CHAPTER 7

CONCLUSION

This chapter summarizes the research contribution of the focused issue. Also, suggestions for future research are presented.

7.1. CONCLUSIONS

Internet acts as a prime resource for expressing views and sharing experiences. From a user’s perspective, common people are placing a record of their feelings, emotions, and their own interest through forums, blogs, and online social networking sites. These social media websites offer current status and act as a platform for prompt researchers to collect data for the purpose of analysis. The user’s emotions are analysed using the sentiment mining which is otherwise known as opinion analysis. The opinions are identified and categorized from the piece of text that is recorded by the users and is used to determine the attitude towards a particular topic or product. The research contribution of the thesis involves sentence level sentiment analysis for the prediction of stock market trends.

This thesis proposes an effective automatic prediction of sentiment analysis at sentence level for the prediction of stock market prices. In order to improve the performance of prediction. furthermore, the research analysis includes an add-on hybrid mathematical model which uses three stock level indicators in addition to the sentiment analysis. The sentiment analysis accesses the information from social networking sites such as twitter, RSS news feeds and news bias related to stock news. The main aim of this research work is to improve the performance of sentiment analysis and to reduce the inaccurate forecasting of stock prices.

In the present days, stock analysts share their feelings, emotions, ideas and views about stocks through online news websites and social media like
Twitter, Facebook etc. The sentiments expressed in these mass media greatly influence the behavior of stock investors and people.

The research work focuses on three algorithms to improve the prediction accuracy performance of stock market values. They are Sentence level Sentiment Score (SSS) algorithm, Social Media contents Sentiment (SMCS) Algorithm and Sentence Polarity Calculation (SPC) algorithm.

In this thesis, an algorithm called Sentence level Sentiment Score (SSS) algorithm is introduced for effective stock market prediction. This work incorporates the sentiments of RSS news feeds with mathematical model which uses Moving Average stock level indicator for helping the stock investors in deciding when to buy or sell their stocks. Really Simple Syndication (RSS) is a web feed format for providing regularly changing Web content. The news contents are accessed through online websites with the help of RSS feeds. This algorithm calculates the sentiment scores of each sentence that are stored in the document over a period of time to predict the stock market values along with the mathematical model. An experimental study was conducted for the company ARBK from Amman Stock Exchange for which the dataset was collected for RSS news feeds and historical prices for mathematical model for calculating Moving Average stock level indicators. From the study, it is proved that the proposed approach has achieved 14.43% improvement in the prediction accuracy when compared with the standard prediction algorithms of ID3, C4.5 and moving average stock level indicator.

The second work introduces an algorithm called Social Media contents Sentiment (SMCS) Algorithm which combines the sentiments of social media contents of RSS news feeds and tweets along with hybrid mathematical model which uses three stock level indicators, namely Moving average, Moving Average Convergence or Divergence, Stochastic RSI stock level indicators.
In addition to this, hybrid mathematical model is trained for the prediction of stock market rate. Based on the sentiment analysis of social media factor results and hybrid mathematical model results, the stock investors can understand the trend of stocks in the stock market and thereby take decision on buying/selling of stocks. The experimental analysis was conducted for the company Arab bank proved the acceptance of Alternate hypothesis or the rejection of null hypothesis has been established by conducting the one portion Z- test statistics analysis and noticed significant improvement of 19.74% in prediction accuracy.

The third contribution of this research work introduces a new algorithm called Sentence Polarity Calculation (SPC) algorithm which focuses on the sentiment analysis of social media contents such as RSS news feeds, tweets and one more factor called news bias. This additional factor improves the prediction accuracy further more along with hybrid mathematical model over a period of time interval. The experimental study was conducted for the companies, namely Arab Bank, TCS, Infosys and Reliance for which historical prices were collected to perform hybrid mathematical model and the outcome suggests an average improvement of 21% in the prediction accuracy.

7.2. FUTURE ENHANCEMENT

The major possible future enhancements that can be made to the research findings of this dissertation are mentioned below:

The contribution of this research focuses on stock market prediction with hybrid mathematical model along with social media contents. This framework can be used to implement and incorporate for the prediction of customers’ product buying patterns by correlating the sentiments of social networking sites such as Facebook, LinkedIn and twitter.
The proposed methods can be further enhanced by considering other social media factors like Facebook and LinkedIn. Moreover, hybrid mathematical model can also be further strengthened by adding numerous stock level indicators for the prediction of stock market prices.

Apart from this, a further enhancement of the research may focus on the temporal and Geographical information which considers other social media communities such as LinkedIn, Twitter, and Facebook.