

# Natural Combination to Trade in the Stock Market

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**Abstract:** Nowadays during increasingly developed technology of the World Wide Web and Internet, the data is becoming extremely rich. With the application of data recognition process, the information extracted from data has become the most important part in some areas of society, management field, finance and markets, etc. It is necessary to develop the valid method to understand the knowledge of the data. Whether you are looking for good investments or are into stock trading, stock prediction or forecast plays the most crucial role in determining where to put in the money or which stock to be acquired or sold. This paper consists of the literature review that will show the clear comparison between numbers of stock prediction methods.

## Introduction:

An investment theory suggests what parameters one should take into account before placing his (or her) capital on the market. Traditionally the investment community accepts two major theories: the Firm Foundation and the Castles in the Air. Reference to these theories allows us to understand how the market is shaped, or in other words how the investors think and react. It is this sequence of 'thought and reaction' by the investors that defines the capital allocation and thus the level of the market. There is no doubt that the majority of the people related to stock markets is trying to achieve profit. Profit comes by investing in stocks that have a good future (short or long term future). Thus what they are trying to accomplish one way or the other is to predict the future of the market. But what determines this?

The way that people invest their money is the answer; and people invest money based on the information they hold.

The factors that are under discussion on this schema are: the content of the 'Information' component and the way that the 'Investor' reacts when having this info. According to the Firm Foundation theory the market is defined from the reaction of the investors, which is triggered by information that is related with the 'real value' of firms.

Whether you are looking for good investments or are into stock trading, stock prediction or forecast plays the most crucial role in determining where to put in the money or which stock to be acquired or sold. Market trends often reflect the mood of the market and not essentially the status of a company or the true value of the stocks. It is often that stock prices soar based on external factors and it is not uncommon to find stock traders and investors to base their decisions on current affairs and market trends while trying to forecast the stock of any specific company.

The two stock forecasting methods any investor or stock trader must use are the *fundamental Research* and *Stock Forecast Algorithms*.

**Fundamental Research** is a mandatory method for any investor. The method involves meticulous studying of a company's financial health, the value of assets, debts, cash, revenues, expenses, profitability and plans of development. Fundamental Research is a well rounded stock prediction method for all the data that actually matters are taken into consideration while determining the true value of a stock

**Stock Forecast Algorithms** are aimed at making the best use of the right time, right price and the right quantity of stocks that must be traded. The Algorithm in place helps a trader to forecast the time at which the price would be the most favourable to either buy or sell a stock. The system predicts absolutely on numbers and has not even remotely affected by popular emotions. Finally, one should not get caught up in the daily trading, and miss out on global trends.

There are several methods that have been developed for the purpose of Stock Prediction Methods such as Fundamental Analysis, Technical Analysis, Data Mining Technology, Internet Based Data Sources of Stock Market Prediction and Application of Complexity Science for Stock Prediction etc. These methods are: Fundamental Analysis, Technical Analysis, Data Mine Technologies etc.

**Indicators for stock prediction:**

There are several indicators that are used for the purpose of stock prediction like:

**Moving average:** The moving average calculates the average of past n values till today. A moving average is commonly used with time series data to smooth short term noisy data and highlight longer-term trends or cycles.

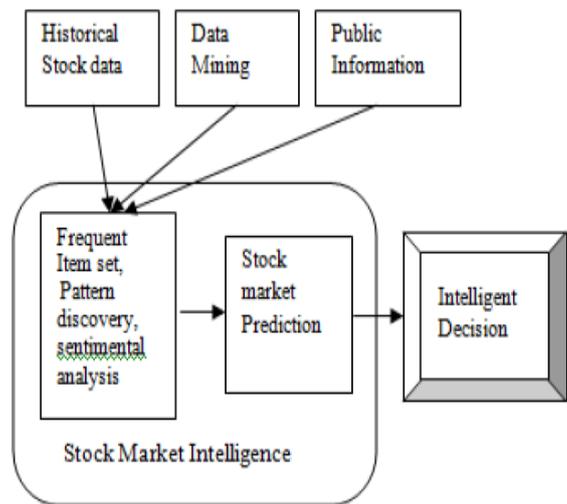
**Simple moving average:** A simple moving average (SMA) is the un-weighted mean of the previous data; the data can be in n number which is used in financial applications.

**Exponential moving average:** In EMA we will give more weight age to recent values than historical data. For example we will give more weight age to data of 2015 rather than data of 2014.

**Rate of change:** The ratio of current price to price n quotes earlier is generally 5 to 10 days. For example we will check here recent data and ups and downs in recent days rather than older days...

**Relative Strength Index:** Measure the relative size of recent upward trends against the size of downward trends within specified time interval. It will check ups in market prices and downs in market prices.

**Process of Stock Prediction:**



**Literature Review:**

**Han Lock Siew and Md Jan Nordin [2012]:** This paper analyzes the hypothesis and routine of relapse systems for prediction of stock price pattern by utilizing changed information set in ordinal information design. In this paper the comparison of the WEKA and SMO regression techniques for stock prediction is done.

**Chang Sim Vui Gan Kim Soon ; Chin Kim On ; Rayner Alfred ; Patricia Anthony [2013]:** Stock business sector is a promising money related venture that can produce incredible riches. Be that as it may, the unpredictable way of the stock business sector makes it a high hazard venture. Hence, a considerable measure of scientists has contributed their endeavors to gauge the stock business sector estimating and normal development. Specialists have utilized different techniques as a part of software engineering and financial aspects in their missions to pick up a bit of this unpredictable data and make extraordinary fortune out of the stock business sector venture. This paper examines different procedures for the

stock business sector prediction utilizing fake neural system (ANN). The point of this paper

is to give a survey of the utilizations of ANN in stock business sector prediction with a specific end goal to figure out what should be possible later on.

**Poonam Somani Shreyas Talele ; Suraj Sawant** **Stock [2014]:** A keen stock prediction model would accordingly be attractive. Along these lines, this paper goes for reviewing late writing in the zone of Neural Network, Hidden Markov Model and Support Vector Machine used to anticipate the stock business sector variance. Neural systems and SVM are distinguished to be the main machine learning strategies in stock business sector prediction range. Likewise, a model for foreseeing stock business sector utilizing HMM is introduced. Customary procedures need in covering stock price changes thus new methodologies have been created for investigation of stock price varieties. Markov Model is one such late approach promising better results. In this paper an anticipating strategy utilizing Hidden Markov Model is proposed to give better exactness and an examination of the current procedures is additionally done.

**H.Chen P.Dyke [2105]:** This paper examines the time arrangement investigation, demonstrating and prediction of stock price in light of the prominently utilized strategy examination information MACD, RSI, MFI and ATR. The thought is that the stock price flow is dealt with as an obscure stochastic element framework to be recognized. The stock price is dealt with as the framework yield and the strategy investigation information, for example, MACD, RSI, MFI and ATR are dealt with as the framework inputs. By utilizing framework distinguishing proof procedures, the Extended Least Squares (ELS) technique is connected to recognize the framework parameters. The UK Lloyds TSB information are taken for instance to demonstrate the execution of the displaying and prediction results.

**Raluca-Mariana Tefan [2012]** states that there are different methods for data classification. In it we divide data into categories for use them at highest level which will provide effectiveness and efficient data

**Ian H. Witten[2013]** determines that Text mining is a multidisciplinary field which is involved in information retrieval, text analysis, information extraction, clustering, categorization, database technology, machine learning and data mining.

**Mahesh t r et al.[2010]** explain thatText mining is a new research area in which we mine knowledge from unstructured text. It means we mine needed text / information using text mining.

**Simon Hawkinset al. [2014]** concluded that extract information from different written resources. Thus text mining method can be used on various fields like social media, news etc. Outlier detection is used to remove fluctuations from data.

**Andrea Nemeti a et al. [2015]** determine that Stock market prediction is a vast area of research where we can apply text mining techniques for retrieve the text and also use SVM for retrieve numerical data sets and text data. After prediction of stock prices we get collection of data sets which is unstructured.

**Alberto Arteta Albert, Nuria Gómez Blas · Luis Fernando de Mingo López [2015]** Specialized and essential markers have been utilized to attempt to foresee the conduct of the business sector and at that point execute purchasing or offering orders. Neural systems are as of now being utilized with great results despite the fact that they can be pointless after a time frame. This paper proposes a calculation that consolidates bio-inspired procedures to expand the hits in the prediction rates. The proposition appeared in this paper depends in an ANN to accomplish these objectives. The differential variables of this methodology are the race of the ANN structure with linguistic swarm and the preparation procedure through the utilization of

Hydro-PSO. Additionally a linguistic swarm calculation is utilized to create exchanging rules as this strategy demonstrates better results than the principal approach. This blend of methods gives a programmed approach to characterize the most reasonable bio-inspired model for the instrument in our investigation.

**NilamUpasaniaet al. [2015]** explains that we have to make unstructured data into structured data and remove noisy data from data sets. Noisy data can be missing value, duplicated data, etc. Removing of noisy data is also called outlier detection which use different mining methods for detection of noise and then remove it. Forecasting stock market movement direction with support vector machine.

<b>Authors</b>	<b>Year</b>	<b>Methodology</b>	<b>Drawbacks</b>
Han Lock Siew and Md Jan Nordin	2012	SMO Regression technique for Prediction of stock price trend by using a transformed data set in ordinal data format.	The results using SMO regression technique is only favourable for less structured data.
Chang Sim Vui Gan Kim Soon ; Chin Kim On ; Rayner Alfred ; Patricia Anthony	2013	Stock prediction done using the fake neural networks	It is not able to provide the accurate stock prediction and many hybrid techniques can operate better than this technique
Poonam Somani Shreyas Talele ; Suraj Sawant	2014	Hidden Markov method for stock prediction	The performance decreases with increase in training data.
Alberto Arteta Albert, Nuria Gómez Blas · Luis Fernando de Mingo López	2015	Moving average techniques are used for stock prediction	The comparison can be improved

**Conclusion:** In conclusion it can be stated that the review depicted a clear view of the work that has been done on the field of stock prediction since 2012. And with the complete study we have decided to do the work on the technique of ANN and Hydro-PSO technique that is used for the stock prediction and we hope to get the accurate results through this.

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