Crypto Trading Enhanced Futuristic Investment by Using AI

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ABSTRACT:

Crypto currency is playing an increasingly important role in reshaping the financial system due to its growing popular appeal and merchant acceptance. While many people are making investments in Crypto currency, the dynamical features, uncertainty, the predictability of Crypto currency are still mostly unknown, which dramatically risk the investments. It is a matter to try to understand the factors that influence the value formation. In this study, we use advanced artificial intelligence frameworks of fully connected Artificial Neural Network (ANN) and Long Short-Term Memory (LSTM) Recurrent Neural Network to analyze the price dynamics of Bit coin and Ripple. However, given enough historical information ANN can achieve a similar accuracy, compared with LSTM. However, the explanation of the predictability could vary depending on the nature of the involved machine-learning model.

KEY WORDS— Crypto currency, Neural Network, predictability, machine-learning model.

1. Introduction:

A regulated algorithm creates the peer-to-peer digital currency and payment system known as crypto currency. When a miner successfully completes an algorithm to add a block of transactions to the block chain, a public ledger, the crypto currency is produced. Through encryption, the vv protocol, and a dispersed network, it enables people to store and transport information. The crypto currency system's competitive and essential component is mining. The likelihood of discovering a new coin is higher for the miner with greater processing power than for the miner with less. Bit coin, which Satoshi Nakamoto initially introduced in 2008, is the first and one of the most popular digital currencies (its market valuation was over $ 7 billion in 2014 and then dramatically climbed to $ 29 billion in 2017). The most amazing aspect of bit coin is its decentralization, which essentially eliminates the influence of traditional financial sectors and monetary authorities thanks to its block chain network features.

EXISTING SYSTEM:

Although there have been few studies on the analysis and forecasting of cryptocurrencies, some have attempted to comprehend the time series of cryptocurrencies and develop statistical models to replicate and forecast price movements. While more people are investing in cryptocurrencies, most investors are unable to profit from these investments because they are unaware of the dynamics of crypto currencies and the important variables that affect their movements.

PROPOSED SYSTEM:

The most amazing characteristic of bit coin is its decentralization, which completely eliminates the influence of traditional financial sectors and monetary authorities thanks to its block chain network capabilities. Additionally, Bit coin's electronic payment system is based on cryptographic proof rather than mutual confidence because it plays the crucial role of a trust intermediary in transactions. Examples of when this is applied in practice include recording charity contributions to prevent corruption.

SYSTEM ARCHITECTURE:
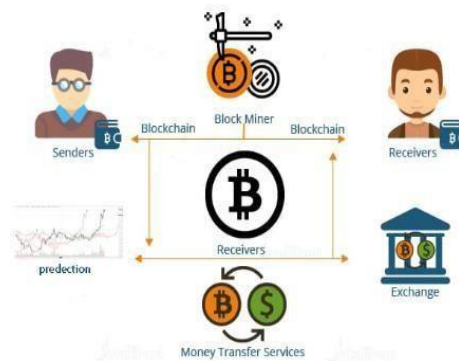
INPUT DESIGN:

The information system and the user are connected through the input design. It entails creating specifications and procedures for data preparation, which are necessary to convert transaction data into a form that can be processed. This can be done either by having people key the data directly into the system or by having the computer read the data from a written or printed document. The input process is designed with an eye towards **minimizing** the quantity of input necessary, **minimizing** errors, **minimizing** delays, **minimizing** extra stages, and maintaining a straightforward workflow. The input is created in a way that maintains privacy while offering security and usability. Input Design considered the following things:

- What data should be given as input?

- How the data should be arranged or coded?

- The dialog to guide the operating personnel in providing input.

- Methods for preparing input validations and steps to follow when error occur.

OUTPUT DESIGN:

A quality output is one, which meets the requirements of the end user and presents the information clearly. In any system results of processing are communicated to the users and to other system through outputs. In output design it is determined how the information is to be displaced for immediate need and also the hard copy output. It is the most important and direct source information to the user. Efficient and intelligent output design improves the system's relationship to help user decision-making

Designing computer output should proceed in an organized, well thought out manner; the right output must be developed while ensuring that each output element is designed so that people will find the system can use easily and effectively. When analysis design computer output, they should Identify the specific output that is needed to meet the requirements.

1. Select methods for presenting information.

2. Create document, report, or other formats that contain information produced by the system.

The output form of an information system should accomplish one or more of   the following objectives.

- Convey information about past activities, current status or projections of the Future.

- Signal important events, opportunities, problems, or warnings.

OVERVIEW OF IMPLEMENTATION:

PYTHON:

- Python is a High level, structured, open-source programming language that can be used for a wide variety of programming tasks. Python within itself is an interpreted programming language that is automatically compiled into byte code before execution.

- It is also a dynamically typed language that includes (but does not require one to use) object-oriented features.

- NASA has used Python for its software systems and has adopted it as the standard scripting language for its Integrated Planning System.

- Python is also extensively used by Google to implement many components of its Web Crawler and Search Engine & Yahoo !For managing its discussion groups.

FEATURES OF PYTHON PROGRAMMING:

1. A simple language which is easier to learn Python has a very simple and elegant syntax.

- It is much easier to read and write Python programs compared to other languages like: C++, Java, C#.

- Python makes programming fun and allows you to focus on the solution rather than syntax. If you are a newbie, it is a great choice to start your journey with Python

1. Free and open-source

- You can freely use and distribute Python, even for commercial use. Not only you can use and distribute software's written in it, you can even make changes to the Python source code.

- Python has a large community constantly improving it in each Iteration.

2. Portability

- You can move Python programs from one platform to another and run it without any changes.

- It runs seamlessly on almost all platforms including Windows Mac OS a Linux.

4.Extensible and Embeddable

- Suppose an application requires high performance. You can easily combine pieces of C/C++ or other languages with Python code.

- This will give your application high performance as well as scripting capabilities which other languages may not provide out of the box.

**5.**A high-level, interpreted language

- Unlike C/C++, you don't have to worry about daunting tasks like memory management, garbage collection and so on.Likewise, when you run Python code, it automatically converts your code to the language your computer understands. You don't need to worry about any lower-level operations.

6.Large standard libraries to solve common tasks

- Python has several standard libraries which makes life of a programmer much easier since you don't have to write all the code yourself.

- For example: Need to connect MySQL database on a Web server?

- You can use MySQL dB library using import MySQL db.

- Standard libraries in Python are well tested and used by hundreds of people. So, you can be sure that it won't brak your application.

7.Object-oriented

- Everything in Python is an object. Object oriented programming(OOP) helps you solve a complex problem intuitively.With OOP, you can divide these complex problems into smaller sets by creating objects.
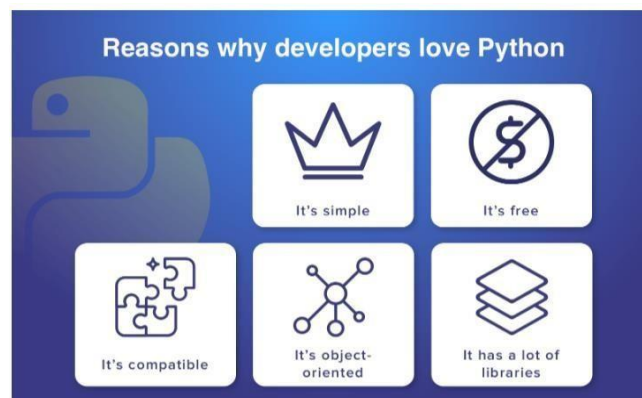
4. Reasons to Choose Python as First Language.

1. Simple Elegant Syntax

- Programming in Python is fun. It's easier to understand and write Python code. Why? The syntax feels natural. Take this source code.

for an example :

```
a = 2
b = 3
sum = a + b
print(sum)
```

Even if you have never programmed before, you can easily guess that this program adds two numbers and prints it.

2. Not overly strict

- You don't need to define the type of a variable in Python.

- Also, it's not necessary to add semicolon at the end of the statement.

- Python enforces you to follow good practices (like proper indentation). These small things can make learning much easier for beginners.

3. Expressiveness of the language

- Python allows you to write programs having greater functionality

- with fewer lines of code. Here's a link to the source code of Tic-tac-toe game with a graphical interface and a smart computer

- opponent in less than 500 lines of code. This is just an example. You will be amazed how much you can do with Python once you learn the basics.

4. Great Community and Support

- Python has a large supporting community. There are numerous active forums online which can be handy if you are stuck. Some of them are:

- Google Forum for Python.

- Python Questions - Stack Overflow.

Python vs Java

Python vs Java		
	python	Java
Learning	Easy to learn	Harder to learn
Cross-platform apps	✕	✓
Compatibility with operating systems	✓	✓
Network based apps	✕	✓

Python vs C#		
	python	C#
Simplicity	✓	✕
Script writing	In any environment	Only in IDE
Libraries	A lot of libraries	Few libraries
Performance	Low	High

ALGORITHMS:

Crypto currency is the peer-to-peer digital money and payment system that exist online via a controlled algorithm.

- Artificial Neural Networks (ANN).

- Recurrent Neural Networks (RNN).

- Long Short Term Memory (LSTM).

Artificial Neural Network(ANN)

- An artificial neuron network (neural network) is a computational model   that mimics the way nerve cells work in the human brain.

- Artificial neural network (ANN) model involves computations and mathematics, which simulate the human–brain processes. Many of the recently achieved advancements are related to the artificial intelligence research area such as image and voice recognition, robotics, and using ANNs.

Recurrent Neural Networks (RNN)

- A recurrent neural network (RNN) is a class of artificial neural network where connections between nodes form a directed graph along a sequence.

- A recurrent neural network (RNN) is a class of artificial neural networks where connections between nodes can create a cycle, allowing output from some nodes to affect subsequent input to the same nodes. This allows it to exhibit temporal dynamic behavior.

Long Short Term Memory (LSTM)

- Long Short-Term Memory (LSTM) networks are a type of recurrent neural network capable of learning order dependence in sequence prediction problems. It is a variety of recurrent neural networks (RNNs) that are capable of learning long-term dependencies, especially in sequence prediction problems.

- It is a variety of recurrent neural networks that are capable of learning long-term dependencies, especially in sequence prediction problems. LSTM has feedback connections, i.e., it is capable of processing the entire sequence of data, apart from single data points such as images..

OVERVIEW OF SYSTEM TESTING:

Testing is done to look for mistakes. Testing is the process of looking for any flaws or weaknesses in a piece of work. It offers a means of examining the operation of parts, subassemblies, assemblies, and/or a finished product. It is the process of testing software to make sure that it satisfies user expectations and meets requirements without failing in an unacceptable way. Different test types exist. Every test type responds to a certain testing requirement.

TEST CASE TABLE:

* In this test case table follow the down % max 1.5% then condition is true either it can be false.

S.NO	CURRENCY	MARKET CAP	PRICE	VOLUME (24)H	DOWN%	TRUE (or) FALSE
1	Bitcoin	$539.00B	$27,652.56	$17.97B	2.11%	True
2	Litecoin	$5.65B	$77.57	$676.31M	0.40%	False
3	Ethereum	$220.16B	$1,829.55	$9.86B	2.46%	True
4	Bytecoin	$6.87M	$0.00003731	$24,676	2.26%	True
5	Ripple	$21.78B	$0.4201	$1.23B	1.41%	False
6	Dash	$468.11M	$41.54	$74.52M	4.95%	True

CONCLUSION:

Crypto currency, like Bit coin, has established itself as the decentralization industry's front-runner. After Bit coin, many more crypto currencies emerged and Ripple. Many people use them as a kind of speculation due to the high level of price uncertainty. Understanding the internal characteristics and predictability of those crypto currencies is so crucial. In this study, we analyze and forecast the price dynamics of Bit coin and Ripple using two different artificial intelligence frameworks: fully-connected Artificial Neural Network (ANN) and Long-Short-Term Memory (LSTM). We demonstrated that, while having various internal structural differences, the ANN and LSTM models are equivalent and both perform adequately in price prediction. Next, we examine this further. In contrast to LSTM, ANN may attain a similar level of accuracy given enough historical data. This study offers a distinctive illustration of the predictability of the crypto currency market price. Nevertheless, the explanation for the predictability may differ depending on the type of machine-learning model used.

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