**Department of Information Science &** **Engineering**



**Forecasting** **and** **predicting** **stock** **value** **using** **machine** **learning**

**ADITYA** **SURANA**

**ANISH** **SHRESTHA**

**MOHIT** **KUMAR**

**PRABIN** **BISHWAKARMA**

**17BTRIS036**

**17BTRIS031**

**17BTRIS022**

**17BTRIS025**

**Under** **the** **guidance** **of** **Prof.** **Mathiyalagan** **R,** **Assistant** **Professor,** **Dept.** **of** **ISE,** **FET-JU**

PROBLEM STATEMENT

• An investor needs to know the market behavior with respect to time.

• Predicting on a day-to-day basis is really a difficult task as compared to predicting long term stock values.

PROPOSED SOLUTION

We will implement the system using two different machine learning techniques. One using Linear Regression and the second implementation using Long Short Term Memory.

We will train both the systems using 10 years of historical data and then test our model to check which system provides better output using the remaining years of historic data.

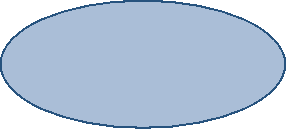
TECHNOLOGY STACK AND PHASES OF DEVELOPMENT

OS: Windows

Software platform: Jupyter notebook

Programming language: Machine Learning using Python Algorithm: Linear Regression, LSTM

USECASE DIAGRAM



Collect data

Compute result and performance

System Update

User View trade exchange

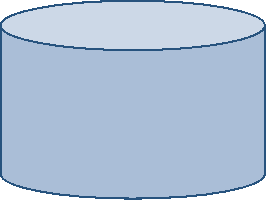
Users interface applicatio n

<<include>>

View predicted outcome

Companies stock

ARCHITECTURE DIAGRAM



LSTM

Data processing

Build model Windows

Dataset Normalization Validation

Data Split testing

Output(test)

Testing

Plot

Output (prediction)

Prediction

Plot

CLASS DIAGRAM/DATABASE DESIGN



|  |
| --- |
| Main Controller |
| -Select Stocks  -Select indicators -Algorithms |

|  |
| --- |
| Window Screen |
| -Select stock  -Select indicators |

|  |
| --- |
| Home Page |
| - Get graph  - Get prediction |

|  |
| --- |
| Get Graph |
| -Select stock  - Get prediction detail  - Get graph |

|  |
| --- |
| Get Prediction |
| -Select stock  - Get prediction detail  - Get prediction |

ACTIVITY DIAGRAM



No

|  |  |  |
| --- | --- | --- |
| Client | Prediction | LSTM |
| Enter the input dataset  Enter the threshold constant | Get the prediction  Yes | Get the prediction  Calculate the estimated price based on indicator  Backprop agate  Calculate the error  Is the error very small |

CONTRIBUTION OF STUDENTS

Aditya Surana-Algorithm Diagrams Mohit Kumar-

Problem Statement Proposed Solution Anish Shrestha-Limitation Objectives

Prabin Biswakarma-Literature Surveys Diagrams

WORK DONE TILL NOW

We have referred some literature surveys through which we got an idea on which all algorithms to use.

We also collected some datasets of various companies with some attributes: open, high, low, close, volume and looked into some indicators as well through which we will predict the future stock values.

We also discussed how the preprocessing of the dataset is going to take place

WORK DONE TILL NOW

We had implemented the code and training to check for error.

We have some libraries through which the model will run. We have trained 10+ years of single data set and have tried to test the same for a better prediction

Basically, we are predicting the future “open ” price for next 20 days

CONCLUSION

• We have studied different methodologies for stock market prediction which will help the investor for making the correct decision for buy or sell the stocks. Each method has some limitations.

• We made an attempt to evaluate different methods of forecasting the stock market trends by which any investor can find the best method by which they can predict the stock market much more accurately then previously done methods.

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