IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 3, May 2022
Impact Factor: 6.252

# Cryptocurrency Prediction using Machine Learning

**Rushikesh Borgaonkar[1], Manthan Londhe[2], Vaibhav Rathode[3], Harsh Sanglikar[4], Prof. Mayuri Agarwal[5]**
Students, Department of Computer Engineering[1,2,3,4]
Guide, Department of Computer Engineering[5]
Shrimati Kashibai Navale College of Engineering, Pune, Maharashtra, India

**Abstract:** *Bitcoin and other cryptocurrencies are becoming increasingly common among investors. It is investigated in the proposed work how to accurately forecast the Bitcoin price by taking into account various parameters that affect the Bitcoin price. Diagnosis of Skin Melanoma Cancer. A significant role in the diagnosis is played by features used to describe the disease. Finding the right combination of characteristics and machine learning techniques for classification is also very critical. This research first identifies the market pattern of day-to-day fluctuations in the Bitcoin price, as well as provides information on Bitcoin price patterns. The dataset includes free, big, low, and near price information for Bitcoin value up to the present day. For the prediction of price values, a dataset machine learning module is implemented. This research aims to calculate and compare the accuracy of Bitcoin prediction using various machine learning algorithms.*

**Keywords:** Crypto-currency Dataset, Data Pre-Processing, Feature Extraction, Python, Machine Learning, Bitcoins, Random Forest, Bitcoins Prediction, Normalisation, etc.

## I. INTRODUCTION

Bitcoin is a cryptocurrency that is used for automated investment all over the world. Bitcoin is decentralised in the sense that no one owns it. Bitcoin transactions are easy because they are not tied to any country. Different commercial centres known as bitcoin trades are available for investment. These allow people to exchange Bitcoins in a variety of currencies. Mt. Gox is the world's largest Bitcoin exchange, storing bitcoin as a virtual digital wallet. The timestamp information managed in this industry, as well as the record of a large number of exchanges, is referred to as Blockchain. Any piece of blockchain data is encrypted. Only the wallet ID is made public, so trades performed in the client's name are kept private. Bitcoin functions similarly to a stock, but in a different way. Machine learning algorithms are used in a variety of price prediction algorithms for stock value.

### 1.1 Objective

This project proposes an automatic approach to using social media data using deep learning, this approach is going to use the concept of machine learning, and deep learning models to extract features from the dataset. Because of its unstable and dynamic existence, cryptocurrency price prediction is considered a difficult job. We review some of the most effective and commonly used deep learning algorithms for cryptocurrency price forecasting in this report. The findings show that deep learning models are unable to solve this problem efficiently and effectively.

## II. METHODOLOGY CRYPTOCURRENCY PREDICTION PROBLEM

Bitcoin is an effective cryptocurrency brought into the monetary market dependent on its one of a kind convention and Nakamoto's structure. Bitcoin tries to achieve decentralisation in the currency market. Investors in the Bitcoin market establish trust connections through the development of Blockchain using cryptography strategies. Bitcoin nowadays gaining more interest due to innovations in Blockchain and machine learning prediction for crypto-currency through machine learning techniques is inevitable. The objectives of this study are to the price prediction of bitcoin by feature selection of different machine learning techniques. Volatility as a proportion of value fluctuations significantly affects exchange methodologies and investment choices just as on alternative estimating and proportions of fundamental risk.

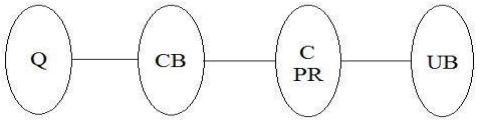
IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 3, May 2022
Impact Factor: 6.252

Bitcoin, as a pioneer in blockchain money, assumes a predominant job in an entire cryptographic money showcase capitalization. Subsequently, it is of extraordinary interest to be growing these days on data mining and machine learning network to most likely predict Bitcoin value variances.

## III. Related Work or Literature Survey

[1] Bitcoin price prediction using Deep Learning Algorithm
Author: ALI SHARIQ IMRAN
In terms of network parameters, a proper deep learning design model is critical to their success. The three main options for selecting deeper learning model parameters are a random selection, matrix search, and heuristic mixture strategies such as genetic algorithms.
[2] "Project Based Learning: Predicting Bitcoin Prices using Deep Learning"
Author: Piyush Maheshwari, Yogeshwaran
The predicted values are plotted on a graph. The most famous technology is a technical solution that can assist humanity in forecasting future events. With the massive amount of data produced and reported daily, we've finally arrived at a point where reliable forecasts can be made based on specific factual data.
[3] "Predicting the Price of Bitcoin Using Machine Learning"
Author: Sean McNally Jason Roche
Simon Caton As a result, the challenge remains difficult. A fine line exists between overfitting a model and preventing it from learning enough. Dropout is a useful function that can help with this. Despite using Bayesian optimization to optimise dropout selection, successful validation results could not be guaranteed. Regardless of the sensitivity metrics,.
[4] "Bitcoin Price Prediction using Machine Learning"
Author: Siddhi Velankar, Sakshi Valecha, Shreya Maji
Bitcoin is a digital currency that can be used for digital payments or simply for investment. Bitcoin is decentralised, which means that no one owns it. Bitcoin transactions are easy because they are not tied to any country. Investing can be done on a variety of "bitcoin exchanges," which are online marketplaces.
[5] "Crypto-Currency price prediction using Decision Tree and Regression techniques"
Author: Karunya Rathan, Somarouthu Venkat Sai, Tubati Sai Manikanta
Cryptocurrency such as Bitcoin is more popular these days among investors. In the proposed work, it is studied to forecast the Bitcoin price precisely considering different parameters that influence the Bitcoin price.

## IV. Mathematical Modeling




Where, Q = User entered input, CB = preprocess, C = feature selection
PR = apply Classifier Algorithem UB = predict outcome
Set Theory
1) Let S be as system which input data
S = {In, P, Op, $\Phi$}
2) Identify Input In as In = {Q} Where,
Q = User entered input (dataset) 3) Identify Process P as
P = {CB, C, PR}
Where, CB = Preprocess, C = feature selection
PR = apply Classifier Algorithem
4) Identify Output Op as Op = {UB}
Where, UB = Predict outcome
$\Phi$=Failures and Success conditions.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 3, May 2022
Impact Factor: 6.252

### 4.1 Failures:

1. Huge database can lead it more time consuming to get the information.
2. Hardware failure.
3. Software failure.

### 4.2 Success

1. Search the required information available in the Datasets.
2. User gets results very fast according to their needs.

### 4.3 Space Complexity

The space complexity depends on the Presentation and visualization of discovered patterns. More the storage of data is more is the space complexity.

### 4.4 Time Complexity

Check No. of patterns available in the datasets= n
If (n>1) then retrieving information can be time-consuming.
So the time complexity of this algorithm is O($n^n$).

## V. PROPOSED SYSTEM

Since images shape essential data and knowledge in biological sciences, the proposed project uses image processing to detect and diagnose leaf infection. Digital image processing and image analysis technology, which is focused on developments in microelectronics and computers, has a wide range of applications in biology and avoids the issues that come with traditional photography.

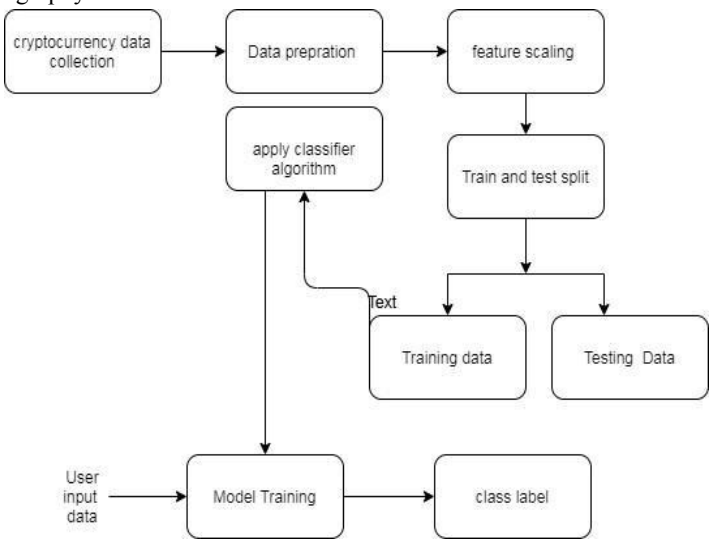



**Figure:** Advance System Architecture

### 5.1 Advantages

- Predict the cryptocurrncy detection predictions
- Effective prediction technique
- Confirming those infected is essential to manage and contain the virus successfully. Without reliable testing, it would be hard to determine the actual rates of cases. Thus, it is vital to identify what these available tests can and can't do to use them appropriately.
- Secure and efficient system

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 3, May 2022
Impact Factor: 6.252

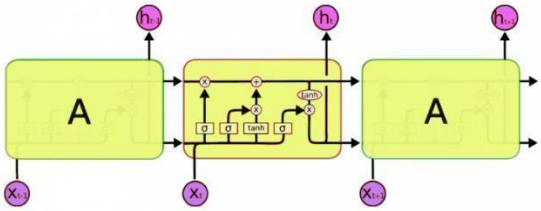
### 5.2 Algorithm

**A. LSTM Algorithm System Analysis and Design**

Problems with sequence prediction have been around for a long time. They are regarded as one of the most difficult problems in the data science field to solve. These problems vary from forecasting sales to identifying trends in stock market data, from comprehending movie plots to recognising your voice. With the recent advances in data science, it has been discovered that Long Short Term Memory networks, also known as LSTMs, are the most powerful solution for almost all of these sequence prediction problems.

**B. Architecture of LSTMs**

- Understanding how LSTM works can be visualised by looking at how a news team investigating a murder storey works. A news storey is now based on truth, testimony, and multiple people's comments. When a new occurrence happens, you can choose from one of three options.
- Let's say we were under the impression that the victim was poisoned, but the autopsy report just arrived and stated that the cause of death was "an effect on the brain." What do you do as a member of this news team? You quickly forget the previous cause of death and all the stories that surrounded it.
- What happens if a completely new perpetrator enters the picture? Someone with a grudge against the victim who may be the murderer? Isn't it true that you put this information into your newsfeed?
- Many of these shattered bits of knowledge can no longer be served by mass media. Then, after a certain amount of time has passed, you must compile this data and present the relevant information to your audience.




- LSTMs are a promising approach for problems involving sequences and time series. However, I believe that the difficulty of training them is one of their disadvantages. Even a simple model takes a lot of time and machine resources to train.

## VI. Conclusion and Future Work

In conclusion, this survey navigates and organises the vast amount of diverse research work in the field of cryptocurrencies that uses AI techniques. The most recent state-of-the-art Six types of research efforts were identified. In each case, class, a comparison of various research projects based on The techniques and datasets that were used were given. We identified potential research holes and unexplored avenues. In this highly dynamic field, future development is needed.

The use of machine learning algorithms to predict the future will always be at the top of the list. Using two deep learning methodologies, we attempted to predict the price of Bitcoins in this project. This research focuses on the advancement of project-based learning in the field of computer science engineering, taking into consideration the problem description. It's critical to have a well-rounded approach to prediction, so more research is needed to uncover other promising features. The dataset can be broken down into sequential patterns, with a linear regression model applied to the patterns to predict the outcomes, or the data points can be clustered using K-means clustering. Decision Tree and Linear regression models are both used to predict prices for the next five days. The suggested learning method suggests the best algorithm for the cryptocurrency prediction problem to select and implement. The findings of the experimental analysis indicate that linear regression outperforms the other in terms of price prediction accuracy.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 3, May 2022
Impact Factor: 6.252

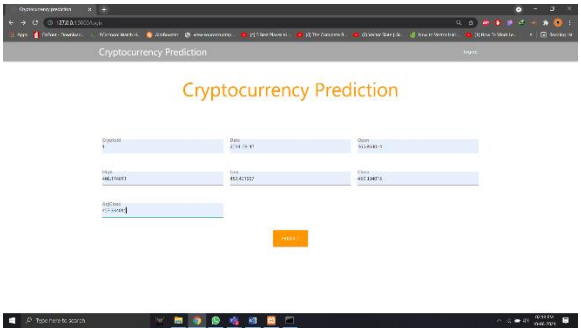
## VII. SCREENSHOT OUTPUTS

**Login:**


**Register:**


**Home:**


**Main:**



IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
Volume 2, Issue 3, May 2022
Impact Factor: 6.252

## REFERENCES

**[1].** Tian Guo, Nino Antulov-Fantulin, "Predicting short-term Bitcoin price fluctuations from buying and sell orders" MachineLearning, arXiv:1802.04065, Feb 2018

**[2].** Connor Lamon, Eric Nielsen, Eric Redondo, "Cryptocurrency Price Prediction Using News and Social Media Sentiment" semantic scholar, 2017

**[3].** Young Bin Kim, Jun Gi Kim, Wook Kim, Jae Ho Im, Tae Hyeong Kim, Shin Jin Kang, Chang Hun Kim, "Predicting Fluctuations in Cryptocurrency Transactions Based on User Comments and Replies" Interdisciplinary Program in Visual

**[4].** Information Processing, Korea University, Seoul, Korea Aug 2016. Huisu Jang And Jaewook Lee" An Empirical Study on Modeling and Prediction of Bitcoin Prices With Bayesian Neural Networks Based on Blockchain Information," IEEE access, December 4, 2017,

**[5].** Anshul Saxena, T.R. Sukumar, "Predicting bitcoin price using lstm And Compare its predictability with arima model", International Journal of Pure and Applied Mathematics Volume 119 No. 17 2018

**[6].** Jethin Abraham, Daniel Higdon, John Nelson, Juan Ibarra, "Cryptocurrency Price Prediction Using Tweet Volumes and Sentiment Analysis", SMU Data Science Review: Vol. 1: No. 3, Article 1