Over the years, ANNs have played a vital role in the decision-making process of banks and financial institutions due to the adaptation of new and automated systems to their operations. These new technologies have been quickly adopted because they are consistent and objective, eliminating human bias or wrong assumptions. In addition, ANNs empower investors and institutions to create new powerful models by extracting information from past observations and improving preconceived models. This allows investors and institutions to better understand the data created by the stock market and generate more powerful models that increase the accuracy of their predictions.

The ANNs are a bio-inspired computing system based on many connected processors called neurons activated by different types of activation functions (AF) triggered according to specific weights and biases. This system aims to minimize the prediction error by using a feed-forward optimization that will change the weights of the different interconnected neurons. This model can capture non-linearities and has been used in different business applications to predict financial distress, bankruptcy analysis, stock price predictions, and credit scoring. \cite{TKAC:2016}.

Several scholarly researchers have discussed the potential of using ANNs to forecast stock market performance. For example, For example, Qui et al. \cite{QIU:2016} used an ANN to predict the return of the Japanese Nikkei 225 index by using a hybrid approach based on a genetic algorithm and simulated annealing. Additionally, Pyo et al. \cite{pyo:2017} analyzed the prediction of a stock exchange index, building three hypotheses to forecast the daily closing prices of the Korea Stock Price Index 2000 by using an ANN and two SVMs models.

Sagir et al. \cite{Sagir:2017} presented a contrast between ANNs and classical statistical techniques to predict the Malaysian stock market index using three variables, showing that the ANN was more accurate than the multiple linear regression model in this research, with a coefficient of determination of 0.9256. Also, Kim et al. \cite{Kim:2018} combined one type of ANNs called Long Short Term Memory (LSTM) and GARCH models with moving averages, concluding that LSTM single models could effectively learn temporal patterns of time-series data with fewer prediction errors than deep feed-forward network-based integrated models.

In a recent review of the applications of deep learning in the stock market, Jiang \cite{JIANG2021} explains that scholars driven by the swift advancement and escalating application of deep learning models for forecasting the stock markets created over one hundred related papers since the year 2019 in order to provide an overview of the most recent progress. Similarly, Bustos et al., \cite{BUSTOS20201} performed a systematic review of predicting stock markets, mentioning that using ML algorithms such as ensemble models and deep learning has recently become more popular. Ensemble models have demonstrated strong predictive abilities and, in some cases, performed better than other popular classification ML algorithms and ANN. However, the systematic review also explained that deep learning models have not yet outperformed traditional ML models, and this is probably because the data used to train the algorithms is not adequate enough to form an accurate forecast. Therefore, future work should locate new sources of information to enhance the current technical analysis to predict the stock market.