Price Prediction of Bitcoins

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Abstract: In this project, we made the decision to better accurately forecast the price of bitcoin by taking into account several factors that influence its value. Our goal for this phase of the inquiry is to comprehend and identify daily market patterns for bitcoins while gaining insight into the best conditions for the price of bitcoin. Our data set includes a number of characteristics related to the price of the bitcoin over a five-year time period, daily data. With the data at our disposal, we will use the second phase of our inquiry to most accurately estimate the direction of the daily price change. So, being aware of how tweets change price direction quickly may give bitcoin users or traders a buying or selling advantage. number of tweets, not mood (which is usually largely positive regardless of price direction), was found to be a superior predictor of price direction when price direction was inferred from analysis of tweets on Twitter. The logic that will be employed for the retrieval of results will make use of numerous machines learning algorithms, including RNN with LSTM model.

Keywords: bitcoin market, cryptocurrency, investigation, optimal features, tweet sentimental, tweet volume, various parameters.

1. Introduction

Frequency of relevant news of social media and technology posts, especially tweets, is increasing as quickly as the economic and social impact of cryptocurrencies. Similar to conventional financial markets, there seems to be a connection between media coverage and cryptocurrency coin prices. Even if there are a variety of reasons why cryptocurrency prices fluctuate, it is worthwhile to investigate whether sentiment research on publicly accessible internet media may help forecast whether a coin's price will rise or fall. News headline and tweet, in order of occurrence and aggregated by day to maintain the time-series nature. It seems likely that cryptocurrencies will continue to be used in some capacity and that their use will increase thanks to the Blockchain, the ground-breaking technology that powers them. A broader interest in cryptocurrencies has grown over the past few years, as shown by the fact that as measured by market value, Bitcoin's dominance over the cryptocurrency market has gradually declined from 85% in 2010 to 50% at the moment. Since Bitcoin has been falling to new lows every day in 2018 and bringing down the whole cryptocurrency market with it, market participants have recently become more Price Prediction of Bitcoin. Scholars are interested in the reasons behind these downturns in order to better comprehend the price dynamics of these virtual currencies. As long as the trend is obvious, a cryptocurrency trader doesn't care if prices are rising or falling. In anticipation of an expected boom phase, investors may establish a long position in cryptocurrencies in order to cash out their gains once the prices reach a certain level. In contrast, investors might short sell these cryptocurrencies through margin trading in the event of a future bust time to profit from higher profits. Moreover, after the CBOE's decision to introduce Bitcoin features in December 2017, it has been considerably simpler to place long or short bets Now, similar strategies for other cryptocurrencies can be implemented thanks to binary options traded on offshore markets. Many of these situations call into question the predictability of bitcoin values. In other words, does the efficient market hypothesis (EHM) apply to cryptocurrencies? In an efficient market, any historical knowledge ought to have already had an effect on current prices (Fama, 1970), leaving prices only subject to future developments. But, because the future is unpredictable, prices should fluctuate randomly. Yet after earlier attempts by Mandelbrot (1971), others, including Fame and French (1988). In other study, Wei (2018) studies the predictability return of 456cryptocurrencies and we can say that there is a significant inverse correlation between return predictability and cryptocurrency liquidity. In our opinion, the issue with the aforementioned literature is that a sizable number of research have been conducted on the pricing efficiency of cryptocurrencies, and nearly all of them reject the null hypothesis of weak-from efficiency. All of those studies, meanwhile, use standard statistical tests and don't explicitly explain how to take advantage of this inefficiency or outline the possible excess returns that could be realized through regular active trading.

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A. Motivation

The basic goal of the research is to create a machine learning model that is more accurate at predicting price trends than random sampling. The aim of this research is to evaluate the precision with which machine learning methods can estimate Bitcoin price direction. A time series prediction challenge is at the core of this issue. While a lot of research has been conducted on the application of various machine learning algorithms for time series prediction, nothing has been done in this field

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specifically on Bitcoin. Moreover, Bitcoin has a much higher volatility than other currencies like the USD.

B. Objective

The purpose of "Price Prediction of Bitcoin" is to examine the specific data later in this paper, which calls for understanding of the data's sources as well as any potential distinctions between cryptocurrencies and fiat currencies or stocks in businesses sold on traditional stock exchanges. We will provide more background information on these data sources and the factors that led to their selection in this part so that the reader will have the proper context for the final study. The system receives text input from news headlines and tweets that have been combined by day and kept in chronological order to retain the time-series nature of the data.

2. Literature Survey

Prediction of Bitcoin's price. Authors: M. Fernandes, S. Khanna, L. Monteiro, A. Thomas, and G. Tripathi In this study, the authors used an artificial neural network ensemble method called genetic algorithm to investigate the association between bitcoin attributes and the next day's change in price.

Survey on cryptocurrency price prediction using machine learning. Authors: Shilpa B., Mihir Shetty, Tanmay Nayak, and Ramnath Pai writers Three different machine learning algorithms that have been developed are being used to forecast the price of the top three significant cryptocurrencies: BTC, ETH, and LTC. Performance measures have been taken in order to assess each model's efficacy.

Systematic Erudition of Bitcoin Price prediction using machine learning technique. Authors: Sudhir N. Dhage, Prachi Vivek Rane We can determine which network is stronger by looking at factors like network utilisation and exchange rates. Small transactions also involve the biggest volume of bitcoins. Finding the greatest hub in the Bitcoin Network is made easier by degree centrality.

Bitcoin price prediction using decision tree and Regression technique. Authors: Somarouthu Venkat Sai, Tubati Sai Manikanta, and Karunya Rathan with the collected dataset, they used a classification and feature selection method together with token weights with positive and negative values. They employed the Naive Bayes, Regression, and SVM models, TJIT Price Forecast of Bitcoin 2022–2023, Page 10.

Predicting the price of the cryptocurrency Using Machine Learning. Authors: Sean McNally, Jason Roche, and Simon Caton are the authors The widely used ARIMA model for predicting time series is used to contrast the deep learning models. The poor-performing ARIMA forecast is outperformed by the non-linear DL (deep-learning) techniques. With the training time, both DL (deep-learning) techniques are benchmarked on a GPU and a CPU.

Bitcoin price prediction using deeplearning and Real Time Deployment. Authors: Mahendra, E., Madan, Gupta, and Singh, S.V. Because the deep learning model takes into account the non-linear character of price, it was discovered that the proposed approach was more accurate than the machine learning models utilised for prediction. The findings confirm

the model's applicability and provide guidance to investors on how deep learning techniques might be applied to decision-making.

3. Aim

Cryptocurrencies have been in existence for more than ten years. Although they have become common assets, some people are leery of these digital currencies. Cryptocurrencies serve a variety of functions that enable users to access specific utilities and make money.

Wealth Accumulation-Crypto has given early investors some of the greatest chances, and the asset's historical success continues to entice new investors. Some people who purchased Bitcoin at a price of less than $1 per coin have achieved financial success.

Earn Interest-While cryptocurrency prices can rise dramatically, some investors are concerned about a lack of cash flow. Some sites deal with this problem by giving you interest for your cryptocurrency.

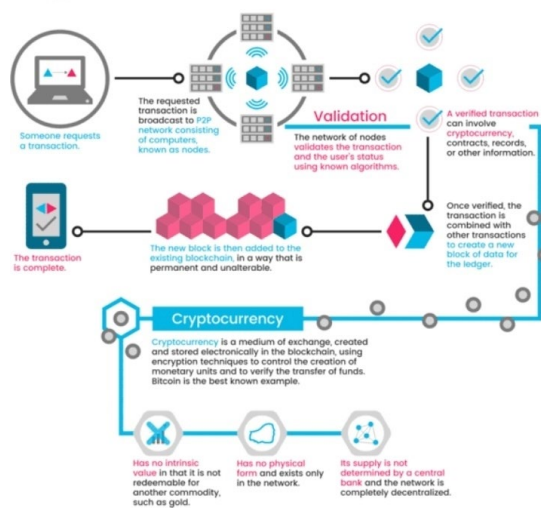### A. System Architecture

Fig. 1. Proposed system architecture

4. Existing System

A. Advantages

- Inflation protection: As a result of inflation, the value of several currencies has decreased over time.
- Self-governed and managed: A key driver of this development is the governance and upkeep of any currency.
- Private and secure: Security and privacy have always been top priorities for cryptocurrencies.
- Currency exchanges can be done easily.
- Decentralized: By preventing a single entity from controlling the flow of currency, decentralisation serves to keep the currency monopoly free and in check.

B. Disadvantages

- It might be used in illegal transactions.

- Money-related losses could come from data losses.
- A few organisations are still in existence.
- No cancellation or refunds are permitted; some coins are not available in other beginning currencies.
- Mining's impact on the environment.
- Hackable vulnerability.

5. Proposed System

A. Advantages

- The majority of the time, cryptocurrency transactions are simple and rapid.
- The blockchain is a public database that stores every cryptocurrency transaction.
- A growing number of big businesses, as well as industries like fashion and pharmaceuticals, are using cryptocurrency payments.
- Blockchain eliminates banks and online marketplaces, so there are no costs connected with processing payments.

B. Disadvantages

- Because the value of cryptocurrencies like bitcoins can change considerably, some individuals don't think it's secure to convert "real" money into bitcoins.
- You might lose your digital wallet or unintentionally erase your money.
- The cryptocurrency sector is unregulated by the Financial Conduct Authority (FCA), and bitcoin exchanges are frequently the subject of cyberattacks that could cause a permanent loss of your investment.
- The use of cryptocurrency as a payment method for fraud or as a target for scams is possible.

6. Requirements

A. Hardware Requirements

- Processor: corei3
- System type: 1 TB; 500GB hard drive; 4GB of RAM
- Graphics are optional (if NVIDEA is available its good)

B. Software requirements

- IDE: Jupyter Notebook and Anaconda with Tensor Flow Python, CSS, and HTML are all programming languages. Numpy, pandas, keras, and tensorflow are all libraries.

7. Conclusion

In the global fiscal system, bitcoin and other cryptocurrencies are a hot content. Exchange rates for cryptocurrencies are veritably unpredictable. Dealing these cryptocurrencies as a result carries a significant quantum of threat. Due to their rise, they've attracted the interest of colorful bookmakers. They're featherlight and movable. The use of cryptocurrencies will increase only if there's the necessary trust in them. Cryptocurrencies' growth might stagnate if they cannot win this trust. Since they're still in their immaturity, it's delicate to prognosticate when they will be completely traded on global requests. numerous cryptocurrencies have entered the proper attention. Indeed, public cryptocurrencies are being introduced by some countries. Bitcoins are veritably likely to soon enable cryptocurrencies to flourish. Despite their failings, bitcoins are nonetheless regarded as a digital currency's zenith. In this way, it gives the people lesser options for handling their plutocrat. Without regard to bitcoins achieving the ambitious differences, it's believed that cryptocurrencies are joining the fiscal scene and permanently altering the world's fiscal geography

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