Stock Price Prediction using Machine Learning Models

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Abstract-Prediction of stock prices has been a major area of research for a long time. While supporters of the efficient market hypothesis believe that it is impossible to predict stock prices accurately, there are formal propositions demonstrating that accurate modeling and designing of appropriate variables may lead to models using which stock prices and stock price movement patterns can be very accurately predicted. This paper attempts to predict stock price of few ticker symbols to prove the theory. We propose an approach of modeling for stock price prediction for CMCSA (Comcast) and its competitors building different machine learning and deep learning-based models. This paper also attempts to compare the price prediction from different models for different ticker symbols. The Data collected from Finn Hub using the Finn Hub APIs, preprocessed, and prepared for training the model. The Dataset will be split into 80%-20% split with 80% of the data used for training the model. The following models are used for predicting the stock price among others: Linear regression, locally weighted Linear regression, Decision Tree Regression and Random Forest Regressor. This paper lays out the results from different models, provides an accuracy score for each model and provides insight into the best fit for the stock

Index Terms—component, formatting, style, styling, insert

I. BACKGROUND

Comcast Corporation operates as a media and technology company worldwide. It operates through Residential Connectivity Platforms, Business Services Connectivity, Media, Studios, and Theme Parks segments. The Residential Connectivity Platforms segment provides residential broadband and wireless connectivity services, residential and business video services, advertising sales, and Sky channels. Some of the top competitors of Comcast include Verizon, ATT, Charter Communications, Dish Network, and Walt Disney Company. Comcast stock is listed in the NASDAQ stock exchange using the symbol (CMCSA). Machine learning is a branch of artificial intelligence that analyzes complex sets of historical data, discovers hidden relationships between data sets, makes forecasts, and learns along the way to become even more accurate. Such capabilities make ML-based tools well-suited for financial analysis. Machine learning (ML) is playing an increasingly significant role in stock trading. Predicting market

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fluctuations, studying consumer behavior, and analyzing stock price dynamics are examples of how investment companies can use machine learning for stock trading. In this paper, we shall use the machine learning models to predict the stock price of Comcast (CMCSA) and one of its prime competitors, Verizon (VZ). The predicted price can then be compared with the actual stock price to arrive at an accuracy score. Regression is a key element of predictive modelling and is a perfect fit for predicting financial stock prices. We will be using various regression models for our study here.

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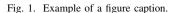


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