BITCOIN PREDICTION USING DEEP LEARNING

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Computer Engineering Technology

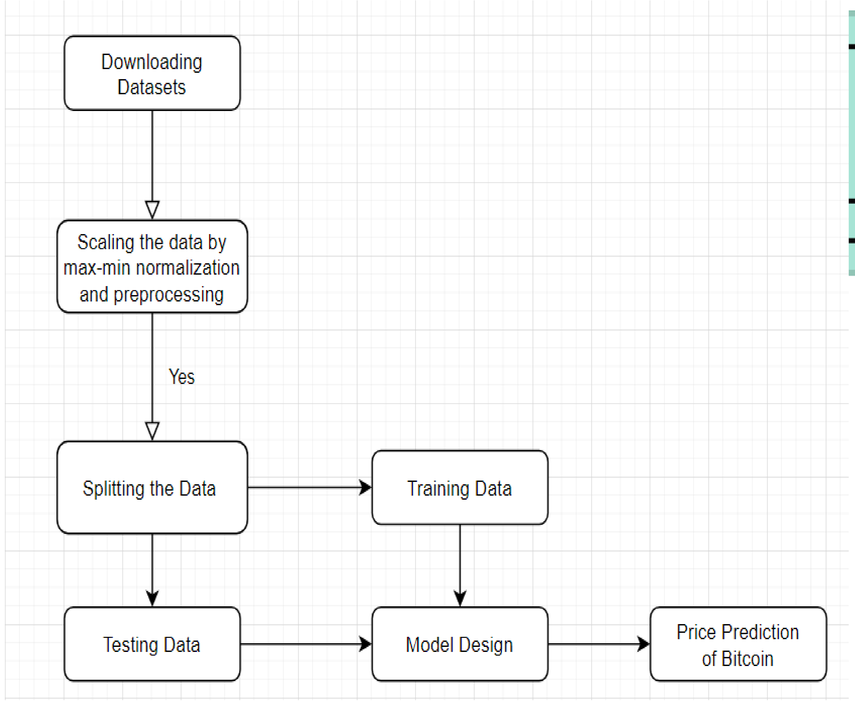
19th Annual City Tech Poster Session

Bitcoin has suddenly gotten a lot of attention from stakeholders and the general public as a result of its recent price increase. Multiple academics have examined numerous elements that impact the price of Bitcoin and the patterns underlying its fluctuations using various analytical and predictive approaches since Bitcoin has been considered as a financial asset and is traded through many cryptocurrency exchanges. Among the various forms of virtual currencies, Bitcoin is widely accepted by various groups such as investors, academics, and dealers. We have developod efficient deep learning-based prediction models that perform machine learning based classification and regression models for predicting Bitcoin price movements and prices in short and medium terms, especially using long short-term memory (LSTM) and gated recurrent unit (GRU), in order to deal with Bitcoin price volatility and achieve high precision. These practical models are of high performance, scoring 65% accuracy for next day forecast and 62%-64% accuracy for seven-nine day forecast.

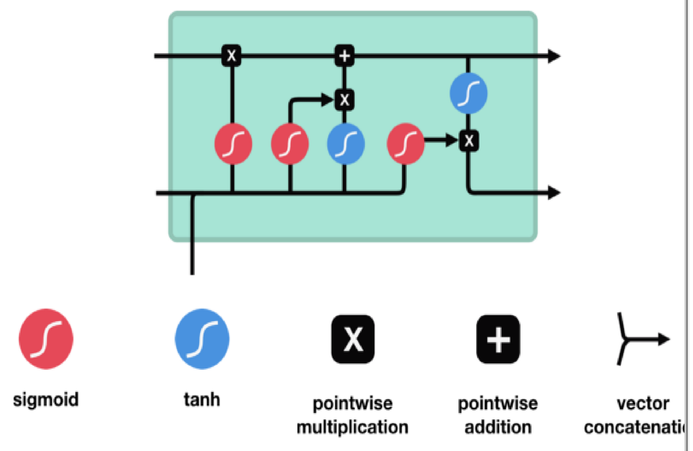
INTRODUCTION

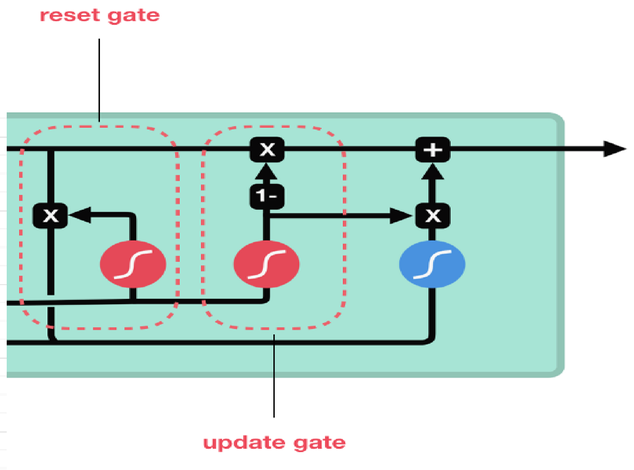
- **We examine data ranging from 1 to 681 cryptocurrencies generated between November 2015 and April 2018.**
- **We demonstrate that basic trading techniques aided by cutting-edge machine learning algorithms surpass traditional benchmarks.**
- **Our findings indicate that nontrivial, but ultimately simple, computational processes can aid in forecasting the short-term evolution of the bitcoin market.**
- **This technique is used in this research to explore the premise that the cryptocurrency market's inefficiencies may be exploited to produce anomalous gains.**
- **We have made use of python based libraries such as: numpy, pandas, matplotlib, pandas data-reader, tensorFlow and scikit-learn.**

BLOCK DIAGRAM



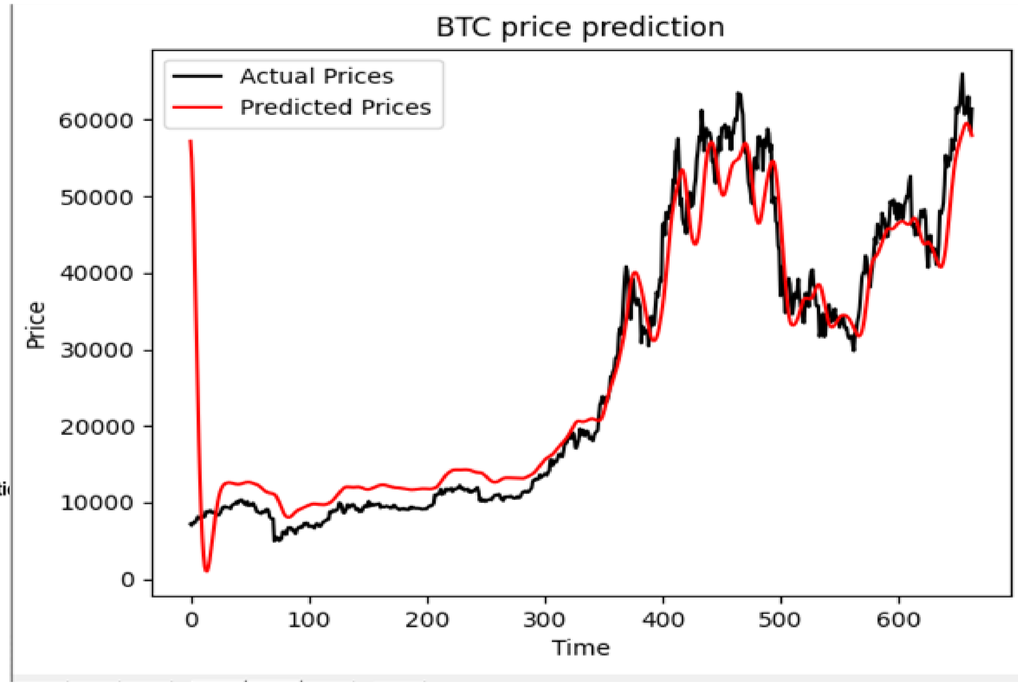
RECURRENT NEURAL NETWORK (RNN)





- **LSTMs are explicitly designed to avoid the long-term dependency problem.**
- **GRU combines the forget and input gates into a single “update gate”; merge the cell state and hidden state**

SIMULATION RESULTS



CONCLUSION

- **Bitcoin is the most popular decentralized way of virtual currency which has a great role in the free market economy**
- **avoids the intermediary of another third party between customers.**
- **The main objective of our study is to forecast the bitcoin price with improved efficiency using deep learning models**
- **We have implemented two deep learning techniques such as LSTM and GRU as prediction models.**

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