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FRAMEWORK FOR STOCK MARKET ANALYSIS USING LDA

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Abstract: *Stock market is a most widely used purchase scheme promising great returns but it has some possibility of risks. Anbrilliant stock prediction models would be mandatory. There are so many techniques are available for the prediction of the stock market value. Some are: Data Mining, Neural Network (NN), Neuro Fuzzy system, Hidden Markov Model (HMM) etc. We outline design of the Neural Network model with its customizable parameters and salient features. A number of functions for activation are implemented along with multiple options for cross validation sets.*

Keywords*: Image sequence analysis, Artificial neural networks, Multi-layer neural network,Prediction methods, Stock markets.*

1. INTRODUCTION

One financial market which has been thoroughly analyzed by different methods is the stock market. Lots of work has been done in mining the financial markets, with multiple researches having a common aim of predicting stock market trends. The most difficult challenge faced by analysts is modeling the behavior of human traders. Constant changing of their behavioural patterns has made predictions quite hard. To solve this problem, researchers have used a variety of approaches. A large group of researchers put the problem into a machine learning framework. Many of those researchers believed that historical trading volume and pricing gave enough information to predict future trends. Another group of researchers think that there are other sources which may have a greater effect on behavior than historical prices. They have done various researches and evaluated different sources to prove their claims. However, there arevarious influential factors that lead to volatility in the stock market. Existing researches tendto focus mainly on some factors, while ignoring other

ones. For example, the effect of both news articles and technical indicators are seldom analyzed in a single research model. Moreover, although existing researches mostly use a systematic way to select the companies for their empirical based study, the selection is biased towards large companies in well-known stock indexes. Accordingly, we will address these research gaps by analyzing the effect of both news articles and technical indicators in a single framework using companies of different sizes.

This paper focuses more on a conceptual model for the prediction of stock market trends. We employed service oriented architecture to allow flexible replacement of different analytical methods, such as mining algorithms on the data. To summarize, our primary contributions in this

paper are:

- To propose an efficient stock movement direction prediction framework using various sources.
- To analyze the impact of different sources on companies with different sizes.
- To illustrate the effectiveness of the proposed model using real-world data.
- To analyze the impact of metric learning methods on stock market prediction.

2. LITERATURE SURVEY

A] Application of wrapper approach and composite classifier to the stock trend prediction:

So many researchers tried to predict the immediate future stock indices or prices based on technical indices with various mathematical models and machine learning techniques such as support vector machines (SVM), artificial neural networks (ANN), and ARIMA models. In that paper employs wrapper approach to select the optimal feature subset from original feature set cover of 23 technical indices and then uses voting scheme that mixes the different classification algorithms to predict the trend in Korea and Taiwan stock markets[1]

Disadvantages:

In this paper they did not use the combination of different classifiers like as weighted voting and find other useful features besides the ordinarily used technical indices to achieve a better performance in stock market trend prediction application.

B] Ansvm-based approach for stock market trend prediction:

In this paper, Support Vector Machines (SVM) algorithm is work for to predict daily stock market trends: downs and ups. Purpose of that is to examine the effect of macroeconomic data, global stock markets, and technical analysis indicators on the accuracy of the classifiers. In this paper we use theempirical and theoretical approach to apply SVM strategy

topredict the NIFTY closinglevel. We propose a prediction based on temporal correlation between commodities, global stock markets, and other financial products topredict the next day closinglevel (trend)of NIFTY[2]

Disadvantages:
In this paper the theoretical analysis of the better performance on forecasting the constituents is a worth studying.

3. IMPLEMENTATION

Implementation Details:

Our aim to build a framework which can predict the stock for feature.

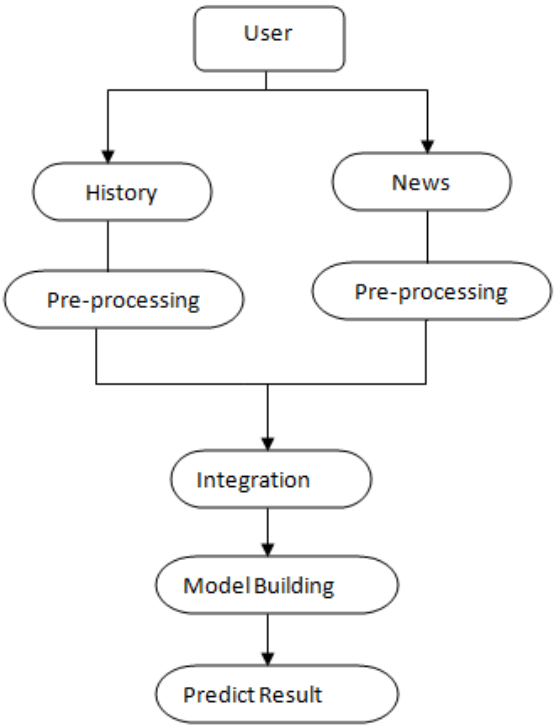

Fig 1.System Architecture Diagram

As shown in figure, User need to fire the request for stock prediction. After that he/she will get the result from the system.

4. MATHEMATICAL MODEL

System = S;

S = {I, P, O}

Success condition:

User will get prediction of the stock.

Failure Condition:

User will not prediction of the stock.

Input = Input

Input will be the query request for predict the stock.

P = Processing

In processing it takes a reference of history and news. And according to that it will going to predict the stock prize.

O = Output will be the prediction of stock.

5. CONCLUSION

We proposed a framework to predict a stock price changes in future. This framework can be take a use of different sources and also use various machine learning techniques to train the model on stocks with different sizes. Using that framework, not only the power of metric learning based methods on stock market prediction is investigated, but also the impact of different sources on stocks with various ranks and sizes is explored. Experiments have been done on stocks in the Hong Kong market. Although most of the existing researches have used SVM to train the model for stock market prediction, we found that metric learning based methods can improve the results significantly. In addition, from the results, we found that adding news to the historical prices to feed the methods, will not be able to improve the results on all the stocks. Having a closer look at each stock showed that considering an extra source like news is mostly effective on larger and
more popular stocks.

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