Chapter 13
Machine Learning–Based Stock Price Prediction for Business Intelligence

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ABSTRACT

The act of digital marketing uses a variety of traditional methods such as analyst consensus, earnings per share estimation, or fundamental intrinsic valuation. Also, social media management, automation, content marketing, and community development are some of the most popular uses for digital marketing. Stock price prediction is a challenging task since there are so many factors to take into account, such as economic conditions, political events, and other environmental elements that might influence the stock price. Due to these considerations, determining the dependency of a single factor on future pricing and patterns is challenging. The authors examine Apple's stock data from Yahoo API and use sentiment categorization to predict its future stock movement and to find the impact of "public sentiment" on "market trends." The main purpose of this chapter is to predict the rise and fall with high accuracy degrees. The authors use an artificial intelligence-based machine learning model to train, evaluate, and improve the performance of digital marketing strategies.

INTRODUCTION

Forecasting of stock prices is vital for financial backers and is quite possibly the most fascinating issues for scientist. As per the proficient market speculation (EMH) and irregular walk hypothesis, stock costs are considered to not have anything to do with chronicled patterns Notwithstanding, according to the viewpoint of conduct finance, financial backers' way of behaving and independent direction is frequently impacted by silly factors and commotion. The market by and large shows consistency. The forecast of monetary time series is a vital assignment. Analysts have directed a great deal of chips away at stock cost prediction. From one perspective, the customary technique is to utilize verifiable cost information inside the business sectors to foresee stock costs (Yang and Parwada, 2012). Then again, More and more peculiarities show that data outside the exchanging market ay essentially affect resource costs; Twitter's opinion condition of financial backers frequently influences stock returns (Nofer and Hinz, 2015). Prices are not set in stone by the essential worth and deviations brought about by financial backers' silly way of behaving (Szyszka, 2007). In these examinations, an ordinary strategy is to utilize monetary information, declarations, budget summaries, and other data to foresee stock costs (Shang and Wang, 2020). Nonetheless, news, reports, and declarations, as a rule, happen haphazardly, so the coherence of such sort of data is effectively impacted by time stretches, bringing about incomplete loss of significant data. Another technique is to utilize online information sources via web-based media stages to foresee the stock costs.

These examinations utilize online information from interpersonal organizations, for example, Twitter to assess financial backer feeling and dissect the connection among opinion and securities exchanges (Renault, 2020). Yet, the characterization of feeling is typically outrageous, like good and pessimistic. Additionally, it isn't permitted to quantify financial backer' social connection data in manners aside from the particular opinion aspect. Interpersonal organizations contain a great deal of significant data; however, the financial backer' social association information actually needs proper devices and innovations to change it into important data.

As of the end of October 2021, Microsoft posted revenue of $45.3bn for the first quarter to September - 22% higher than the same period last year. Operating income rose 27% to $20.2bn, while profits totalled $20.5bn in GAAP and $17.2bn in non-GAAP and $17.2lbn non-GAAP increased by 48% and 24%. Microsoft 365 commercial revenue increased by 23%, driving an 18% increase in Office commercial products and cloud services. Microsoft 365 consumer subscribers increased to 54.1 million, driving a 10% increase in Office consumer products and cloud services. As a result, LinkedIn revenue rose by 42%, fuelled in part by Marketing Solutions growth of 61%. Up to date apple stock performance is shown in Figure 1.

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