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Survey on Bitcoin Price Prediction using Machine Learning

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Abstract: ***With the help of specific factors, this effort seeks to improve the present analysis of bitcoin and forecast its price. After conducting a thorough investigation, it was determined which factors all contribute to daily fluctuations in the value of bitcoin. All of the data in this work is made up of various aspects from daily records from the previous few years. The first step in this endeavour is gathering all the data necessary to forecast the price of bitcoin. All of the data was compiled during the previous few years, and it was incorporated into this work. The Recurrent neural network (RNN) algorithm is employed in this work because it provides significantly improved accuracy than earlier techniques. In order for investors to invest in bitcoin easily and for beginners to this market or business, this study forecasts signs of change in the price of the cryptocurrency.***

I. INTRODUCTION

BITCOIN is a successful cipher currency introduced into the financial market based on its unique protocol and Nakamoto's systematic structural specification. Bitcoin strives to achieve total decentralisation, in contrast to other fiat currencies that have central banks. Through the creation of a Blockchain that is based on cryptographic methods that use hash functions, participants in the Bitcoin market establish relationships of trust. Due to the inherent properties of Bitcoin generated from Blockchain technology, numerous study areas outside of economics, such as cryptography and machine learning, have been interested in this digital currency. Recently, a lot of research has been done on how to model the time series of Bitcoin prices as a new market variable with precise technical guidelines. In order to investigate the time series of Bitcoin price, generalised autoregressive conditional heteroskedasticity (GARCH) volatility analysis is used. A number of studies on the statistical or economic properties and characterizations of Bitcoin prices refer to the capabilities of Bitcoin as a financial asset; these studies focus on statistical properties, the inefficiency of Bitcoin according to the efficient market hypothesis, hedging capability, and speculative bubbles in Bitcoin, the relationship between Bitcoin and search information, such as Google Trends and Wikipedia, and wavelet analysis of Bitcoin.

Bitcoin is a crypto currency that is used for digital payments or just for investing purposes all over the world. Because Bitcoin is decentralised, no one owns it. Bitcoin transactions are simple since they are not country-specific. Though in a different way, the value of a Bitcoin fluctuates exactly like a stock. A variety of algorithms are used on stock market data to anticipate prices. The factors affecting Bitcoin, however, are different. So that wise investment choices may be made, it is vital to forecast the value of Bitcoin. In contrast to the stock market, the price of Bitcoin is not affected by commercial events or governmental intervention. Therefore, we consider it important to use machine learning technology to forecast the value of Bitcoin.

II. LITERATURE SURVEY

In this article[1], we explain the Bayesian regression method and how well it may be used to forecast changes in the price of Bitcoin, a recently popularised virtual currency.

1) The Advantage of Bayesian regression in Bitcoin price prediction results has been showed in binary values.
2) It helps to understand the results very neatly.

In this work[2], we examine the current extremely volatile Bitcoin prices by utilising a BNN to assess the time series of Bitcoin price using Blockchain data together with macroeconomic indicators. This can be achieved by using more extended machine learning techniques or by taking into account new input capabilities connected to the volatility of Bitcoin.

In conclusion[3], using ANN to anticipate stock behaviour and trends has proven to be a practical substitute for currently used traditional techniques, exhibiting the typical market behaviour in the selected prediction horizon.

The general results[4] demonstrate the feasibility of employing time series neural networks for forecasting on the Romanian Stock Exchange, but the optimum implementation methodology is required.

The general results[5] demonstrate the feasibility of employing time series neural networks for forecasting on the Romanian Stock Exchange, but the optimum implementation methodology is required.

a) It is easy way to buy and sell the Bitocins.
b) The process of buying and selling the Bitcoins are done in online.
c) It is comfortable place to done the transactions.

In this work[6], we make an effort to forecast the price of bitcoin with some degree of accuracy while taking into account many factors that influence its value.

- It works the prediction by taking the coinMarkup cap.
- Quandl is used to filter the dataset by using the MAT Lab properties.

Our study[7] incorporates a number of distinctive elements, such as hour-based prediction, the use of data from the previous 24 hours, normalisation by window, and the comparison of several model types with various numbers of layers.

This work[8] focuses on the development of project-based learning in the area of computer science engineering, taking into account the problem definition, progression, student assessment, and use of hands-on activities based on the use of deep learning algorithms to develop applications that can predict bitcoin prices.

III. PROPOSED SYSTEM

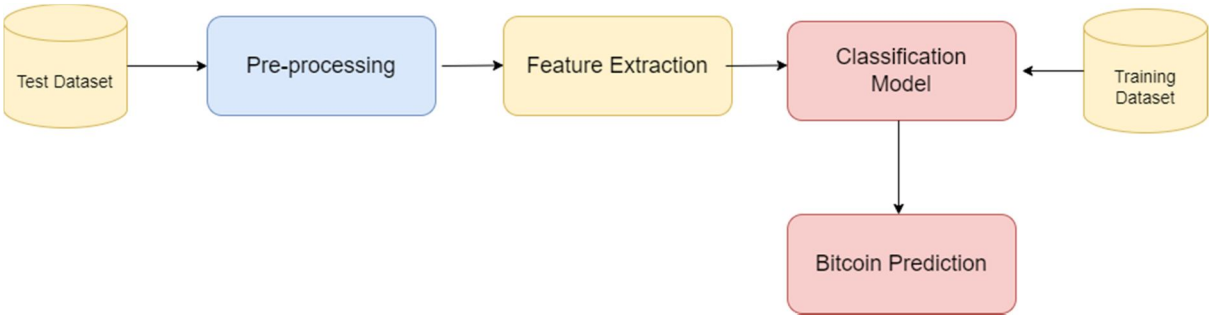

Figure 1. System Architecture

In this study, we make an effort to precisely forecast the price of bitcoin while taking into account a number of factors that influence its value.In the initial stage of our research, we seek to comprehend and pinpoint daily market trends for bitcoin while gaining knowledge of the best circumstances surrounding its pricing. Our data collection consists of many aspects of the Bitcoin pricing and payment network during a five-year period that were daily recorded. Using the information at our disposal, we will make the most accurate prediction of the daily price change's sign for the second phase of our inquiry.

IV. CONCLUSION

In this work, we aim to apply the two methods Bayesian Regression and GLM/Random forest and select the most effective approach to solve the Bitcoin prediction problem after constructing the learning framework and finishing the normalisation.

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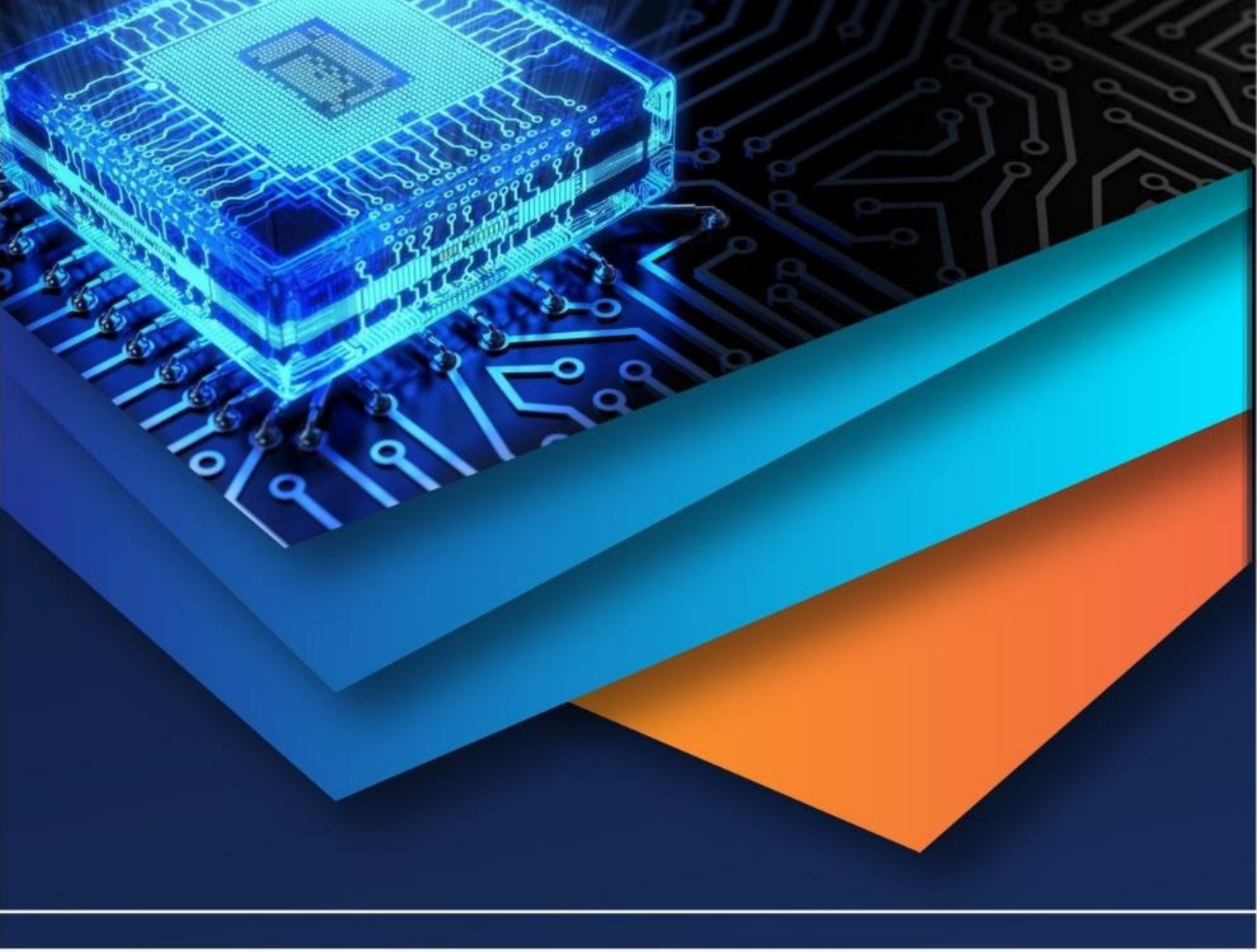

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