CRYPTO-CURRENCY PRICE PREDICTION MODEL & ANALYSIS

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Introduction

Virtual currencies are a kind of crypto-currency that, despite its limitations, is a remarkable technical achievement in the field of digital marketing. Virtual currencies will continue to exist, but they will never be able to entirely replace fiat or traditional currencies. Satoshi Nakamoto proposed a system that transformed the current system on October 31, 2008, with the invention of Block-chain technology and first digital currency Bitcoin.

Bitcoin is a peer-to-peer crypto-currency in which no third entity regulates or controls any transactions. It is not feasible for a third party to intrude between consumers. The market price is extremely volatile and operates 24 hours a day, seven days a week. Bitcoin's market capitalization rises and falls.

Deep learning algorithms have yet to be widely employed to forecast crypto-currency market values. We investigate applications of deep learning to forecast the crypto-currency market value, knowing that deep learning models have evolved into state-of-the-art neural network design that enhances prediction accuracy in a variety of domains, including time series.

In the parts that follow, we'll look at prior research on crypto-currency price prediction, as well as deep learning models for predicting time series. The primary difficulty with crypto-currency exchange rates is their fast pace of price volatility.

Because of the high price volatility, various precautions should be followed in order to properly anticipate the price of crypto-currency. To predict the future price of crypto-currency and to establish confidence and acceptability throughout the world, it is vital to understand forecasting activities. A range of elements, such as a country's political system, public relations, and market policy, can influence Bitcoin's economic function and international interactions on various market tactics.

Challenges in the field of Crypto-currency prediction:

Despite the opportunities in crypto-currency, there are still many challenges waiting to be faced by the crypto-currency. Onlookers and new investors have taken precautious step whether to invest heavily or not because of the risk and challenges involved and posed by trading and investing in crypto-currency.

To get a greater insight into the issues of crypto-vulnerability, currency's risk detection, mitigation, regulation, and acceptance, future researchers should come up with the range of approaches.

For government actors, research is needed that highlights both the risks and potential rewards of altcoins – a digital alternative of the bitcoin, also a thorough mapping of this spread would enable business actors, among

others, to better understand and mitigate looming volatility risks, as well as make sound policy decisions in this fast-changing field. Also need of the hour is a model to investigate the antecedents in a variety of contexts employing more advanced statistical modeling techniques such as structural equation modeling or partial least square and many more.

Problem formulation:

Pricing volatility is one of the most serious issues with crypto-currency, indicating the need of researching for underlying price model.

This case study is based on the crypto-currency price prediction in real time. The article looked at crypto-currencies that may be found on the internet and other accessible sources. This was offered as a regression as well as a classification challenge. For the regression task, the study attempted to forecast price increases and decreases, and for the classification task, it attempted to predict price increases and decreases. In this case study, we used machine learning and deep learning regression techniques in an attempt to forecast the next day pricing based on data from the previous day.

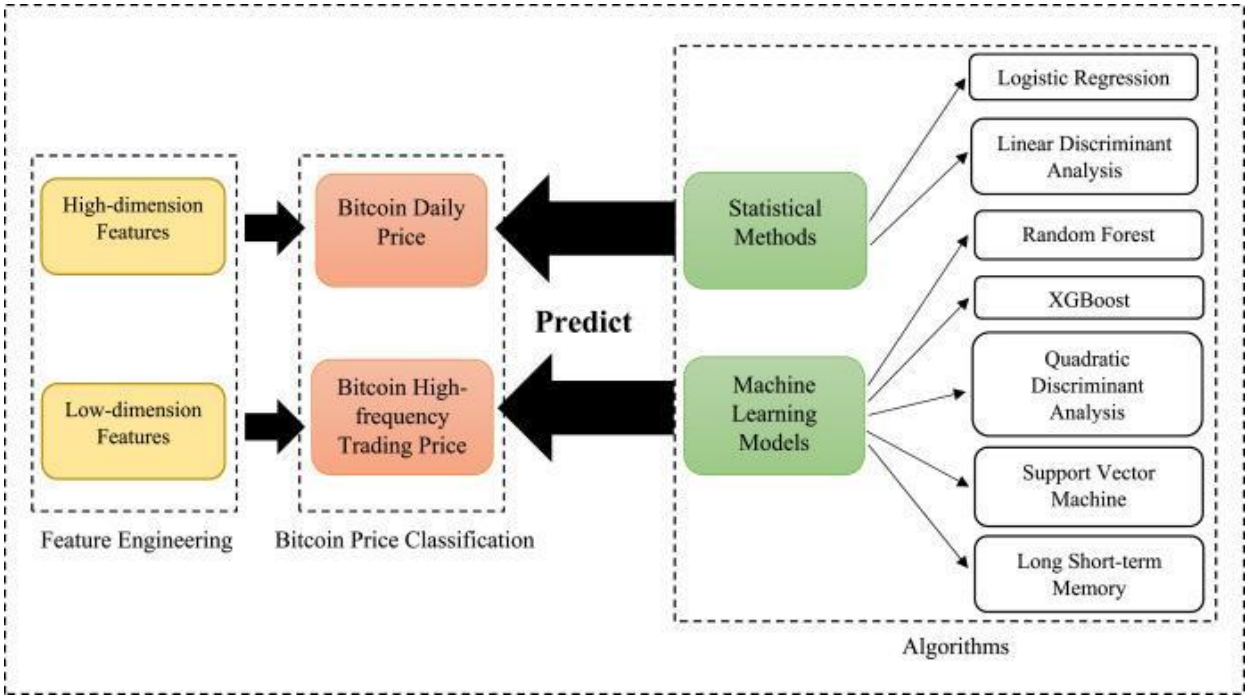
Objectives :

- To make crypto-currency a publicly traded commodity which can be predicted in price.
- To determine the predictable price direction of crypto-currency by machine learning technique.
- Does crypto currency like Bitcoins have the ability to become a primary method of transaction, replacing US Dollar and other traditional currencies with weekly price prediction? Finding out the answer is our aim.
- Developing an automated application for predicting a price hike in crypto currency with respect to different time series using machine learning.
- To ensure less risk and more profit for investors.

Methodology:

The suggested technique analyses two alternative deep learning-based prediction models to estimate daily crypto-currency prices by the model itself identifying and assessing important variables. We can identify which model is much more accurate for the future fulfillment of our aim after using both models for crypto-currency prediction as well as selecting appropriate parameters to get a higher performance.

In this paper, we offer deep learning methods such as Long Short – Term Memory (LSTM) and Gated Recurrent Unit (GRU), which are the most recent and efficient algorithms for crypto-currency price predictions. Since, Bitcoin is the most widely used crypto-currency, the issue of price volatility must be addressed quickly.



Expected Outcome:

Our major goal is to use machine learning algorithms to generate a near-perfect price forecast, which can assist people decide whether or not to invest in crypto currencies. Unlike equity markets, where a reason for the meltdown in a company's stock can be pinpointed to some frantic event, there are no specific reasons or events that refer to the cause in the fall of crypto-currency and other virtual money, hence have brought down the exchange price by 5 to 10 times as predicted by the data of Technical Trade Indication Currency.

The method used might provide real-time crypto-currency price predictions, which would be a boon to crypto investors looking to make the most money with the least amount of investment and efforts.