BITCOIN PRICE PREDICTION USING LSTM

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INTRODUCTION

- **Bitcoin** is a digital or virtual currency created in 2008 that uses peer-to-peer technology to facilitate instant payments.
- Bitcoin has recently gotten a lot of attention in the disciplines of economics, cryptography, and computer science.
- Bitcoin adoption has been increasing at an annual rate of 113%.
- **Machine learning (ML)** is a type of artificial intelligence that can predict the future based on past data.
- ML-based models have various advantages over other forecasting models as prior research has shown that it not only delivers a result that is nearly or exactly the same as the actual result, but it also improves the accuracy of the result.

ABSTRACT

Bitcoin is the first digital decentralized cryptocurrency that has shown a significant increase in market capitalization in recent years. The objective of this paper is to determine the predictable price direction of Bitcoin in USD by machine learning technique. We explored several algorithms of machine learning using supervised learning to develop a prediction model and provide informative analysis of future market prices. Due to the difficulty of evaluating the exact nature of a Time Series model, it is often very difficult to produce appropriate forecasts. Then we continue to implement long short-term memory cells (LSTM) algorithm. Thus, we analyzed the time series model prediction of bitcoin prices with greater efficiency using long short-term memory (LSTM) techniques.

PROBLEM STATEMENT

1. Bitcoin is the most complex cryptocurrency which value change in every second.
2. Investing money for bitcoin is more risk and less profit.

EXISTING SYSTEM

- Statistical methods including Logistic Regression for Bitcoin daily price prediction with an accuracy of 66%.
- In this paper,Compared with benchmark results for daily price prediction, Machine learning models including Random Forest, Support Vector Machine for predicted the bitcoin price and its accuracy of 66% and 65.3%, respectively.

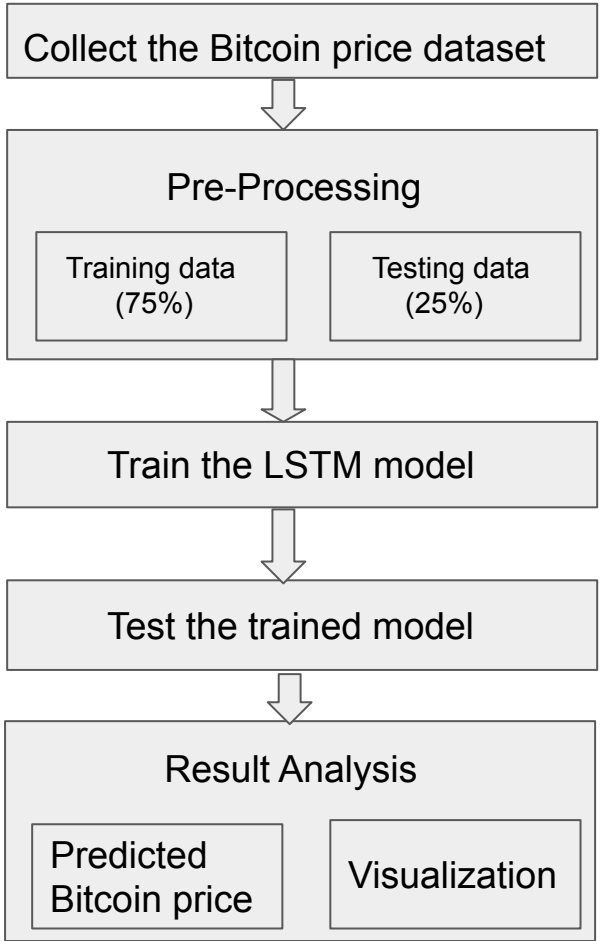
DRAWBACKS

- Logistics Regression-It is used to the probability of event success and failure.So we can’t get a good accuracy.
- Support Vector Machine-It is not suitable for large dataset.SVM does not perform very well when the dataset has more noise i.e..,target classes are overlapping.
- Random Forest- Random forest creates a lot of trees and combines their outputs.It requires much more time to train.

OBJECTIVES

- In our project, we used a time series model (LSTM) to leverage machine learning technology to predict the real-time price of Bitcoin.
- However, machine learning literature is lacking verification of whether or not the stock evaluation strategies are legitimate for the cryptocurrencies, and if so, how they may be modified.
- That is what features want to be eliminated or introduced as a foundation for price prediction, whether current machine learning algorithms work for cryptocurrencies, and which technique yields the excellent outcomes.

WORKFLOW


Collect the Bitcoin price dataset
Pre-Processing
Training data (75%)
Testing data (25%)
Train the LSTM model
Test the trained model
Result Analysis
Predicted Bitcoin price
Visualization

LITERATURE SURVEY

S.NO	TITLE	METHOD USED
1	Journal of computational and applied mathematics.	Logistic Regression, Random Forest, Support Vector Machine
2	Improving the Cryptocurrency Price Prediction Performance Based on Reinforcement Learning.	Reinforcement learning
3	Real-Time Prediction of BITCOIN Price using Machine Learning Techniques and Public Sentiment Analysis.	Recurrent Neural Network(RNN).
4	Stochastic neural networks for cryptocurrency price prediction.	Multilayer perceptron (MLP)

REFERENCES

1. Chen, Z., Li, C. and Sun, W., 2020. Bitcoin price prediction using machine learning: An approach to sample dimension engineering. *Journal of Computational and Applied Mathematics*, *365*, p.112395.
2. Shahbazi, Z. and Byun, Y.C., 2021. Improving the Cryptocurrency Price Prediction Performance Based on Reinforcement Learning. *IEEE Access*, *9*, pp.162651-162659.
3. Raju, S.M. and Tarif, A.M., 2020. Real-Time Prediction of BITCOIN Price using Machine Learning Techniques and Public Sentiment Analysis. *arXiv preprint arXiv:2006.14473*.
4. Jay, P., Kalariya, V., Parmar, P., Tanwar, S., Kumar, N. and Alazab, M., 2020. Stochastic neural networks for cryptocurrency price prediction. *Ieee access*, *8*, pp.82804-82818.
5. Hamayel, M.J. and Owda, A.Y., 2021. A Novel Cryptocurrency Price Prediction Model Using GRU, LSTM and bi-LSTM Machine Learning Algorithms. AI, 2(4), pp.477-496.