

CHAPTER VII

CONCLUSION AND FUTURE WORK

The practice of projecting future changes or patterns in stock prices or market indexes is known as stock market prediction. To help them make wise investment decisions traders, financial analysts, and investors use a variety of strategies and tactics to forecast the direction and size of changes in stock prices. Both sophisticated ML algorithms and conventional statistical techniques can be applied to stock market prediction. Because of its capacity to evaluate enormous volumes of data, identify intricate patterns, and generate predictions based on both historical and current market data. ML is a key component of stock market forecasting.

ANNs are widely used ML approach which is used to predict the stock price prediction. Since ANNs can learn complicated designs and relationships from historical data, they are an appreciated tool for stock prediction. Non-linear correlations between economic pointers, trading measurements, and historical prices as well as potential stock prices and price variations as output variables can be arrested by ANNs. Because of their flexibility, ANNs outperform conventional linear models in demonstrating the intricate dynamics of financial markets.

ELMs are a widespread technique for predicting stock prices because of their ease of use, computing efficiency, and size for handling high-dimensional data. By taking advantage of their tolerance to noise computational efficiency, and non-linear mapping abilities. Financial forecasters and dealers can create resourceful prediction models for making knowledgeable investment decisions in unpredictable and dynamic markets by applying the competencies of ELMs. While ELMs have several assistances for stock forecasting they also have limitations and disadvantages. When compared to certain other ML approaches, ELMs are not as see-through or easily interpreted. The learned correlations between inputs and target variables are problematic to decipher because of the random initialization of hidden layer weights and fixed output weights. Since its strength is exciting to understand the underlying causes of the model's predictions which would decrease its pertinence to financial decision-making.

On the other hand, sentiment analysis is a vital tool for stock market prediction by offering insights into investor sentiment, market psychology, and general perceptions of stocks and financial assets. About particular stocks Industries Or the market at large, sentiment analysis provides insight into the general attitude of investors and market participants. Sentiment analysis algorithms can determine if a text is bullish (positive), Bearish (negative) or neutral by examining news stories, social media posts, financial reports, and other textual data.

Sentiment analysis is a useful tool for determining how news stories, company earnings reports, financial data, and other events that move the market affect stock prices. Positive news has the possibility to boost depositor optimism and raise stock prices; Conversely, negative news may cause sentiment to depreciate and drop stock prices. Sentiment analysis is useful for detecting themes, evolving market trends, and shifts in sentiment that could disturb stock prices. Sentiment analysis approaches permit traders and depositors to predict market movements and adjust their strategies accordingly by detecting patterns and trends in depositor sentiment by analyzing vast quantities of documented data in real-time.

This article proposes an innovative ELM for stock price prediction. Specifically, the sentiment index is utilized to account for the emotional inclination of the investor. Secondly, DWM optimizes the ELM-based model by breaking down the intricate stock price sequence into simpler and more predictable sequences. This helps the model concentrate on the information that contributes the most to the present job target. Experiments were out on the dataset to confirm that the suggested method performs as expected. The experimental results validate that the suggested system consistently performs better than the comparative schemes in three key areas: reduced time offset, higher rise and fall classification accuracy, and closer predicted closing price.

The suggested method in this paper has a lot of potential to help the financial and portfolio management firms by giving guidance on how to rationalize and direct the stock market prediction which helps people make money from their investments. Not to mention, we use CNN as our foundational sentiment index model in this study. CNN in the suggested scheme can be swapped out for different basic learners in subsequent work. The usage of semi-supervised models, for instance, can help reduce the amount of stock review datasets needed for sentiment index computations and emotional classification.

Scope of further research

This study observes sentiment indices across multiple companies, indicating that comments about one company indirectly impact the stock price of others. On the other hand, capturing non-linear correlations and patterns in data is an area in which DL models thrive. When it comes to stock market prediction, DL models might perform better than shallow neural networks or traditional linear models because the correlations between input data and stock prices can be quite dynamic and non-linear. This suggests the potential for future work to explore relationships between sectors in detail.