ISSN: 2582-7219

International Journal of Multidisciplinary Research in Science, Engineering and Technology

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

Impact Factor: 8.206

Volume 8, Issue 4, April 2025

© 2025 IJMRSET | Volume 8, Issue 4, April 2025 |DOI:10.15680/IJMRSET.2025.0804251

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

Understanding Crypto currency Prices with the Help of AI: A user's Guide

Byravarapu Prashant [1], Mamidisetty Srinivas [2], Aripaka.Hima Bindu Sai Sri Durga [3], Garimalla Shobha Rani[4] Jilla Madhan Kumar [5]

Associate Professor, HOD of CSE-Data Science, Eluru College of Engineering & Technology, Eluru, India[1]

B. Tech Student, Department of CSE, Eluru College of Engineering & Technology, Eluru, India[2-5]

Abstract: Cryptocurrency is increasingly contributing to the remaking of the financial system because it is more popular with the masses and merchants are welcoming it. While investment in Cryptocurrency is on the rise, its dynamical characteristics, uncertainty, predictability of Cryptocurrency are still largely unexplored, which significantly jeopardize the investments. It is a concern to attempt to realize the determinants of the value formation. In this research, we employ sophisticated artificial intelligence architectures of fully connected Artificial Neural Network (ANN) and Long Short-Term Memory (LSTM) Recurrent Neural Network to examine the price behavior of Bitcoin, Etherum, and Ripple. We observe that ANN is more based on long-run history and LSTM is more based on short-run dynamics, which reflect the ability of LSTM to use valuable information buried in past memory is more powerful than ANN. Nevertheless, with sufficient past information ANN is able to gain a comparable accuracy, relative to LSTM. This research presents an original illustration that Cryptocurrency market price is predictable. Nevertheless, the description of the predictability might differ according to the type of involved machine-learning model.

KEYWORDS: Cryptography, Artificial Neural Network, Recurrent Neural Network and Machine Learning.

I. INTRODUCTION

Cryptocurrency is the peer-to-peer digital moneyory and payment system that exist online via a controlled algorithem. When a miner cracks an algorithem to record a block of transactions to public ledger named blockchain and the cryptocurrency is created when the block is added to the blockchain. It allows people to store and transfer through encryption protocol and distributed network. Mining is a necessary and competitive component of the cryptocurrency system. The miner with more computational power has a better chance of finding a new coin than that of less. Bitcoin is the first and one of the leading digital currencies (its market capitalization had more than $ 7 billion in 2014, and then it increased significantly to $ 29 billion in 2017) which was first introduced by Satoshi Nakamoto in 2008. Among many features of bitcoin, the most impressive one is decentralization that it can remove the involvement of traditional financial sectors and monetary authorities effectively due to its blockchain network features. In addition, the electronic payment system of Bitcoin is based on cryptographic proof rather than the trust between each other as its transaction history cannot be changed unless redoing all proof of work of all blockchain, which play a critical role of being a trust intermediary and this can be widely used in reality such as recording charitable contribution to avoid corruption. Moreover, bitcoin has introduced the controllable anonymity scheme, and this enhances users' safety and anonymity by using this technology, for instance, we can take advantage of this property of blockchain to make identification cards, and it not only can protect our privacy but verify our identity. Nowadays, investing in cryptocurrencies, like Bitcoin, is one of the efficient ways of earning money. For example, the rate of Bitcoin significant rises in 2017, from a relatively low point 963 USD on January 1ST 2017, to its peak 19186 USD on December 17th 2017, and it closed with 9475 USD at the end of the year. Consequently, the rate of return of bitcoin investment for 2017 was over 880%, which is an impressive and surprising scenery for most investors. While an increasing number of people are making investments in Cryptocurrency, the majority of investors cannot get such profit for being inconsiderable to cryptocurrencies' dynamics and the critical factors that influence the trends of bitcoins. Therefore, raising people's awareness of vital factors can help us to be wise investors. Although market prediction is demanding for its complex nature the dynamics are predictable and understandable to some degree. For example, when there is a shortage of the bitcoin, its price will be increased by their sellers as investors who regard bitcoin as a profitable investment opportunity will have a strong

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

desire to pay for bitcoin. Furthermore, the price of bitcoin may be easily influenced by some influential external factors such as political factors . Although existing efforts on Cryptocurrency analysis and prediction is limited, a few studies have been aiming to understand the Cryptocurrency time series and build statistical models to reproduce and predict price dynamics. For example, Madan et al. collected bitcoins price with the time interval of 0.5, 1and 2 hours, and combined it with the blockchain network, the underlying technology of bitcoin. Their predictive model leveraging random forests and binomial logistic regression classifiers , and the precision of the model is around 55% in predicting bitcoin's price. Shah et al. used Bayesian regression and took advantages of high frequency (10-second) prices data of Bitcoin to improve investment strategy of bitcoin . Their models had also achieved great success. In an Multi-Layer Perceptron (MLP) based prediction model was presented to forecast the next day price of bitcoin by using two sets of input: the first type of inputs: the opening, minimum, maximum and closing price and the second set of inputs: Moving Average of both short (5,10,20 days) and long (100, 200 days) windows. During validation, their model was proved to be accurate at the 95% level. There has been many academic researches looking at exchang rate forecasting, for example, the monetary and portfolio balance models examined by Meese and Rogoff (1983, 1988) . Significant efforts have been made to analyse and predict the trends of traditional financial markets especially the stock market however, predicting cryptocurrencies market prices is still at an early stage. Compared to these stock price prediction models, traditional time series methods are not very useful as cryptocurrencies are not precisely the same with stocks but can be deemed as a complementary good of existing currency system with sharp fluctuations features. Therefore, it is urgently needed to understand the dynamics of cryptocurrencies better and establish a suitable predictive modelling framework. In this study, we hypothesise that time series of cryptocurrencies exhibits a clear internal memory, which could be used to help the memory-based time series model to works more appropriately if the length of internal memory could be quantified. We aim to use two artificial intelligence modelling frameworks to understand and predict the most popular cryptocurrencies price dynamics, including Bitcoin, Ethereum, and Ripple.

II. LITERATURE SURVEY

Using the Bitcoin Transaction Graph to Predict the Price of Bitcoin
AUTHORS: Greaves, A., & Au, B.

Bitcoin is the world's leading cryptocurrency, allowing users to make transactions securely and anonymously over the Internet. In recent years, The Bitcoin the ecosystem has gained the attention of consumers, businesses, investors and speculators alike. While there has been significant research done to analyze the network topology of the Bitcoin network, limited research has been performed to analyze the network's influence on overall Bitcoin price. In this paper, we investigate the predictive power of blockchain network-based features on the future price of Bitcoin. As a result of blockchain-networkbased feature engineering and machine learning optimization, we obtain up-down Bitcoin price movement classification accuracy of roughly 55%.

CRYPTOCURRENCY VALUE FORMATION: AN EMPIRICAL ANALYSIS LEADING TO A COST OF PRODUCTION MODEL FOR VALUING BITCOIN
AUTHORS: Hayes, A. S.

This paper aims to identify the likely source(s) of value that cryptocurrencies exhibit in the marketplace using cross sectional empirical data examining 66 of the most used such 'coins'. A regression model was estimated that points to three main drivers of cryptocurrency value: the difficulty in 'mining 'for coins; the rate of unit production; and the cryptographic algorithm employed. These amount to relative differences in the cost of production of one coin over another at the margin, holding all else equal. Bitcoin-denominated relative prices were used, avoiding much of the price volatility associated with the dollar exchange rate. The resulting regression model can be used to better understand the drivers of relative value observed in the emergent area of cryptocurrencies. Using the above analysis, a cost of production model is proposed for valuing bitcoin, where the primary input is electricity. This theoretical model produces useful results for both an individual producer, by setting breakeven points to start and stop production, and for the bitcoin exchange rate on a macro level. Bitcoin production seems to resemble a competitive commodity market; in theory miners will produce until their marginal costs equal their marginal product.

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

Economic prediction using neural networks: the case of IBM daily stock returns

AUTHORS: H. White
A report is presented of some results of an ongoing project using neural-network modeling and learning techniques to search for and decode nonlinear regularities in asset price movements. The author focuses on the case of IBM common stock daily returns. Having to deal with the salient features of economic data highlights the role to be played by statistical inference and requires modifications to standard learning techniques which may prove useful in other contexts

Designing a neural network for forecasting financial and economic time series

AUTHORS: Kaastra and M. Boyd
Artificial neural networks are universal and highly flexible function approximators first used in the fields of cognitive science and engineering. In recent years, neural network applications in finance for such tasks as pattern recognition, classification, and time series forecasting have dramatically increased. However, the large number of parameters that must be selected to develop a neural network forecasting model have meant that the design process still involves much trial and error. The objective of this paper is to provide a practical introductory guide in the design of a neural network for forecasting economic time series data. An eight-step procedure to design a neural network forecasting model is explained including a discussion of tradeoffs in parameter selection, some common pitfalls, and points of disagreemen among practitioners.

III. SYSTEM ANALYSIS

3.1 EXISTING SYSTEM

Although existing efforts on Cryptocurrency analysis and prediction is limited, a few studies have been aiming to understand the Cryptocurrency time series and build statistical models to reproduce and predict price dynamics. While an increasing number of people are making investments in Cryptocurrency, the majority of investors cannot get such profit for being inconsiderable to cryptocurrencies' dynamics and the critical factors that influence the trends of bitcoins.

3.2 DISADVANTAGES OF EXISTING SYSTEM

Therefore, raising people's awareness of vital factors can help us to be wise investors. Although market prediction is demanding for its complex nature, the dynamics are predictable and understandable to some degree.

3.3 PROPOSED SYSTEM

Among many features of bitcoin, the most impressive one is decentralisation that it can remove the involvement of traditional financial sectors and monetary authorities effectively due to its blockchain network features. In addition, the electronic payment system of Bitcoin is based on cryptographic proof rather than the trust between each other as its transaction history cannot be changed unless redoing all proof of work of all blockchain, which play a critical role of being a trust intermediary and this can be widely used in reality such as recording charitable contribution to avoid corruption.

3.1.1 ADVANTAGES OF PROPOSED SYSTEM

The bitcoin has introduced the controllable anonymity scheme, and this enhances users' safety and anonymity by using this technology, for instance, we can take advantage of this property of blockchain to make identification cards, and it not only can protect our privacy but verify our identity.

3.2 MODULES

In this work we include four modules are used,

- User
- Agent
- admin
- artificial intelligence

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

3.2.1 USER:

The electronic payment system of Bitcoin is based on cryptographic proof rather than the trust between each other as its transaction history cannot be changed unless redoing all proof of work of all blockchain, which play a critical role of being a trust intermediary and this can be widely used in reality such as recording charitable contribution to avoid corruption. Moreover, bitcoin has introduced the controllable anonymity scheme, and this enhances users' safety and anonymity by using this technology, for instance, we can take advantage of this property of blockchain to make identification cards, and it not only can protect our privacy but verify our identity.

3.2.2 AGENT:

While an increasing number of people are making investments in Cryptocurrency, the majority of investors cannot get such profit for being inconsiderable to cryptocurrencies' dynamics and the critical factors that influence the trends of bitcoins. Therefore, raising people's awareness of vital factors can help us to be wise investors. Although market prediction is demanding for its complex nature [6, 7], the dynamics are predictable and understandable to some degree. For example, when there is a shortage of the bitcoin, its price will be increased by their sellers as investors who regard bitcoin as a profitable investment opportunity will have a strong desire to pay for bitcoin. Furthermore, the price of bitcoin may be easily influenced by some influential external factors such as political factors.

3.2.3 ADMIN:

The aim of admin is to approve the users and agents . When a miner cracks an algorithem to record a block of transactions to public ledger named blockchain and the cryptocurrency is created when the block is added to the blockchain. It allows people to store and transfer through encryption protocol and distributed network. Mining is a necessary and competitive component of the cryptocurrency system. The miner with more computational power has a better chance of finding a new coin than that of less . Bitcoin is the first and one of the leading digital currencies (its market capitalisation had more than $ 7 billion in 2014, and then it increased significantly to $ 29 billion in 2017) which was first introduced by Satoshi Nakamoto in 2008. Among many features of bitcoin, the most impressive one is decentralisation that it can remove the involvement of traditional financial sectors and monetary authorities effectively due to its blockchain network features.

3.2.4 ARTIFICIAL INTELLIGENCE:

The application of advanced digital, smart technologies, robotic systems, new materials and design techniques, creation of large data processing systems, computer-aided learning and artificial intelligence (AI) are relevant for various branches of science and technology, including manned space programs. Some technology concepts and pilot systems based on the AI (3-D computer vision, automated systems for planning and evaluating the activities of cosmonauts, inquiry and communications system) were developed in the industry over several decades.

IV. SYSTEM DESIGN

4.1 SYSTEM ARCHITECTURE

- The DFD is also called as bubble chart. It is a simple graphical formalism that can be used to represent a system in terms of input data to the system, various processing carried out on this data, and the output data is generated by this system.
- The data flow diagram (DFD) is one of the most important modeling tools. It is used to model the system components. These components are the system process, the data used by the process, an external entity that interacts with the system and the information flows in the system.
- DFD shows how the information moves through the system and how it is modified by a series of transformations. It is a graphical technique that depicts information flow and the transformations that are applied as data moves from input to output.
- DFD is also known as bubble chart. A DFD may be used to represent a system at any level of abstraction. DFD

© 2025 IJMRSET | Volume 8, Issue 4, April 2025 |DOI:10.15680/IJMRSET.2025.0804251

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

may be partitioned into levels that represent increasing information flow and functional detail.

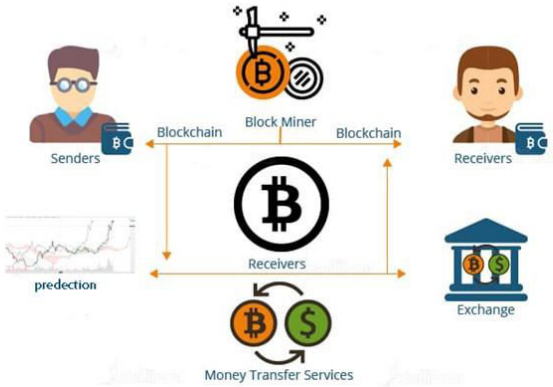

Fig 1: System Architecture

4.2 UML DIAGRAMS

UML stands for Unified Modeling Language. UML is a standardized general- purpose modeling language in the field of object-oriented software engineering. The standard is managed, and was created by, the Object Management Group. The goal is for UML to become a common language for creating models of object oriented computer software. In its current form UML is comprised of two major components: a Meta-model and a notation. In the future, some form of method or process may also be added to or associated with, UML. The Unified Modeling Language is a standard language for specifying, Visualization, Constructing and documenting the artifacts of software system, as well as for business modeling and other non-software systems.
UML was created as a result of the chaos revolving around software development and documentation. In the 1990s, there were several different ways to represent and document software systems.
The UML represents a collection of best engineering practices that have proven successful in the modeling of large and complex systems. The UML is a very important part of developing objects oriented software and the software development process. The UML uses mostly graphical notations to express the design of software projects.

4.2a GOALS:

The Primary goals in the design of the UML are as follows:

1. Provide users a ready-to-use, expressive visual modeling Language so that they can develop and exchange meaningful models.
2. Provide extendibility and specialization mechanisms to extend the core concepts.
3. Be independent of particular programming languages and development process.
4. Provide a formal basis for understanding the modeling language.
5. Encourage the growth of object oriented tools market.
6. Support higher level development concepts such as collaborations, frameworks, patterns and components.
7. Integrate best practices.

V. RESULTS

5.1 ALGORITHMS

The prediction algorithms used in this project are primarily based on Long Short-Term Memory (LSTM) networks, which are a type of Recurrent Neural Network (RNN) well-suited for time series forecasting.

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

5.1 Long Short-Term Memory (LSTM) Networks:

LSTM networks are a special kind of RNN capable of learning long-term dependencies. They are particularly effective for time series prediction tasks due to their ability to remember information for long periods. The LSTM model in this project is used to predict cryptocurrency prices based on historical data.

Key Components:

- LSTM Layers: These layers are designed to avoid the long-term dependency problem. They can remember values over arbitrary time intervals.
- Dense Layers: Fully connected layers that help in making the final prediction.
- Dropout Layers: Used to prevent overfitting by randomly setting a fraction of input units to 0 at each update during training..

5.2 Data Normalization

Before feeding the data into the LSTM model, it is normalized using the MinMaxScaler from the sklearn.preprocessing module. This scales the data to a range between 0 and 1, which helps in speeding up the training process and improving the model's performance.

5.3 Sequence Generation

The historical price data is converted into sequences to be used as input for the LSTM model. Each sequence consists of a fixed number of past observations (e.g., 60 days) to predict the next value.

5.4 Model Training And Evaluation

The LSTM model is trained on the historical data, and its performance is evaluated using metrics such as Mean Absolute Error (MAE) and Mean Squared Error (MSE). The model is trained to minimize these errors, ensuring accurate predictions.

5.5 Exponential Moving Average (EMA)

In addition to LSTM, the project also uses Exponential Moving Average (EMA) for smoothing the data. EMA is a type of moving average that places a greater weight and significance on the most recent data points.

5.6 Data Visualization

The project uses Plotly for creating interactive graphs to visualize the historical and predicted cryptocurrency prices. This helps in understanding the trends and patterns in the data.

The following figures present the sequence of screenshots of the results.

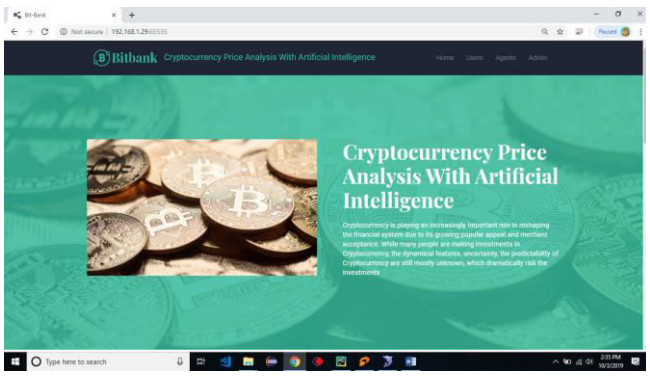

Fig 2a: Home page

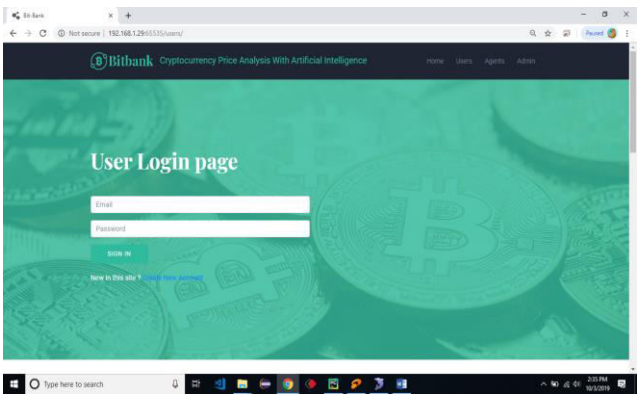

Fig 2b: Main Home Page

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

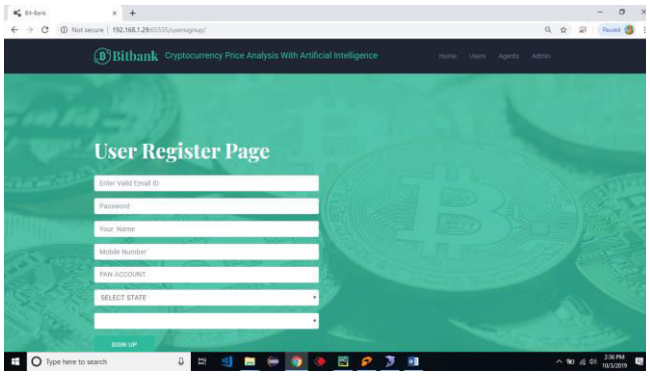

Fig 2c: User Registration Page.

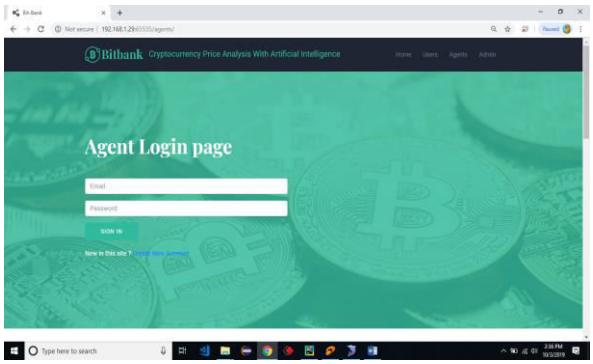

Fig 2d: Agent login page

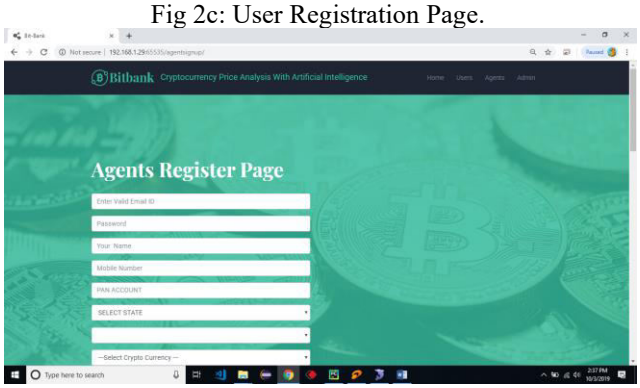

Fig 2e: Agent Registration Page

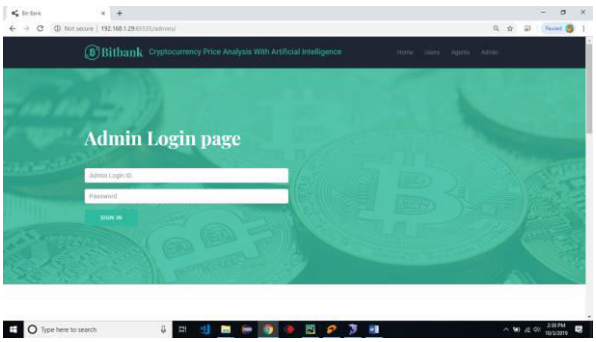

Fig 2f: Admin Login Page

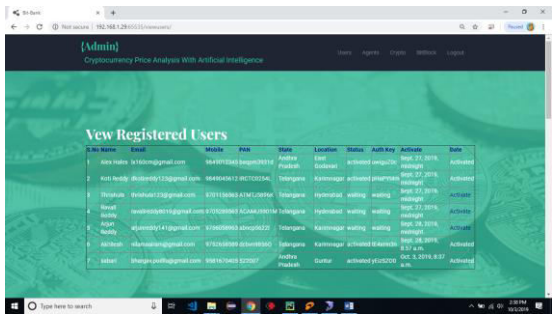

Fig 2g: Admin Activate Users

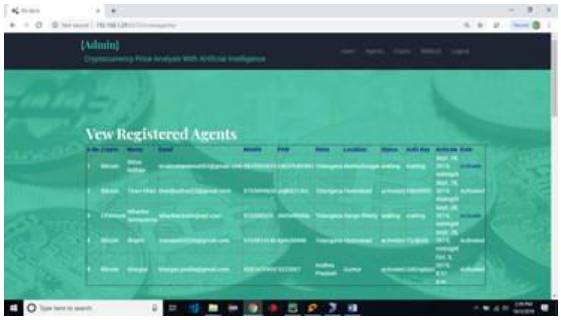

Fig 2h: Admin Activate Agents

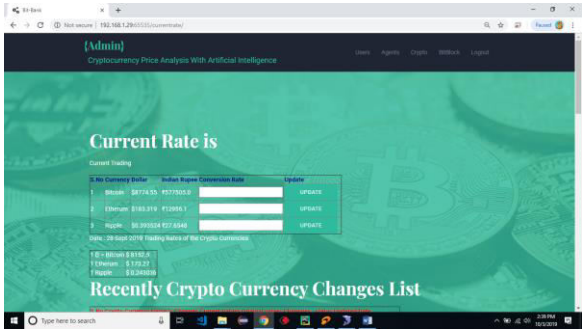

Fig 2i: Current price and Update

Fig 2j: Blockchain ledger maintance

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

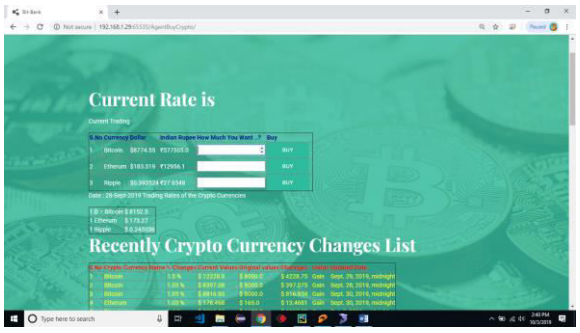

Fig 2k: Agent Butting Crypto Coins

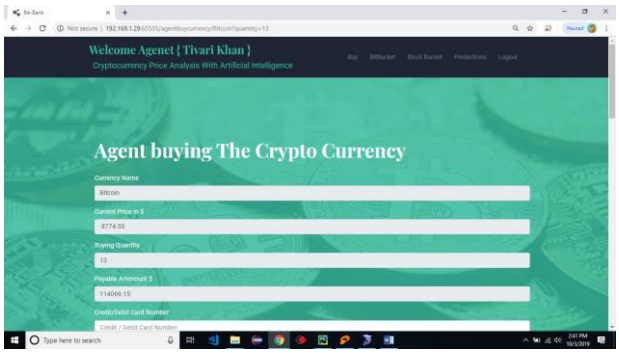

Fig 2l: Agent Buy Transactions

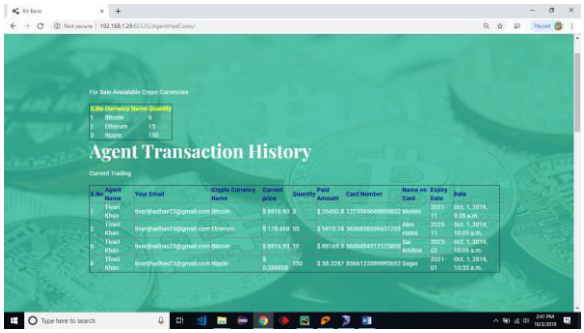

Fig 2m: Agent Transaction History

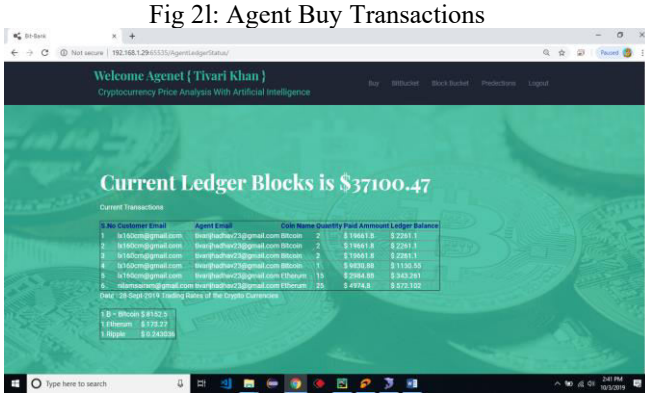

Fig 2n: Agent View Ledger Balance

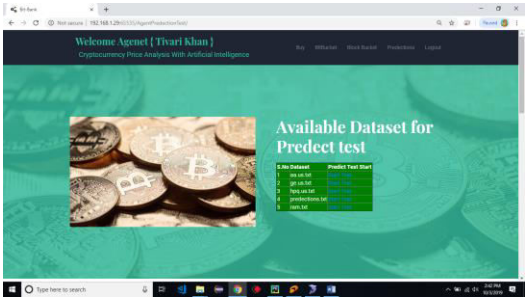

Fig 2o: Agent View predictions Data Base

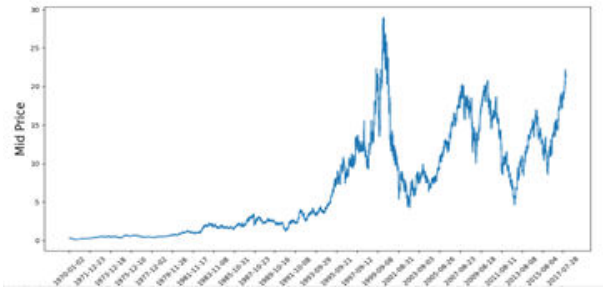

Fig 2p: Dataset Analysis

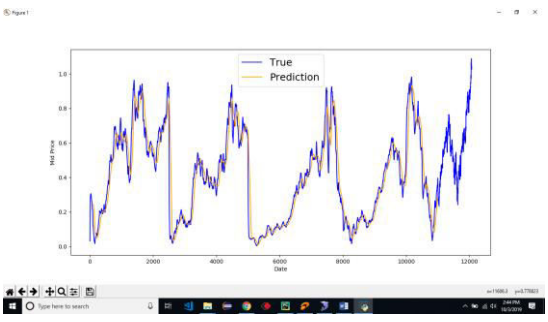

Fig 2q: True Predections

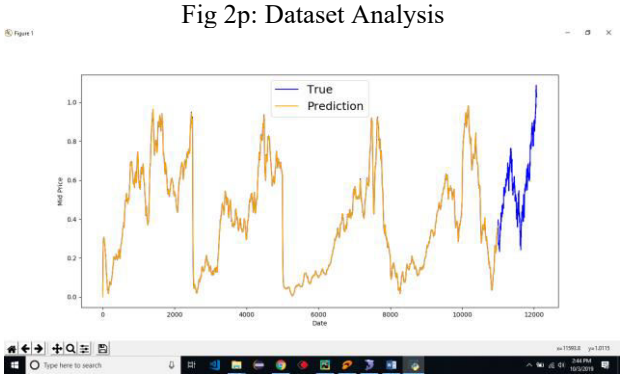

Fig 2r: Predictions

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

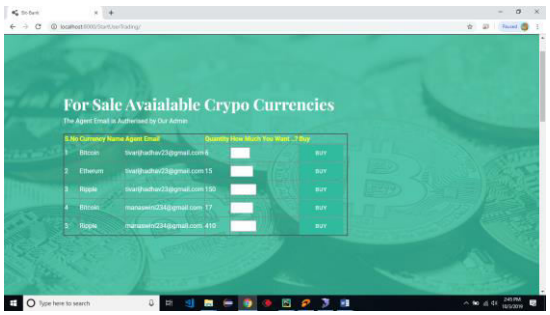

Fig 2s: User buying coins

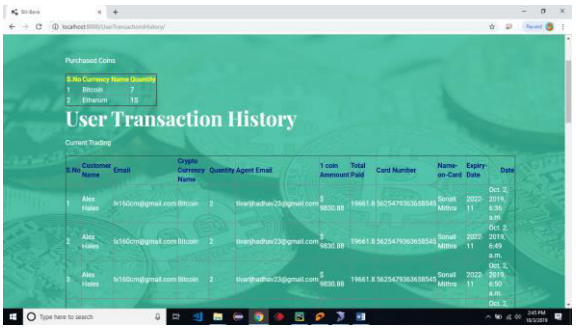

Fig 2t: User purchased Coins

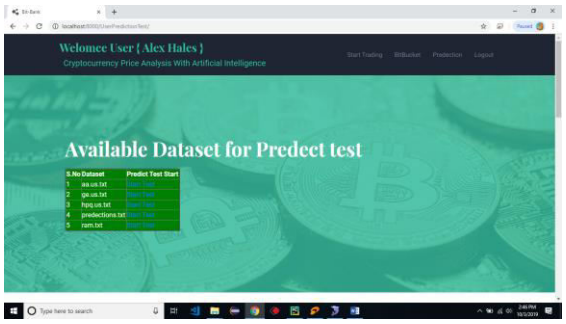

Fig 2u: User can test the predictions

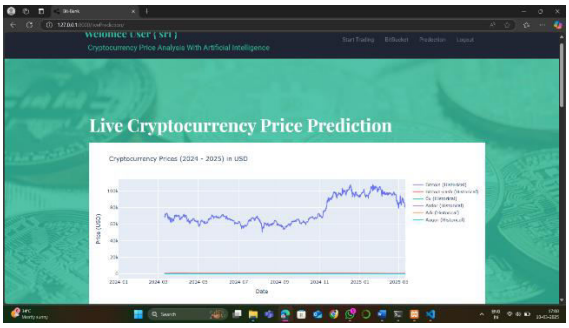

Fig 2v: Live Analysis

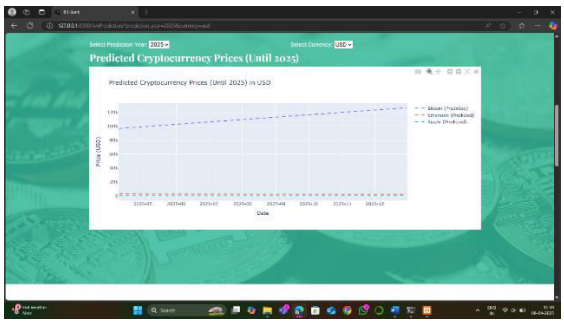

Fig 2w: Live Prediction

VI. CONCLUSIONS AND FUTURE WORK

6.1 CONCLUSIONS

Cryptocurrency, such as Bitcoin, has established itself as the leading role of decentralisation. There are a large number of cryptocurrencies sprang up after Bitcoin such as Ethereum and Ripple. Because of the significant uncertainty in its prices, many people hold them as a means of speculation. Therefore, it is critically important to understand the internal features and predictability of those cryptocurrencies. In this study, we use two distinct artificial intelligence frameworks, namely, fully-connected Artificial Neural Network (ANN) and Long-Short-Term-Memory (LSTM) to analyse and predict the price dynamics of Bitcoin, Etherum, and Ripple. We showed that the ANN and LSTM models are comparable and both reasonably well enough in price prediction, although the internal structures are different. Then we further analyse the influence of historical memory on model prediction. We find that ANN tends to rely more on long-term history while LSTM tends to rely more on short-term dynamics, which indicate the efficiency of LSTM to utilise useful information hidden in historical memory is stronger than ANN. However, given enough historical

ISSN: 2582-7219 | www.ijmrset.com | Impact Factor: 8.206| ESTD Year: 2018|

International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

information ANN can achieve a similar accuracy, compared with LSTM. This study provides a unique demonstration that Cryptocurrency market price is predictable. However, the explanation of the predictability could vary depending on the nature of the involved machine-learning model.

6.2 FUTURE WORK

The current system offers a solid foundation for predicting cryptocurrency prices using AI, but future enhancements could significantly elevate its capabilities by integrating real-time predictions for additional cryptocurrencies like Ethereum and Ripple using advanced hybrid models (e.g., CNN-LSTM, Transformers) with features like trading volume, market sentiment from social media (via NLP), and blockchain metrics, all processed through scalable frameworks like Apache Spark and powered by premium APIs (e.g., Binance) to overcome CoinGecko's rate limits; the user experience could be enriched with interactive dashboards, personalized trading recommendations, and a mobile app, while security could be bolstered with smart contracts, anomaly detection, and advanced encryption, alongside longitudinal benchmarking against ARIMA or Prophet, open-source collaboration on GitHub, and compliance with regulations—ultimately transforming the prototype into a comprehensive, energy-efficient platform that not only refines price predictability but also delivers practical, user-centric tools for investors.

REFERENCES

1. Greaves, A., & Au, B. (2015). Using the bitcoin transaction graph to predict the price of bitcoin. No Data.
2. Hayes, A. S. (2017). Cryptocurrency value formation: An empirical study leading to a cost of production model for valuing bitcoin. Telematics and Informatics, 34(7), 1308-1321.
3. Shah, D., & Zhang, K. (2014, September). Bayesian regression and Bitcoin. In Communication, Control, and Computing (Allerton), 2014 52nd Annual Allerton Conference on (pp. 409-414). IEEE.
4. Indra N I, Yassin I M, Zabidi A, Rizman Z I. Non-linear autoregressive with exogenous input (mrx) bitcoin price prediction model using so-optimized parameters and moving average technical indicators. J. Fundam. Appl. Sci., 2017, 9(3S), 791-808`
5. Adebiyi AA, Ayo C K, Adebiyi MO, Otokiti SO. Stock price prediction using a neural network with hybridized market indicators. Journal of Emerging Trends in Computing and Information Sciences, 2012, 3(1):1-9
6. Adebiyi AA, Ayo C K, Adebiyi MO, Otokiti SO. Stock price prediction using a neural network with hybridized market indicators. Journal of Emerging Trends in Computing and Information Sciences, 2012, 3(1):1-9
7. Ariyo AA, Adewumi AO, Ayo CK. Stock price prediction using the ARIMA model. In UKSim-AMSS 16th IEEE International Conference on Computer Modelling and Simulation (UKSim), 2014, pp. 106-112
8. Ron, D., & Shamir, A. (2013, April). Quantitative analysis of the full bitcoin transaction graph. In International Conference on Financial Cryptography and Data Security (pp. 6-24). Springer, Berlin, Heidelberg.
9. H. White, "Economic prediction using neural networks: The case of ibm daily stock returns," in Neural Networks, 1988., IEEE International Conference on. IEEE, 1988, pp. 451–458
10. Kaastra and M. Boyd, "Designing a neural network for forecasting financial and economic time series," Neurocomputing, vol. 10, no. 3, pp. 215–236, 1996.
11. H. White, "Economic prediction using neural networks: The case of ibm daily stock returns," in Neural Networks, 1988., IEEE International Conference on. IEEE, 1988, pp. 451–458 .
12. Cheung, Y. W., Chinn, M. D., & Pascual, A. G. (2005). Empirical exchange rate models of the nineties: Are any fit to survive?. Journal of international money and finance, 24(7), 1150-1175
13. Hochreiter, S., & Schmidhuber, J. (1997). Long Short-Term Memory. Neural Computation, 9(8), 1735-1780.
14. Nakano, M., Takahashi, A., & Takahashi, S. (2018). Bitcoin technical trading with artificial neural network. Physica A: Statistical Mechanics and its Applications, 510, 587-609.
15. Livieris, I. E., Pintelas, E., & Pintelas, P. (2020). A CNN-LSTM model for gold price time series forecasting. Neural Computing and Applications, 32(1), 17351-17360.
16. Patel, M. M., Tanwar, S., Gupta, R., & Kumar, N. (2020). A deep learning-based cryptocurrency price prediction scheme for financial institutions. Journal of Information Security and Applications, 55, 102583.
17. Chen, W., Xu, H., Jia, L., & Gao, Y. (2021). Machine learning model for Bitcoin exchange rate prediction using economic and blockchain factors. International Journal of Forecasting, 37(2), 652-672.
18. Zhang, Y., & Chan, S. (2023). Real-time cryptocurrency price prediction using Transformer-based models: A case study on Ethereum and Ripple. IEEE Transactions on Artificial Intelligence, 4(3), 512-523.

INTERNATIONAL STANDARD SERIAL NUMBER INDIA

INTERNATIONAL JOURNAL OF MULTIDISCIPLINARY RESEARCH

IN SCIENCE, ENGINEERING AND TECHNOLOGY

| Mobile No: +91-6381907438 | Whatsapp: +91-6381907438 | ijmrset@gmail.com |

www.ijmrset.com