

BIT COIN PRICE PREDICTION USING MACHINE LEARNING

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Abstract

In this paper, we proposed to predict the price of Bit coin using Machine Learning technique. We will predict the price of Bit coin using Recurrent Neural Network (RNN) Machine Learning Technique. This technique is more reliable as its prediction value is more accurate as compared to other techniques like ARIMA, ARMA etc.
Index Terms- Bit coin Prediction, Machine Learning, Recurrent Neural Networks (RNNs).

I. INTRODUCTION

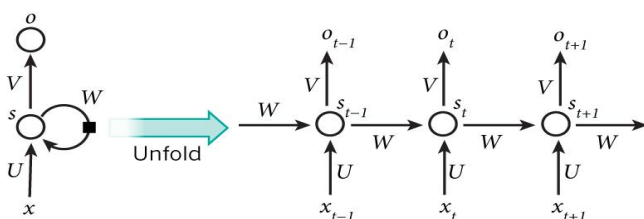
Bitcoin is the longest running and most well know crypto currency. Crypto currencies are relatively unpredictable compared to traditional financial instruments. The increase/decrease in Bit coin’s price with large percentages over short periods of time is an interesting phenomenon which cannot be predicted at all. This Paper aims to predict of these crypto currencies with Machine Learning using Bit coin as an example so as to provide insight into the future trend of Bit coin Understand the scientific terms and jargon related to your research work. These predictions could be used as the foundation of a Bit coin trading strategy. To make these predictions, first we will have to familiarize yourself with a Machine learning techniques like Recurrent Neural Network (RNN).

II. PREDICTION TECHNIQUES

A. RNN

A Recurrent Neural Network (RNN) is a class of artificial neural network where connections between units form a directed graph along a sequence. This allows it to exhibit dynamic temporal behavior for a time sequence. Unlike feed forward neural networks, RNN can use their internal state (memory) to process sequences of inputs. Recurrent Neural Networks (RNNs) are popular models that have shown great promise in many NLP tasks

Block diagram of RNN:



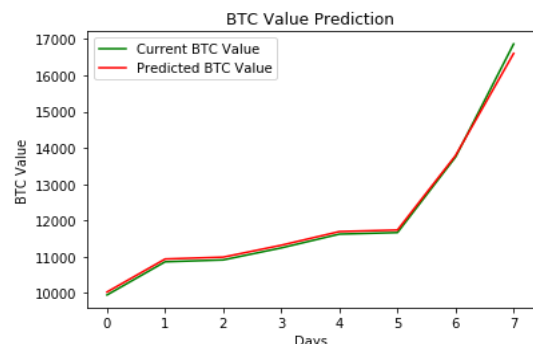
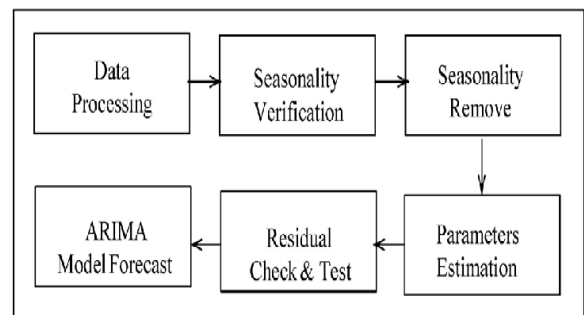
The above diagram shows a RNN being unrolled (or unfolded) into a full network. By unrolling we simply mean that we write out the network for complete sequence.

B. ARIMA

ARIMA is an acronym that stands for Autoregressive Integrated Moving Average. It is a generalization of the simpler Autoregressive Moving Average and adds the notion of integration. This acronym is descriptive, capturing the key aspects of the model itself. Briefly, they are:

- **AR:** *Auto regression.* A model that uses the dependent relationship between an observation and some number of lagged observations.
- **I:** *Integrated.* The use of differencing of raw observations (e.g. subtracting an observation from an observation at the previous time step) in order to make the time series stationary.
- **MA:** *Moving Average.* A model that uses the dependency between an observation and a residual error from a moving average model applied to lagged observations.

BLOCK DIAGRAM OF ARIMA:



III. RESULT AND DISCUSSION

On applying RNN Technique we can observe that actual and predicted price is almost similar. Prediction of Bit coin price with respect to days yield better results.

IV. CONCLUSION

In this we have studied about two time series forecasting model namely ARIMA and RNN model and compared there advantages and disadvantages and found that RNN model is better compared to ARIMA

Bit coin is a successful crypto currency, and it has been extensively studied in fields of economics and computer science. In this study, we analyze the time series of Bit coin price using Recurrent Neural Networks

If you are looking for crypto currencies with a good return on your investment, BTC could potentially be a profitable investment option for you.

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