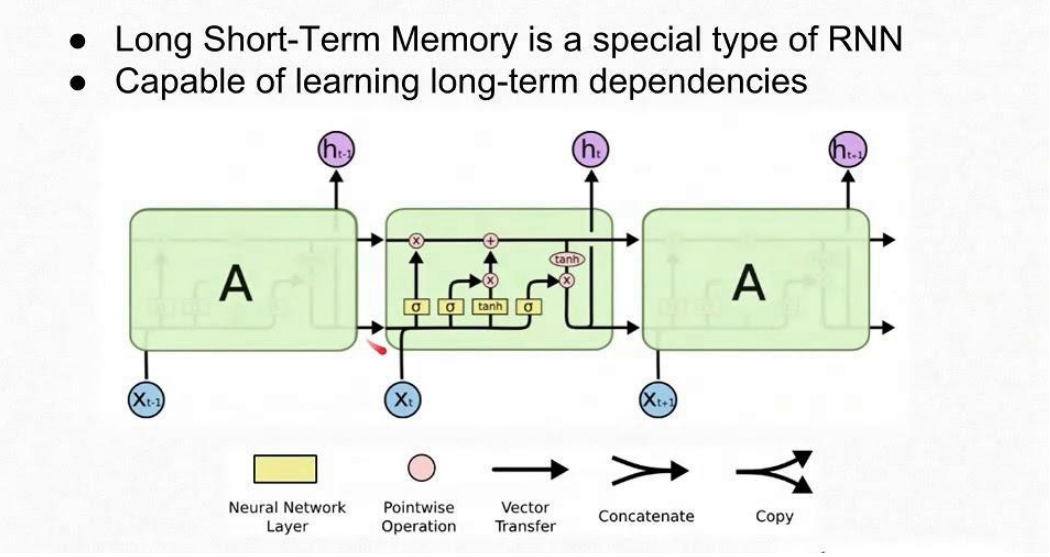
In Stock Market Prediction, the aim is to predict the future value of the financial stocks of a company. The stock price data represents a financial time series data which becomes more difficult to predict due to its characteristics and dynamic nature. It has never been easy to invest in a set of assets, abnormally the financial market does not allow simple models to predict future asset values with higher accuracy. The recent trend in stock market prediction technologies is the use of machine learning which makes predictions based on the values of current stock market indices by training on their previous values. Machine learning, which consists of making computers perform tasks that normally require human intelligence is currently the dominant trend in scientific research. The aim is to build a model using Recurrent Neural Networks (RNN) and especially Long-Short Term Memory model (LSTM) to predict future stock market values. This will provide more accurate results when compared to existing stock price prediction algorithms. The network is trained and evaluated for accuracy with various sizes of data, and the results are tabulated. A comparison with respect to accuracy is then performed against an Artificial Neural Network. The main objective of this paper is to see in which precision a Machine learning algorithm can predict and how much the epochs can improve our model.



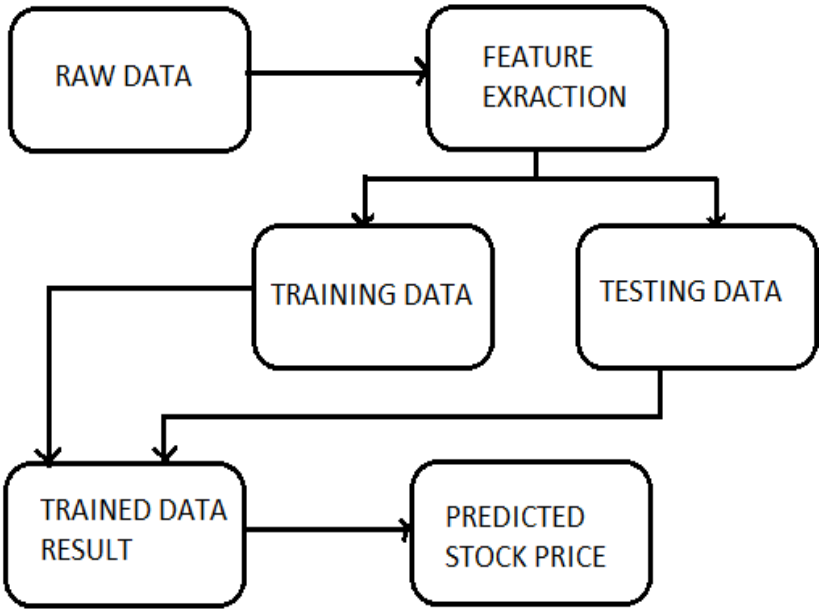
INTRODUCTION

Long Short Term Memory (LSTM) is a model that increases the memory of recurrent neural networks. The reason they work so well is that LSTM can store past important information and forget the information that is not. Recurrent neural networks hold short term memory in that they allow earlier determining information to be employed in the current neural networks. For immediate tasks, the earlier data is used. We may not possess a list of all of the earlier information for the neural node. In RNNs, LSTMs are very widely used in Neural networks. Their effectiveness should be implemented to multiple sequence modeling problems in many application domains like video, NLP, geospatial, and time-series.

Most common techniques used in the forecasting of financial time series are Support Vector Machine (SVM), Support Vector Regression (SVR) and Back Propagation Neural Network (BPNN). In this article, we use neural networks based on three different learning algorithms, i.e., Levenberg-Marquardt, Scaled Conjugate Gradient and Bayesian Regularization for stock market prediction based on tick data as well as 15-min data of an Indian company and their results compared.



METHODOLOGY



Expected Technologies or modules involved:

Python
Stream lit (for web)
TensorFlow
Keras
Neural Networks
Optmizers etc…

CONCLUSION:

Stock Price Prediction using machine learning helps us discover the future value of company stock and other financial assets traded on an exchange. So that people can buy or sell their shares according to the predicted stock market value. The entire idea of predicting stock prices is to gain profits. We can also predict from/to which company buying/selling can be profitable.