Altcoin Price Trend Prediction Using Machine Learning

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Abstract

Nowadays, crypto currencies offer a new way of secure trading and exchanging and has become increasingly important in our financial system. However, predictions of this are still challenging. In recent years, Altcoin is the most valuable in the crypto currency market. However, prices of Altcoin have highly fluctuated which make them very difficult to predict. Hence, this project aims to discover the most efficient and highest accuracy model to predict Altcoin prices by using machine learning algorithms. In this project, we tried to estimate the Altcoin price precisely taking into consideration various parameters that affect the Altcoin value. We predicatively model the price of several popular crypto currencies, including Bitcoin (BTC), Ethereum (ETH), Ripple (XRP), Litecoin (LTC), and Binance Coin (BNB).

Background

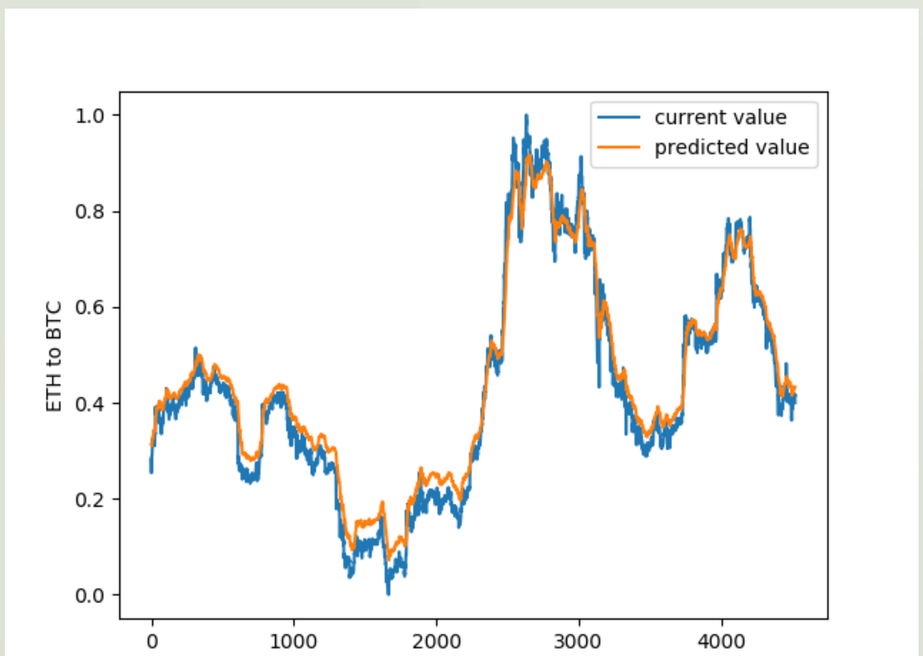
Different studies have tried to explain various aspects of the Altcoin such as its price formation, volatility, systems dynamics and economic value. From the economic perspective, main studies [IV], were focused on understanding the fundamental and speculative value of Altcoin. [V] exploited auto regression techniques to identify positive feedback loops leading to price bubbles. In data mining and machine learning models areas, [VI], used the historical price time series for price prediction and trading strategies [VII], explored the predictive ability of Block chain information for Altcoin price. However, volatility forecasting using order book information of Altcoin is still under-researched. In project, we develop predictive models consuming volatility history.

Solutions

Before we build the model, we need to obtain some data form CryptoCompare. The dataset used is in the different periodic time of Altcoin prices for the last few months. Over this timescale, noise could overwhelm the signal, so we'll opt for daily prices. Dataset name Altcoin_price.json, Json file for select Altcoin exchanges for the time period of July 2019 to Nov 2019 with 1 Lakh instances approximately, with different periodic form updates of OHLC (Open, High, Low, Close), Volume in different Altcoin and indicated in Bitcoin.

After all datasets are collected, we train the model by using this dataset and by using current price of Altcoin, predict model predicts the price. We use Long Short Term Algorithm.

For generating models to predict the price. The models are generated depending on the Open, High, Low, and Close data from CryptoCompare.



Working Environment

Tensor Flow:

Tensor Flow, created by Google, is an open-source deep learning framework. It can be used to train Neural Network (NN) models and to predict results by using much Graphical Processing Unit (GPU) to collaborate, therefore, powerful algorithms for deep learning and NN can be implemented. This framework can also be applied in several other areas such as speech recognition, computer vision, robotics, and so on. Tensor Flow can generate data flow graphs for processing when graphs are composed of node groups.

Keras

Keras is an open-source library used for high-level NN. It provides API for NN programming written in Python. It can also be used with Tensor flow. Models of machine learning, NN, and deep learning can be created by using Keras. Dividing codes into parts make Keras easily to build and understand. The parts of generating models normally consist of neural layers, cost functions, optimizer, and activation functions. New defined functions or classes can also be easily developed by using Python.

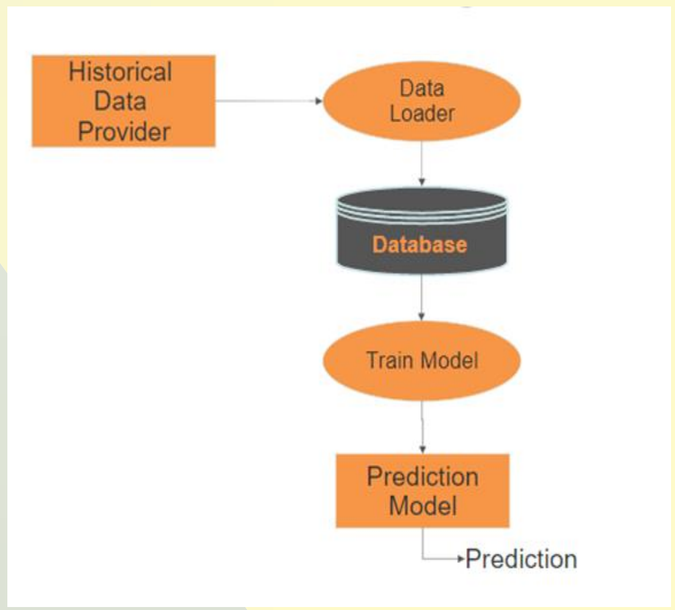
MySql:

MySql is a relational database management system based on SQL – Structured Query Language. The application is used for a wide range of purposes, including data warehousing, e-commerce, and logging applications. The most common use for MySql however, is for the purpose of a web database.

Firebase:

The Firebase Real-time Database is a cloud-hosted database. Data is stored as JSON and synchronized in real-time to every connected client. When you build cross-platform apps with our iOS, Android, and JavaScript SDKs, all of your clients share one Real-time Database instance and automatically receive updates with the newest data.

Architecture



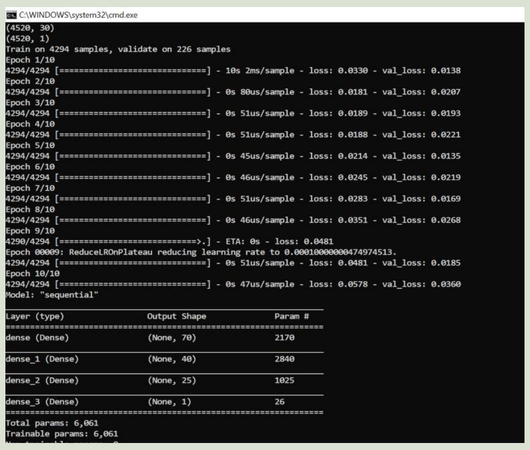
Conclusion

Bit coin is highly volatile and has higher returns than conventional financial trading. History generally has a way of repeating itself but bit coin has a lot of history which makes it an equal challenge predicting which history will be repeated. It takes more than a study of past trends to get predictions. The goal of this project is to find a model where we can predict the value of the Altcoin stock considering all the factors which influence the price.

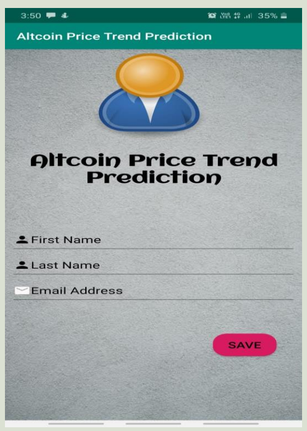
Advantages of the proposed system

By using this training model our app is predict the accurate prize of the Altcoin.
With the help of that price user can decide whether to invest or not in Altcoin.

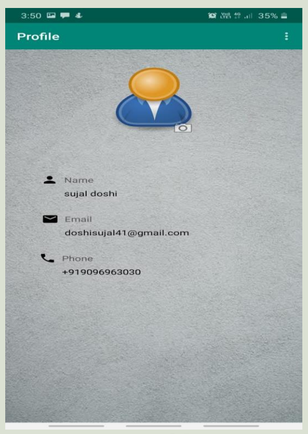
Screenshots



Training Model

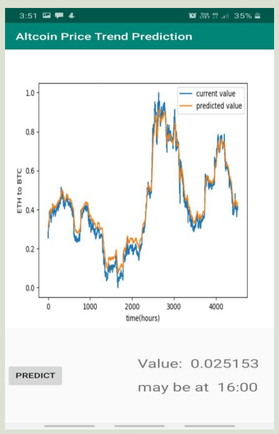


User Registration



User Profile

Altcoin Currency List



Prediction