Using Multivariate Time Series Forecasting Neural Networks With Sentimental Analysis To Determine Future Stock Prices

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The stock market is a very complex system in which many people gain and lose money. Using artificial intelligence, this experiment is going to attempt to use human sentiment to develop a model that can predict the stock price of Apple Inc. By importing 2.3 million tweets about the stock ticker AAPL from twitter. The AI begins by reading through each tweet, and gives each tweet a rating for 4 categories: positive, negative, neutral, and compound. This allows each tweet to have an sentimental value, and therefore will be able to use this data alongside previous stock data to develop a model in which it could predict future stock prices. The first AI was able to achieve a 98% accuracy over a 170 day period, but it lacked the ability to predict the trends ahead of the real data which resulted in failure. However, the second AI was able to achieve a 92% accuracy over the same period and was able to predict these trends much more accurately, and sometimes even before they happen. Overall, this AI has proven that human sentiment is a crucial factor that helps drive stocks. Whilst the accuracy of the exact stock price for the day is only 92% accurate, the trends are able to be identified ahead of the change, which is crucial when it comes to investing within the stock market.

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