Cryptocurrencies forecasting based on ANN, ARIMA, and technical analysis indicators

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ABSTRACT

This research evaluates the performance of different prediction models implemented with artificial neural networks and ARIMA models. For this purpose, error indicators such as MSE, MAPE and NMSE are used. The main objective of these prediction systems is to know the future value of the exchange value of a currency pair. All the implementation will be done in Python using libraries such as Pandas and TensorFlow.

KEYWORDS

ANN, neural networks, crypto, forecasting, time series, economics.

DATASET

It is desired to use the BTC/USD and DOGE/USD time series as the main information dataset for training and validation with both datasets. In addition to this, we want to use the following inputs to the system:

(1) Last 4 closing prices (k-1 ,k-2, k-3, k-4)
(2) Stochastic oscillator
(3) Relative Strength Index,
(4) indicator RSI
(5) ROC
(6) Capital Volume

RELATED WORK

(1) Time-Series Prediction of Cryptocurrency Market using Machine Learning Techniques, Mahir Iqbal1, EAI.EU. June 2021.
(2) Stock Prediction Based on Technical Indicators Using Deep Learning Model, Piyush Kumar Shukla, Computers, Materials and Continua · September 2021.
(3) Forecasting directional movement of Forex data using LSTM with technical and macroeconomic indicators, Deniz Can Yıldırım, Yıldırım et al. Financ Innov (2021) 7:1.

TEAM

The people I asked were already in a group so I decided to work alone.

PROJECT TIMELINE

The goal is to have experimental results on the ARIMA model by December 14. The full experimentation including ANN should be ready approximately by January 14.

This report is submitted to MIU in fulfillment of Machine Learning project requirements.

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