Challenge topic

Accounting + Stock Prediction with Neural Network [Acc+SPRINN]

Team name

Acc+SPRINN

Idea Hub entry ref. no., name & link

9735

Idea Hub

https://ideas.fisglobal.com/ideahub/#/idealist/9735

Team captain

Abhijit A. Chavan

Team members

Abhijit A. Chavan

Bitbucket URL

AbhijitChavan05/Acc_plus_SPRINN: Accounting + Stock Prediction with Neural Network [Acc+SPRINN] - InnovateIN48 - 7th to 9th April 2025

https://github.com/AbhijitChavan05/Acc_plus_SPRINN

What is Accounting+?

With reference to research paper published with name "Accounting+ Stock Predictions with Neural Network"

Subject : **Review result for the manuscript submission in RTCE 08**

Dear sir/madam

Thanks for your submission to the 3 days Pune University sponsored National conference on " **Recent Trends in Computer Engineering RTCE 08** ".It is our pleasure to tell you that your manuscript
Paper ID   : RT0409

Paper Title   : **Accounting+ Stock Predictions with Neural Network**

has been **accepted** for the RTCE 08 with bit revision. Please read the following review comments.

➢   Excellent - Selected

For the **accepted** and registered papers, they will be included in our conference E-proceeding. Every author need to register separately to participate in this conference. At least one author need to registered for the inclusion of paper in conference e-proceeding.

Attendance for registered candidates for three days is compulsory. Detailed schedule will be given at registration time.

We are looking forward to your presentation of this paper and would like to express our warm welcome to you in advance.

For any short queries please contact us.

Best regards,
Organization Secretary,
RTCE - 08

What is Accounting+?

Accounting+ is an accounting system for the creation of temporary data, specially adapted to capital markets. Its abilities are based on the application of accounts/sales/production developed by **Abhijit A. Chavan**.

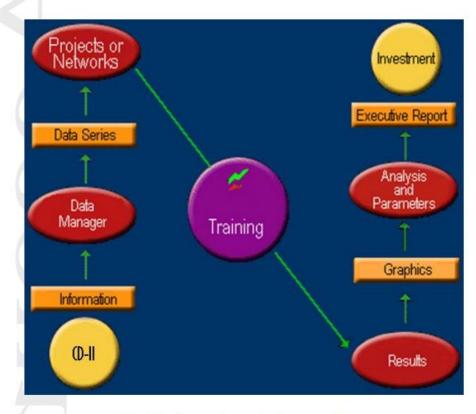|	
Partially Dynamic	Unlike other existing programs, the accounting engine in **Accounting+** is **dynamic**, adapting internally the number of inputs and connections depending on the problem posed.
Multi-version	It has been built searching for the maximum use flexibility and making sure of leaving up to each investor the highest degree of freedom in the definition of accounts and in the parameters assigned to these. Depending on these characteristics and their definition, in near future try out to present different **versions** of **Accounting+**.
Fragmental	The structure given to the definition of each network or module allows also an easy exchange of results among users. In **Accounting+** you may obtain new data series supplied by other users of the program.
Complete with respect to Results	A large number of indicators **have been entered**, moving averages, graphical and some other elements of the technical analysis. We can then improve its validation capacity of the network, as well as the input data series. And these variables can also be other temporary or derived series from the original.
Goal	Unlike other accounting systems used normally, **Accounting+** may not be interpreted, its results are determined. This **objectivity** in the results offered by this project constitutes one of its numerous assets. The program will tell you how to handle accounting terms at each moment, you decide whether you continue it or not.

Working scheme in Accounting+

Fig. Working scheme in **Accounting+**.
where, **CD-II** implies Construction Division No.- 2, Alore

- **Accounting+** is fed on data from **capital markets**, these temporary data series are the **information** the program needs for its working.

- The introduction and maintenance of these data is made from the **Data manager**, which then transforms the gross data into **Data series** which are used in the program. The data can be **downloaded automatically** or be introduced **manually**.

- We now visualize accounts both in the **results as well as graphics**.

- We submit the data series to **training** and obtain the **results**. These results can be viewed in the form of **graphics** or through the **Executive summary**. We analyze the results and reconsider the parameters used. This process of **analysis and parameters** can lead us to a re-training of the network.

- Once this process has finished, the network is ready to take decisions in the processes of **investment**.

- We regularly have to make **safety copies or backups** of our system.

NOTE :-

⛔The on-line data update system not only downloads them, it is integrated with the administration system of the internal **Accounting+** database. If we modify the selection of data collection that we have to download, the system database will be modified.

✔The update system is not sensitive to repetition or disordered insertion mistakes.

⛔The project needs a valid data-series perfectly adjusted to reality if we want the results to be correct.

⛔It does not mean that previous data will not be taken into account. Several mathematical processes run in the network. Although we would like to point out that especially the network will work with your knowledge of all data series, detecting valid series, relations between several elements ... and will observe what happens during the xx previous days in order to take the decision. xx is the value that we have assigned in "with data of ..."

⛔ The network we would created **does not have any knowledge, or experience**, it does not know what future means, it does not know anything. It is like an empty structure but prepared to be an expert in something very specific, the objective which has been assigned to it with its parameters and variables.

With reference to research paper published with name "Accounting+ Stock Predictions with Neural Network"

Training project for analysis

There are several types of training intervals available. We will explain them one by one:

- **Automatic:** takes all available data for the training; if we add new data, the value for UNTIL increases.
- **Fixed start:** takes all available data for the training from the selected date until the end; if we add new data, the value for UNTIL increases, but the one for FROM remains the same.
- **Moving start:** takes all available data for the training from the selected date until the end; if we add new data, the value for FROM increases to the same extent as UNTIL.
- **Fixed range:** takes all available data for the training selected between FROM and UNTIL; if we add new data, both FROM and UNTIL remain the same.
- **Moving range:** takes all available data for the training selected between FROM and UNTIL; if we add new data, the value for FROM and UNTIL. Increase proportionally to the number of days of data we have entered.

Depending on the type of the training interval selected, we can define the staring date and/or the end of this interval. Therefore, a very intuitive selector of the working date is provided.

Introduction to the analysis of results

Each project that is maintained in **Accounting+** is provided with the option to display the obtained results via the graphic format and in report format.

🔴 If a network has not been trained, we will see only the graphics of the series and an empty report.

Project features.

This part of the report contains basic information such as: project title, date of the report, defining data of the project, report type and date an interval of the training session.

Providing this part of information, anyone can reproduce a similar project.

Operations log.

Operation Type.	Indicates if the position is **short** or **long**.
Operation.	Date and initial price of the operation according to the type and date and price of the closing of the operation.
Days.	Number of days that the operation lasted.
Earnings.	Total earnings obtained in the operation.
Commission.	Paid commission, according to values in fixed Commission and Commission in % those have been indicated.
Balance.	Balance accumulated. The whole available balance or the same quantity per operation carried out depending on the box **Capitalization of results** will be invested in every moment.

The operation log reflects the operations carried out by the network in the selected interval.
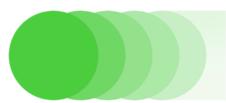
The legend is simple:

C	Buying
V	Selling
W	Selling at downward trend
Z	Buying to cover downward trend

Stock Prediction impact factor

1. News factor come from Politicians/ Market Influencers who has more weightage in Global Industry

2. Stock is just simple asset, need to know company's "product" really in demand in current market conditions.

3. Company's can take decision after analysing more set of other companies data-sets.

Research paper discussion and account formulae

Executive report of results. Indices in detail.

Index of Efficiency

Calculation:

Profit_Total := BalanceEnd - BalanceIni

if Profit_Total >= 0 then
IE := 100 * Profit_Total /
Sum_of_Profit_in_Positive_Operations
else
IE := 100 * Profit_Total /
Sum_of_Losses_of_Negative_Operations
end if

Rank of variation: -100 to 100

if Profit_Total >= 0 then
IE >= 0
else
IE <= 0
end if

Meaning:

Relation between Profit and losses

IE = +100: always operations with profits
IE = +50: more profits than losses
IE = 0: same profits as losses
IE = -50: more losses than profits
IE = -100: always operations with losses

Index of Global Security

Calculation:

MaxRecNeg: maximum negative global run, this is, maximum distance
below the BalanceIni that our patrimonial value has reached
in the operating interval, even considering open operations

Profit_Total := BalanceEnd - BalanceIni

if Profit_Total >= 0 then
ISG := 100 * Profit_Total / (Profit_Total + MaxRecNeg)
else
ISG := 100 * Profit_Total / MaxRecNeg
end if

Rank of variation: -100 to 100

if Profit_Total >= 0 then
ISG >= 0
else
ISG <= 0
end if

Meaning:

Relation between profits and global risk

ISG = +100: high profit, global risk zero
ISG = +50: half profit, half global risk
ISG = 0: zero profit , global risk zero
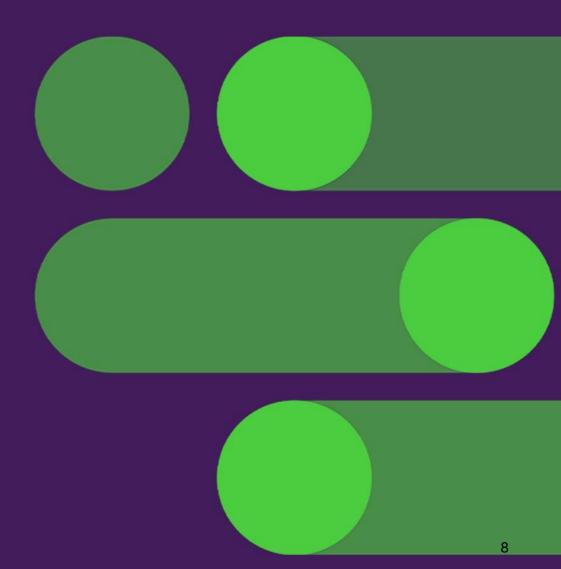ISG = -50: half profit, half global risk
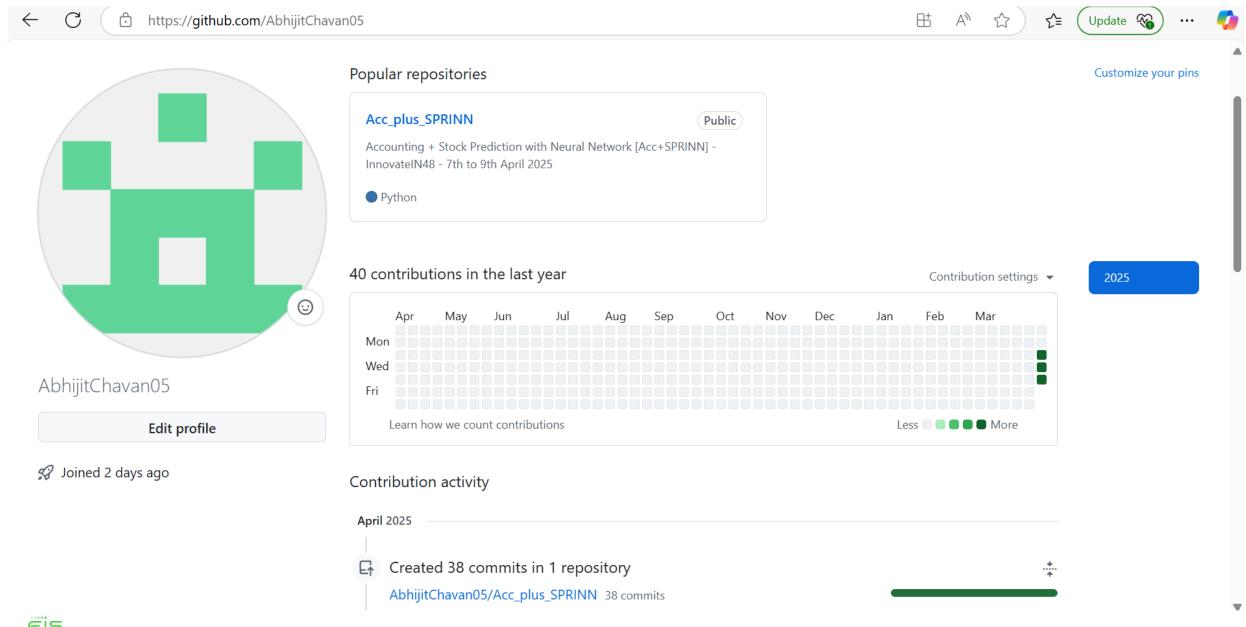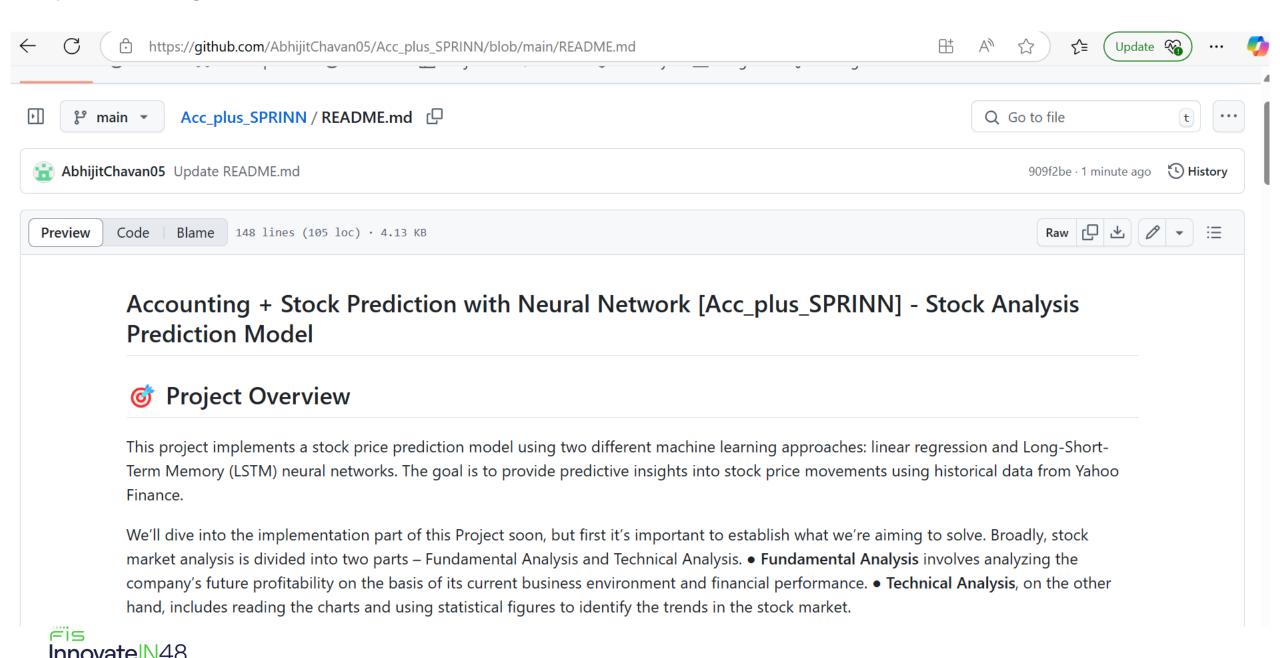ISG = -100: high losses, high global risk

Stock Prediction

https://github.com/AbhijitChavan05/Acc_plus_SPRINN

https://github.com/AbhijitChavan05/Acc_plus_SPRINN/blob/main/README.md

main   Acc_plus_SPRINN / README.md

AbhijitChavan05 Update README.md   909f2be · 1 minute ago   History

Preview | Code | Blame   148 lines (105 loc) · 4.13 KB   Raw

Accounting + Stock Prediction with Neural Network [Acc_plus_SPRINN] - Stock Analysis Prediction Model

🎯 Project Overview

This project implements a stock price prediction model using two different machine learning approaches: linear regression and Long-Short-Term Memory (LSTM) neural networks. The goal is to provide predictive insights into stock price movements using historical data from Yahoo Finance.

We'll dive into the implementation part of this Project soon, but first it's important to establish what we're aiming to solve. Broadly, stock market analysis is divided into two parts – Fundamental Analysis and Technical Analysis. ● **Fundamental Analysis** involves analyzing the company's future profitability on the basis of its current business environment and financial performance. ● **Technical Analysis**, on the other hand, includes reading the charts and using statistical figures to identify the trends in the stock market.

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10

Stock Prediction using ML

Demand of Stock have become huge with Increased in popularity of Stock in Digital world. Prediction and Analysing stock can benefit People to think before buying or selling stocks. This System is Successfully runs on any system even on Cloud platforms.

Machine learning is the science of getting computers to act without being explicitly programmed. Machine learning is a method of data analysis that automates analytical model building

ALGORITHM –

1. SEQUENTIAL
2. DENSE
3. LSTM
4. DROPOUT

Steps

a. We will collect the stock data - AAPL

b. Pre-process the data (train and test)

c. create an Stacked LSTM model

d. Predict the test data and plot the o/p

e. Predict the future 30 days and plot the o/p

Features

a. Automated stock data retrieval using **yfinance**

b. Two prediction models:
 > Linear Regression
 > LSTM (Long Short-Term Memory) Neural Network

c. Comprehensive data pre-processing

d. Model training and evaluation

e. Comparative analysis of prediction performance

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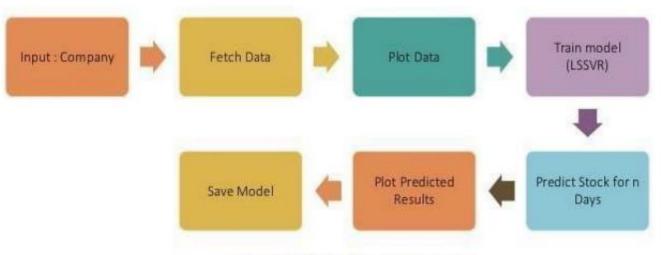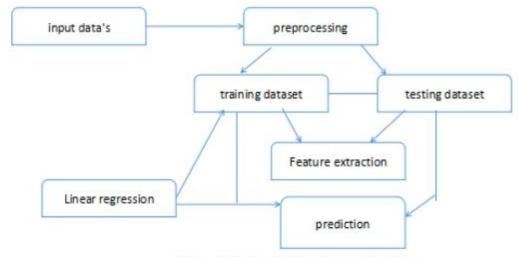2025

Architecture
Data Flow Diagram

Fig 4.1 Data Flow Diagram

Fig 4.2 Architecture Design

Q & A

13

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