Stock Price Prediction

Applied data science group

Project phase 1

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INTRODUCTION

A market where shares are publicly issued and traded is known as a share market.

Implementing the concept of algorithmic trading, which uses automated, pre-programmed trading strategies to predict stock prices.

Time series forecasting (predicting future values based on historical values) applies well to stock forecasting.

Developed a User Interface

FUTURE WORK

- Machine learning and Data science is a game changer in this domain so there is a lot of data to find patterns in for predicting with high degree of accuracy.
- In future we'll try to predict the values based on multiple factors such as politics, global economic conditions, unexpected events like covid, companies financial performance, and so on.
- We are going to implement multiple types of algorithms because different types of data requires different types of techniques.
- Decided to implement a simple User Interface to operate this whole process for users so to make people engage in Stock market.

STEPS PERFORMED

1. Importing and Cleaning data
2. Split the Data into training / test sets
3. Creating and Training the Model
4. Making Predictions
5. Evaluating and Improving Predictions

Need of Project

- The stock market is known for being volatile, dynamic, & nonlinear
- Accurate stock price prediction is extremely challenging because of multiple factors.
- But, all of this also means that there's a lot of data to find patterns in.
- So, we keep exploring analytics techniques to detect stock market trends.
- So, they can be analyzed as a sequence of discrete-time data
- Despite the volatility, stock prices aren't just randomly generated numbers.

METHODOLOGY

Python Language

Python is a rich language for Data Science and AI

Algorithm

Long Short Term Memory (LSTM)

Libraries

Pandas, Numpy, Sklearn, Tensorflow, etc

Streamlit UI

Provided User Interface using Streamlit


Stock Price App
SBIN.NS

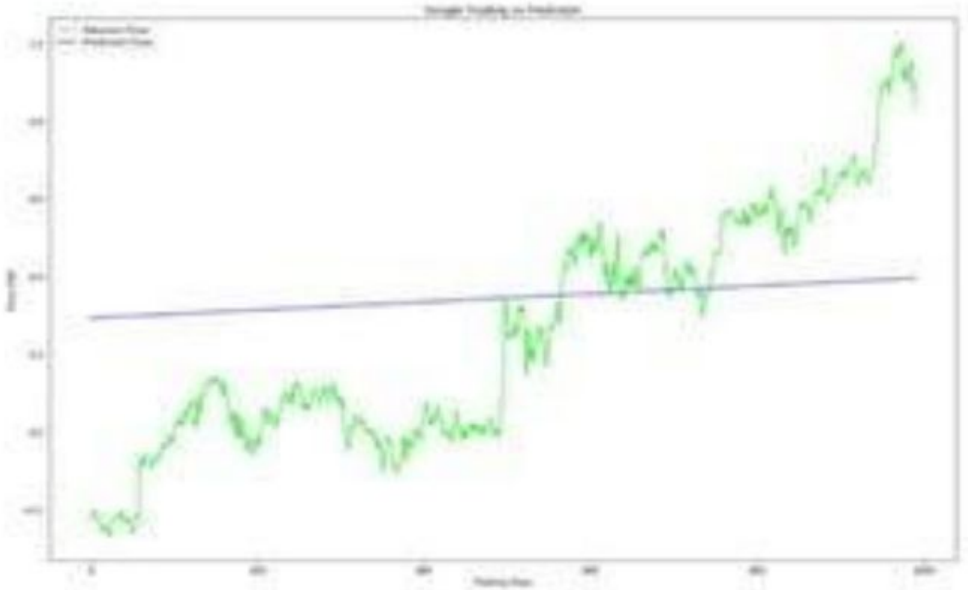

CLOSING PRICE WITH 100 MA


CLOSING PRICE WITH 100 MA & 200 MA

Conclusion

Linear Regression

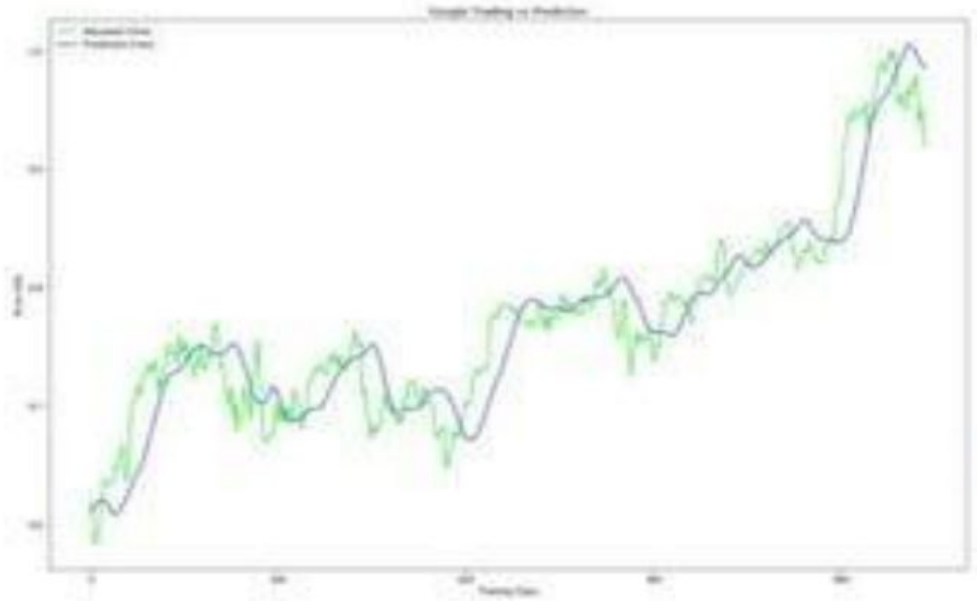
- Model does not fit properly



Stock price prediction is a complex problem and difficult to predict.
Machine learning model doesn't perform well as compared to Deep Learning model.

Recurrent Neural Network + LSTM

- Model fits properly



Thank you