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Alt-coin Price Trend Prediction using Machine Learning

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Abstract: ***Nowadays, crypto currencies offers 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 Bit coin (BTC), Ethereum (ETH), Ripple (XRP), Stellar Lumens (XLM), Litecoin (LTC), and Monero (XMR).***
Keywords: Altcoin, digital payment, crypto currency, capitalization

I. INTRODUCTION

Altcoin is a crypto currency which is used worldwide for digital payment or simply for investment purposes. Altcoin is decentralized i.e. it is not owned by anyone. Transactions made by Altcoins are easy as they are not tied to any country. Investment can be done through various marketplaces known as ―Altcoin Exchanges‖. These allow people to sell/buy Althorns using different currencies. The largest Altcoin exchange is Mt Gox. Altcoins are stored in a digital wallet which is basically like a virtual bank account. The record of all the transactions, the timestamp data is stored in a place called Block-chain. Each record in a block-chain is called a block. Each block contains a pointer to a previous block of data. The data on block-chain is encrypted. During transactions the user's name is not revealed, but only their wallet ID is made public. Altcoin has two things stability and entrepreneurship. It has the most entrepreneurs creating companies around it with a lot of intellect, dedication and creativity going toward making it more useful. As Altcoin evolves, we can expect Altcoin to grow in unexpected ways as new utility is found. Altcoin owners can expect that its usefulness will only increase over time, hence creating a huge opportunity for investment and make huge profits.

II. LITERATURE REVIEW

Bitcoin is a digital currency designed for the recent market scenario. The currency was created in the year 2009. The idea set out behind the creation of the coin is to use the white paper by one of the mysterious individual Satoshi Nakamoto, whose identity has not yet been recognized (Nakamloto 2013). The idea of the named of Bitcoin is that a paper is termed as bit and the currency as the coin. The concept behind the creation of Bitcoin is the easy transfer of the money without paying a large amount of transaction fees. The currency was recognised as the future currency because the transaction was very easy. One has to install an app in their smart phone and the account was automatically created following a limit steps of instructions. The concept of Bitcoin is increasing the chances of creation of more black money in the global market. One of the main advantages that were considered that the whole transaction could be easily recognized by the means of digital transaction became one major reason to worry about the monetary balance of the GDP of the country. The miners using the currency find it very useful because it does not require any kind of specialized form to make it a currency. This could even save energy that is required for the production of the currency used in the market in the recent scenario. The minders were using efficient processors to keep a check of the things related to the transaction of the money through bitcoin. The easy handling of money and the online transaction could be considered as the strengths of the currency.

III. SYSTEM ARCHITECTURE

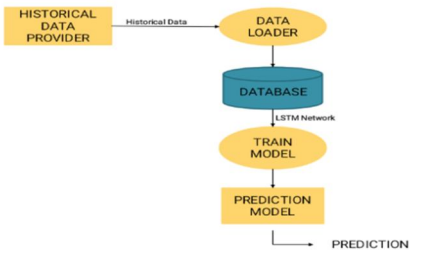

Fig. 1 System Architecture

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Before we build the model, we need to obtain some data for CryptoCampare. 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.

A. Data Set

In the online altcoin marketing these days contains huge amount of raw data in different currencies and in many formats. The different datasets will be taken from the different websites. The datasets will be stored into the database which will be used further for the train model and prediction model.

B. Designing Database

The important part of the system is to design the database for different datasets in particular format. These data will be interlinked to each other. The main data will be used in all the modules as the input data.

C. Trained Model

After designing the database, making a trained model is also an important. The raw data will be processed and made into required or appropriate format so that from the detailed historical data the trained model is generated which is used in the future prediction process.

D. Prediction Model

The prediction model will predict the altcoin price by using the trained model and the current data. And on the basis of the prediction the user will decide whether to invest money or not.

IV. TECHNOLOGY USED

A. Machine Learning

Machine learning is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. Machine learning focuses on the development of computer programs that can access data and use it learn for themselves.

The goal of machine learning is to create model and model is created by process called training. The goal of training is to create accurate model to answer the questions correctly. In order to train the data we need to collect the data and so many steps are required. In machine learning we used some algorithms.

B. 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.

C. 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.

D. 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, ecommerce, and logging applications. The most common use for MySQL however, is for the purpose of a web database.

E. TensorFlow

TensorFlow, 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. TensorFlow can generate data flow graphs for processing when graphs are composed of node groups.

V. DATAFLOW DIAGRAM

A. *Level 0 Dataflow Diagram*

Fig. 2 Dataflow Diagram Level 0

The level-0 DFD gives the basic idea of taking a datasets and form a datasets and store them in database. After that, using historical data trained model is created. Finally, after prediction model the prediction is generated.

B. *Level 1 Dataflow Diagram*

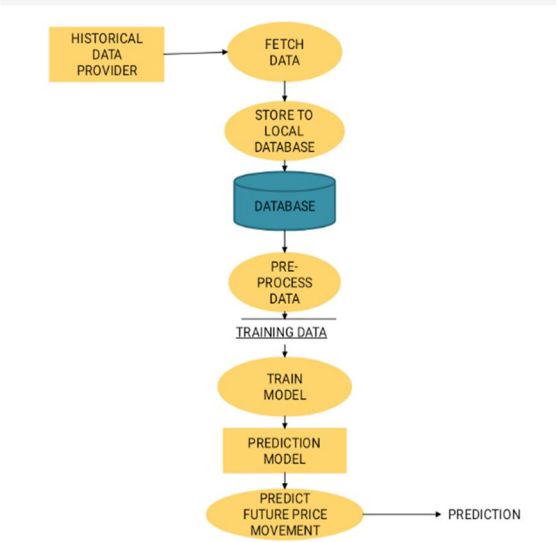

Fig. 3 Dataflow Diagram Level 1

The level-1 DFD show the flow of prediction process it fetches the data from historical data provider and store that data in local database. After preprocessing data train data is generated and based on that train classifier we will predict every movement of the future price.

C. *Level 2 Dataflow Diagram*

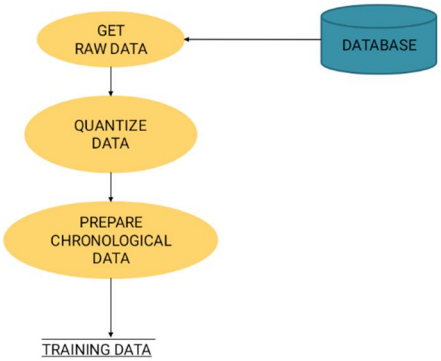

Fig. 4 Dataflow Diagram Level 2

The level-2 DFD show the flow of preprocess data it fetch the data from local database. After getting raw data it generate the quantized data and based on that prepare chronological data which we will generate train data.

VI. FUTURE SCOPE

If we talk about the future scope then it develop an automated trading system with buy or sell notification. Which gives an Alerts message to the user based on the threshold? Threshold is the range in which the prediction of bitcoin price is decided. i.e. If predicted bit coin price is above threshold buy signals. And if predicted bit coin price is below threshold sell signals.

VII. CONCLUSIONS

In this paper ,the system deals with the prediction of the altcoin price. The purpose of this system is to design a application for prediction of altcoin price. That use to people that they can invest there money or not in bitcoin. Alt 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.

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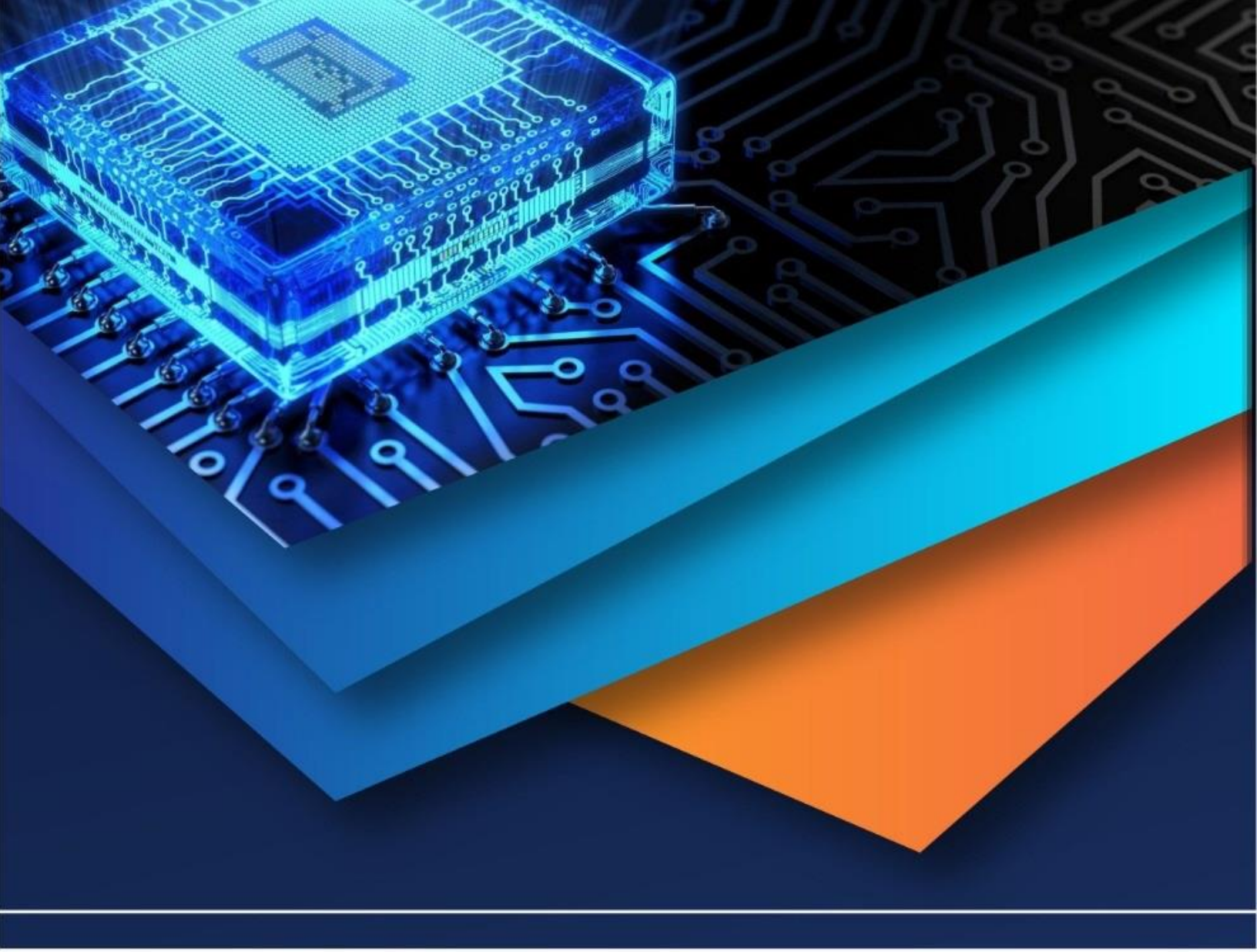

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