

Cryptocurrency Price Prediction using Machine Learning

Mrs. Priyadharshini M¹, Barathraj T², Gowtham GV³, Hariprasath T⁴

Assistant Professor, Department of Computer Science and Engineering¹

UG Scholar, Department of Computer Science and Engineering^{2,3,4}

SRM Valliammai Engineering College, Chengalpattu, Tamil Nadu, India

Abstract: *Crypto currency has recently received a lot of attention from the media and the public due to its recent price surge and crash. Correspondingly, many researchers have investigated various factors that affect the Crypto currency price and the patterns behind its fluctuations, in particular, using various machine learning methods. In this paper, we study and compare various state-of-the-art deep learning methods such as a Machine Learning (ML), a long short-term memory (LSTM) model, a convolutional neural network, a deep residual network, and their combinations for Crypto currency price prediction. Crypto currency is one of the most popular and valuable crypto currency in the current financial market, attracting traders for investment and thereby opening new research opportunities for researchers. Countless research works have been performed on Crypto currency price prediction with different machine learning prediction algorithms. For the research: relevant features are taken from the dataset having strong correlation with Crypto currency prices and random data chunks are then selected to train and test the model. The random data which has been selected for model training, may cause unfitting outcomes thus reducing the price prediction accuracy. Here, a proper method to train a prediction model is being scrutinised. The proposed methodology is then applied to train a simple Long Short-Term Memory (LSTM) model to predict the crypto currency price for the upcoming 5 days. When the LSTM model is trained with a suitable data chunk, thus identified, sustainable results are found for the prediction. In the end of this paper, the work culminates with future improvements. In addition, a simple profitability analysis showed that classification models were more effective than regression models for algorithmic trading. Overall, the performances of the proposed deep learning-based prediction models were comparable. Connecting Django server to create front end using HTML, CSS, Java Script.*

Keywords: Crypto currency.

REFERENCES

- [1]. M. Briaere, K. Oosterlinck, and A. Szafarz, Virtual currency, tangible return: Portfolio diversification with Crypto currencies, Tangible Return: Portfolio Diversification with Crypto currencies, 2013.
- [2]. S. Nakamoto, "Crypto currency: A Peer-to-Peer Electronic Cash System",
- [3]. McNally, Sean & Roche, Jason & Caton, Simon. (2018). Predicting the Price of Crypto currency Using Machine Learning. 339343. 10.1109/PDP2018.2018.00060.
- [4]. H. Jang and J. Lee, "An Empirical Study on Modeling and Prediction of Crypto currency Prices With Bayesian Neural Networks Based on Blockchain Information," in IEEE Access, vol. 6, pp. 5427-5437, 2018.
- [5]. Hota HS, Handa R & Shrivastava AK, "Time Series Data Prediction Using Sliding Window Based RBF Neural Network", International Journal of Computational Intelligence Research, Vol.13, No.5, (2017), pp.1145-1156
- [6]. 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.
- [7]. C. Chatfield and M. Yar, "Holt-winters forecasting: some practical issues," The Statistician, pp. 129-140, 1988.
- [8]. B. Scott, "Crypto currency academic paper database," suitpossum blog, 2016.

- [9]. M. D. Rechenthin, "Machine-learning classification techniques for the analysis and prediction of high-frequency stock direction," 2014.
- [10]. D. Shah and K. Zhang, "Bayesian regression and crypto currency," in Communication, Control, and Computing (Allerton), 2014 52nd Annual Allerton Conference on. IEEE, 2014, pp. 409–414.
- [11]. G. H. Chen, S. Nikolov, and D. Shah, "A latent source model for nonparametric time series