

A dark, grayscale background image showing a person's hands interacting with a smartphone. One hand is holding the phone, while the other hand's fingers are touching the screen. The image is slightly blurred and has a high-contrast, artistic feel.

Unveiling the Future:

Forecasting Cryptocurrency Trends

How technology can impact our financial dealings

Meet the Team



Raghav Chadha

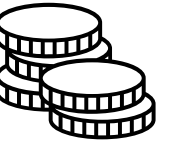


Roshan Raj Singh

About **Crypto** **Currencies**

Unlike traditional currencies, it's not controlled by any central authority like a government or bank. Instead, it operates on a decentralized network called a blockchain, where transactions are recorded publicly and verified by a distributed network of computers.





A **brief history** of Crypto

1998

Wei Dai proposes "B-money," a conceptual framework for anonymous, decentralized digital cash, paving the way for later cryptocurrencies.

2009

The first version of Bitcoin was released. Hal Finney, a cryptographer and early adopter, receives 10 Bitcoins from Satoshi Nakamoto, marking the first-ever cryptocurrency transaction.

2013

The closure of the illegal online marketplace Silk Road, which used Bitcoin for transactions, shows the potential for misuse of cryptocurrencies.

2017

Bitcoin reaches \$20,000, reaching a new all-time high and attracting mainstream attention.

2021

Ethereum introduces a burning mechanism for transaction fees and potentially influences the future supply and value of Ether tokens.

Forecasting Crypto

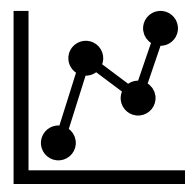
- Cryptocurrencies are notoriously volatile, experiencing frequent and significant price swings.
- Highly susceptible to social media sentiment and hype, which can trigger dramatic price movements based on speculation rather than fundamental factors.
- No inherent value beyond what the market assigns them based on supply, demand, and speculation.

Stock Market Predictions

- Relatively stable and regulated marketplace.
- Relies on analyzing financial statements, earnings reports, and other fundamental data.
- Stocks represent ownership in a company with assets, earnings, and potential future cash flow.

Data Overview

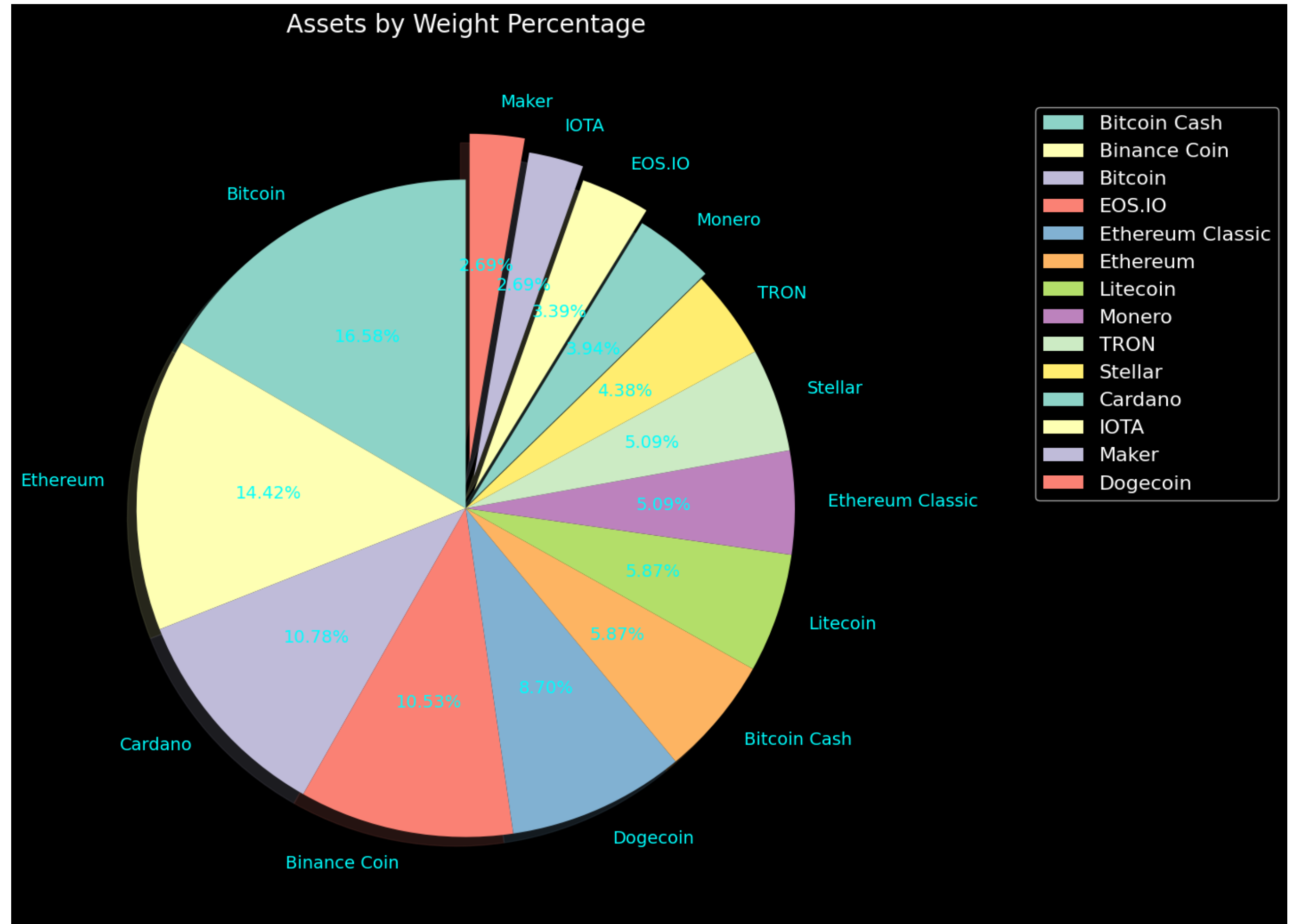
Dealing with minute-by- minute OHLC Data



OHLC DATA	Description
<u>O</u> PEN	Opening price of the time interval (in USD).
<u>H</u> IGH	Highest price reached during time interval (in USD).
<u>L</u> OW	Lowest price reached during time interval (in USD).
<u>C</u> LOSE	Closing price of the time interval (in USD).

EDA

Exploring Assets



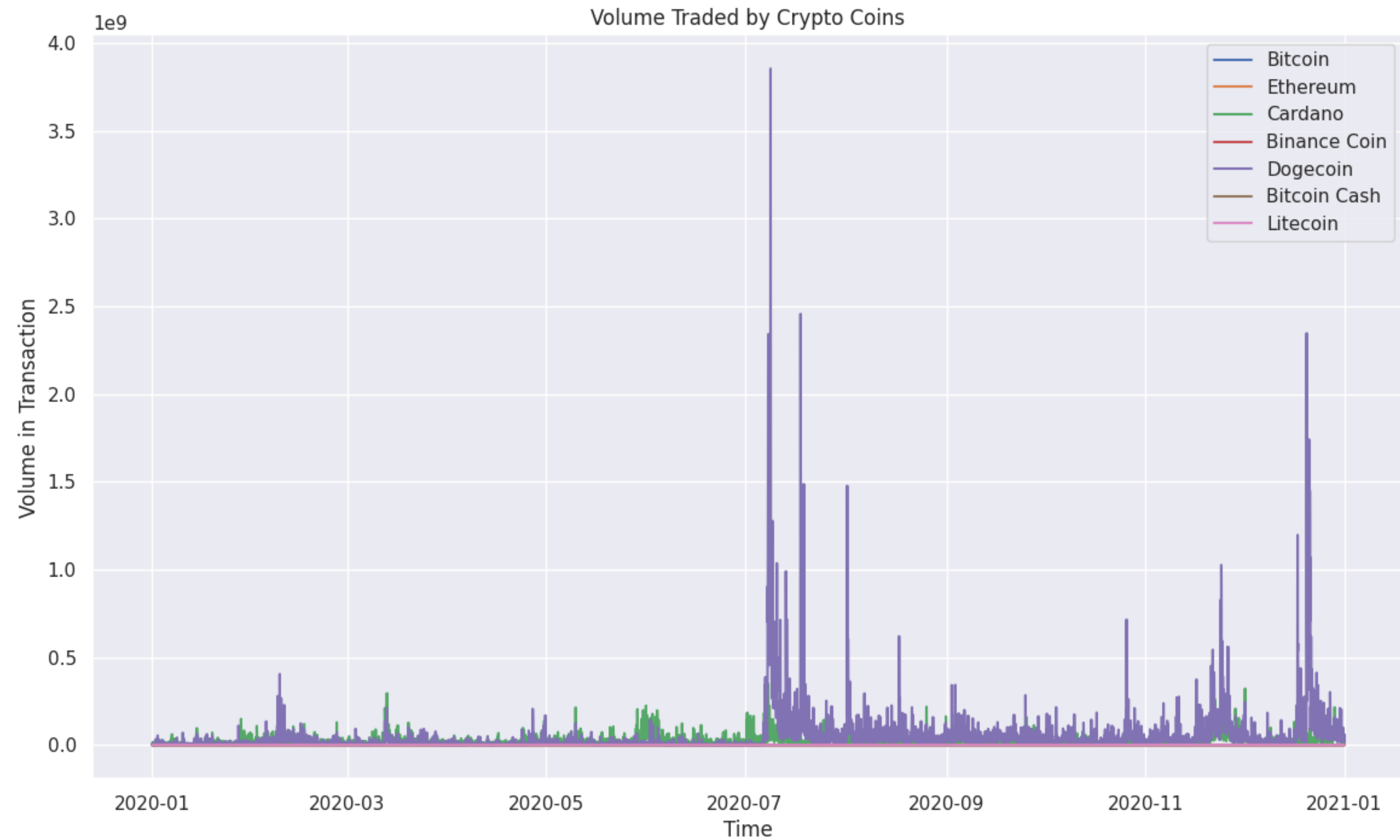
EDA: Close Price over time



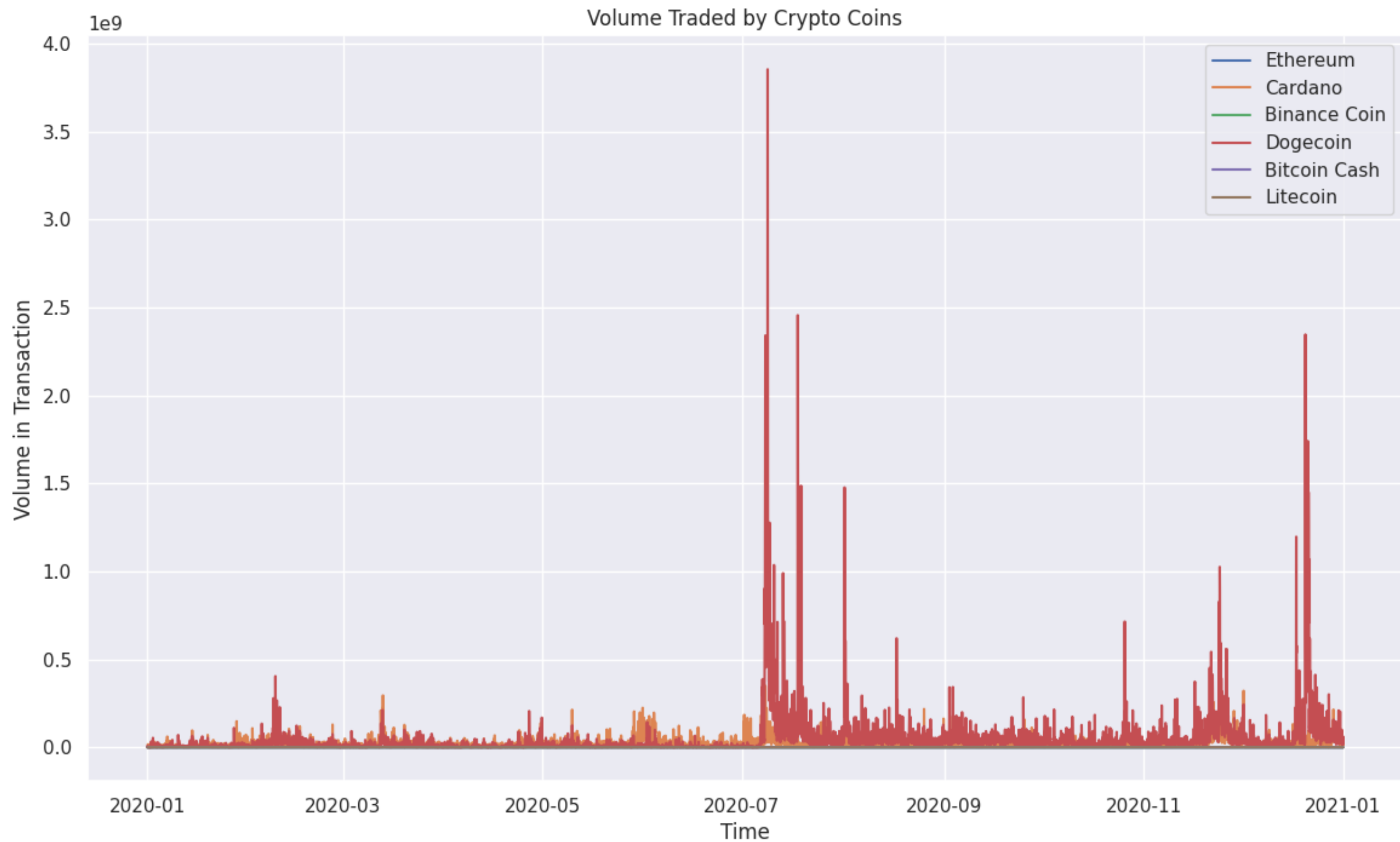
EDA: Close Price over time



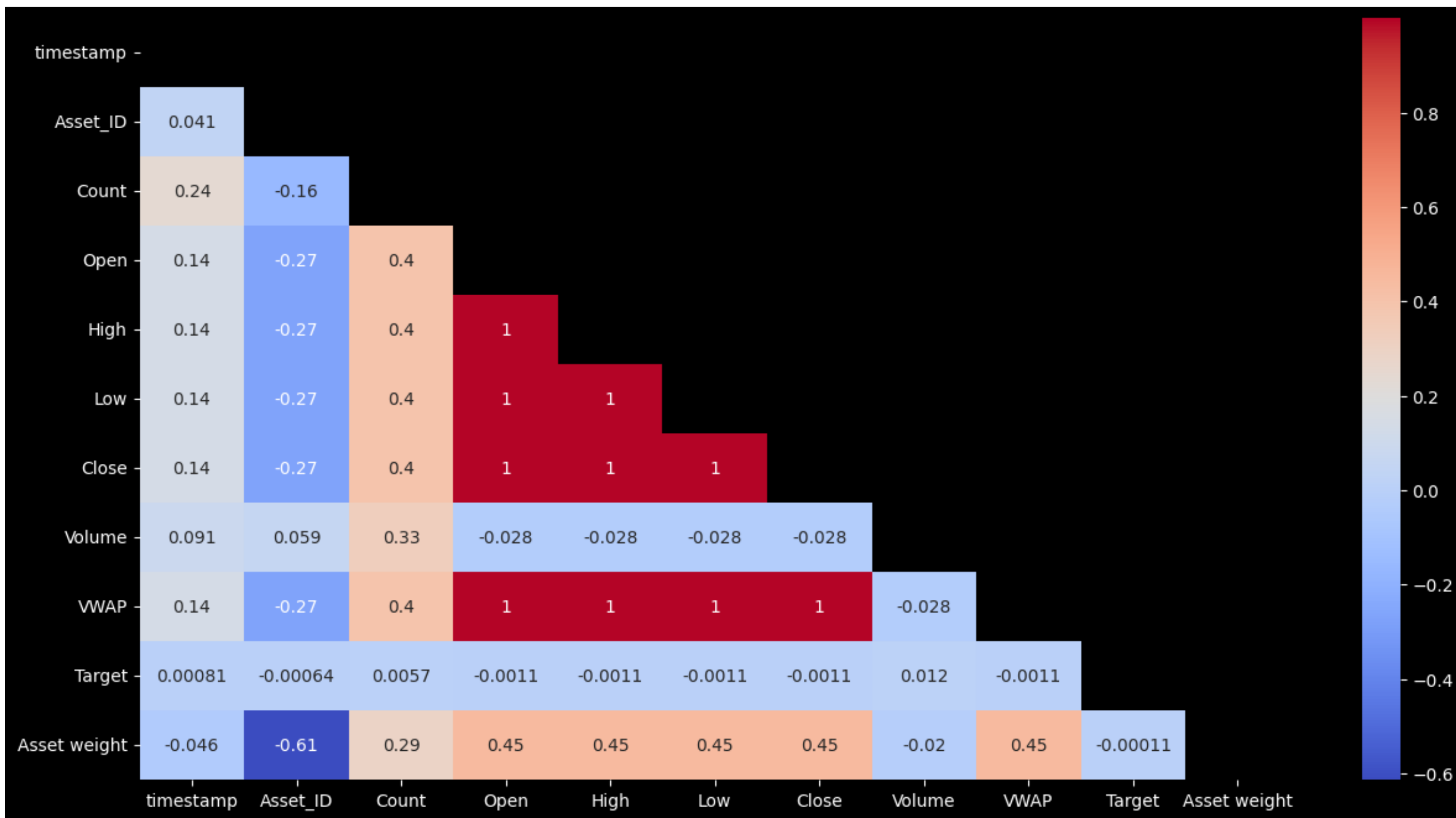
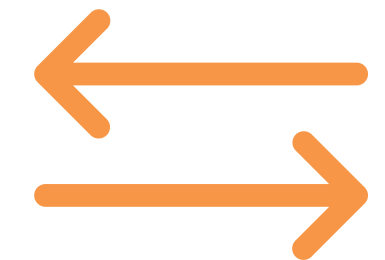
EDA: Volume Traded



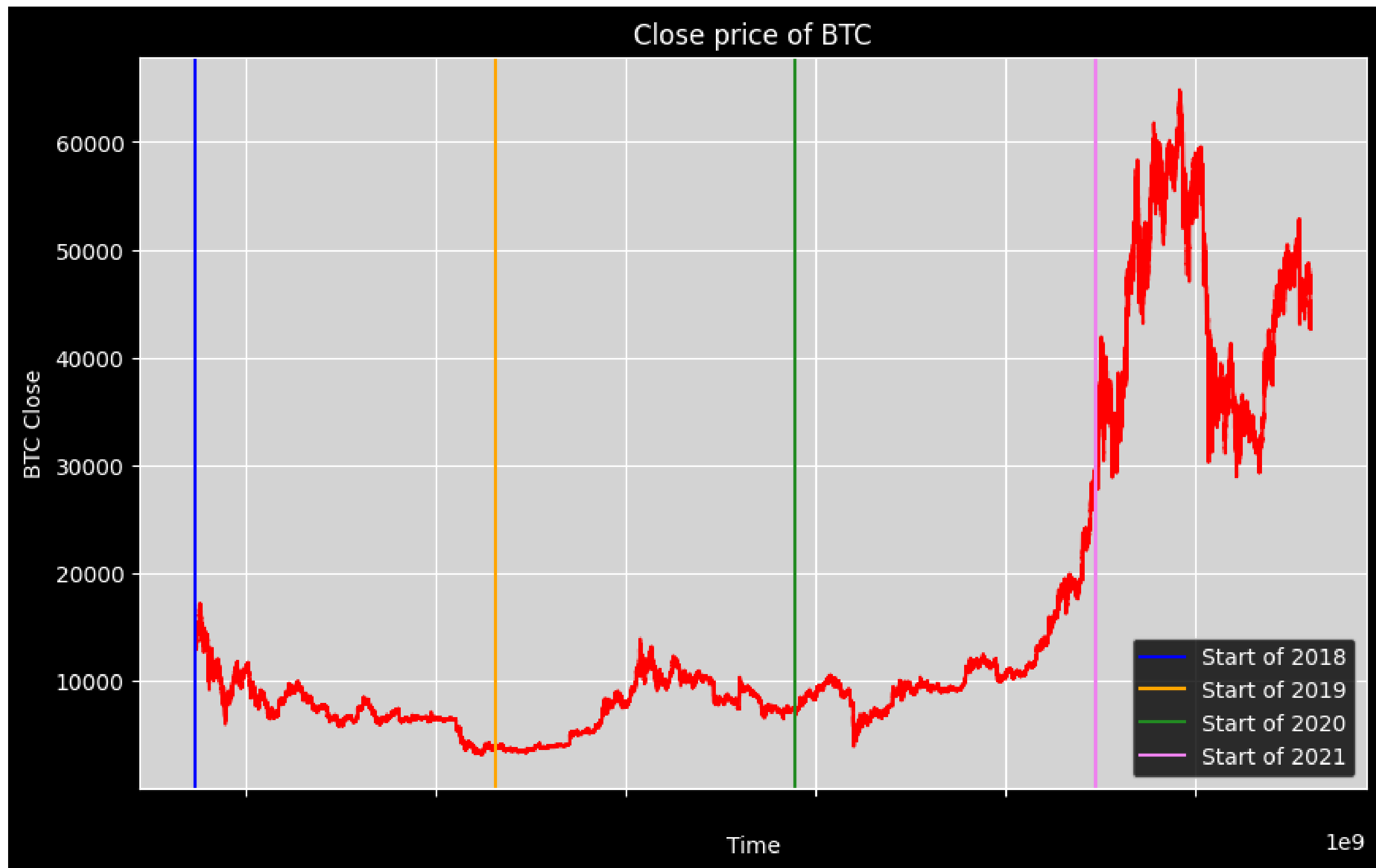
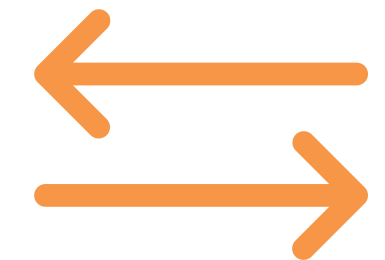
EDA: Volume Traded



EDA: Correlation Matrix



Bitcoin over the years



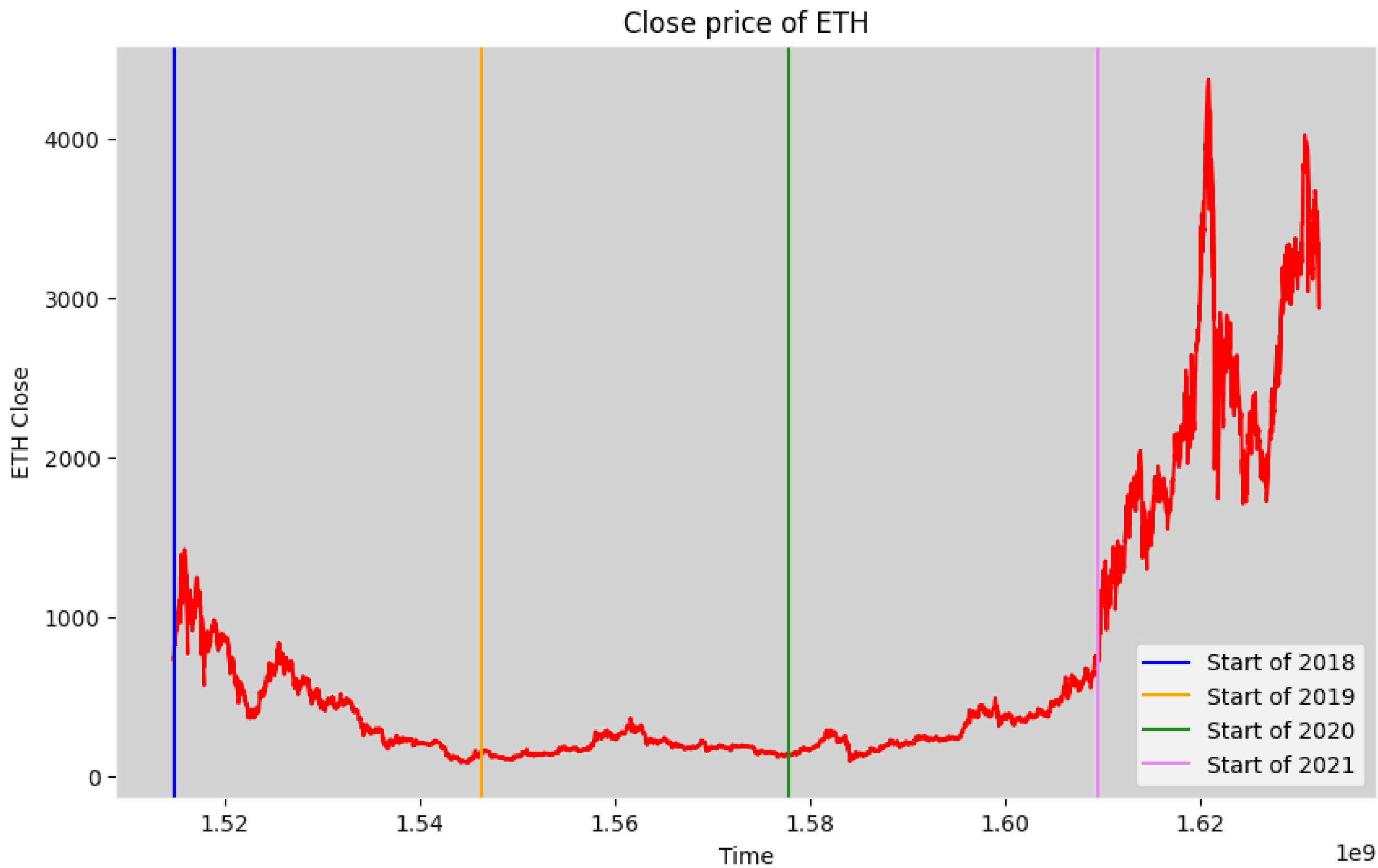
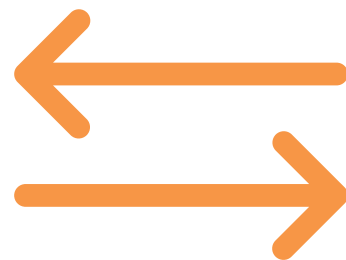
Bitcoin – 1 Nov'20



Single day transaction - BTC



Ethereum over the years



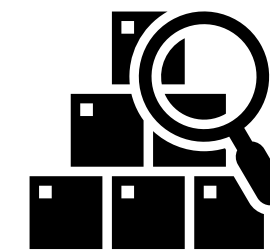
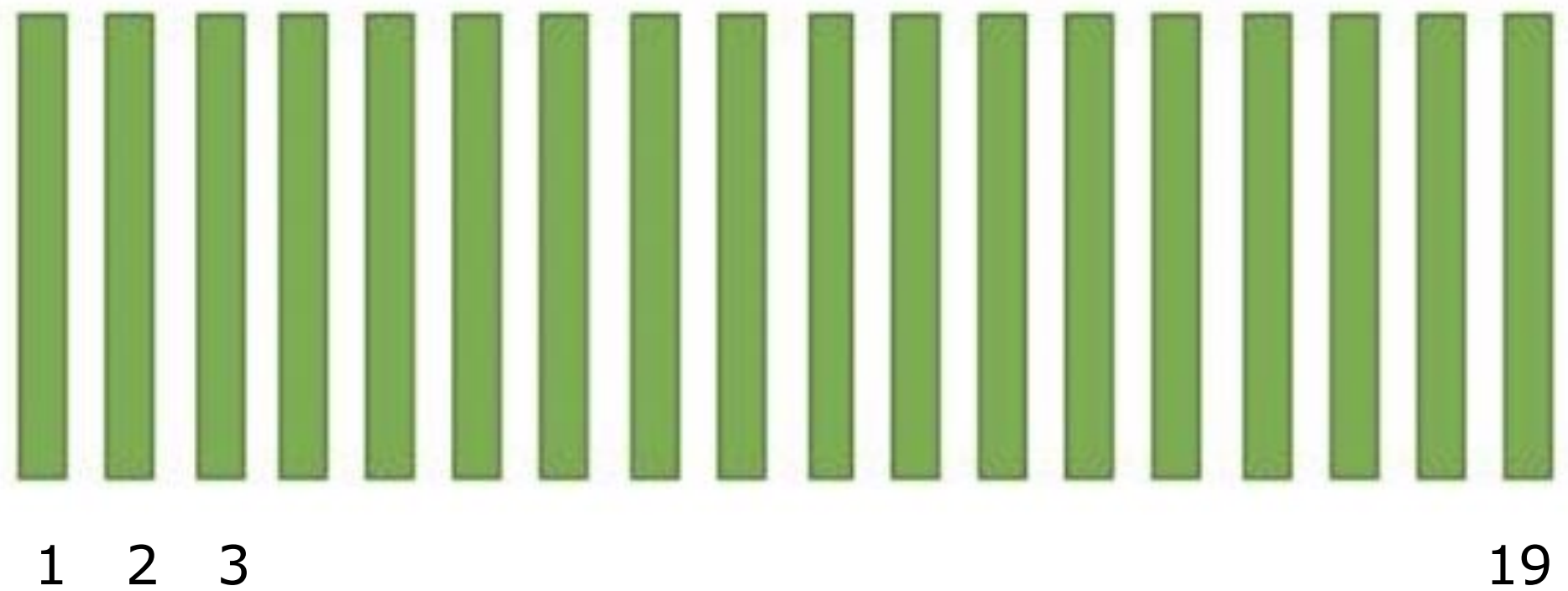
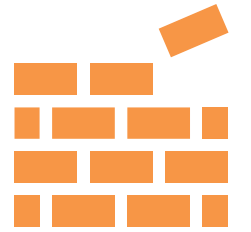
Ethereum – 1 Nov'20



Single day transactions - Ethereum



Time Series Modelling – Rolling Window

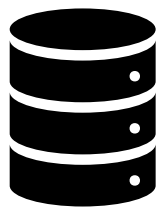


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Predict

SEQUENCE ONE

LSTM Model Summary

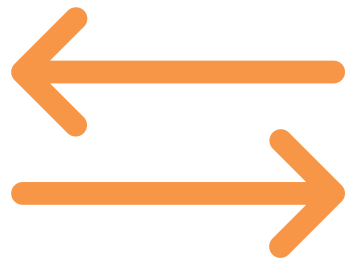


Model: "sequential_1"

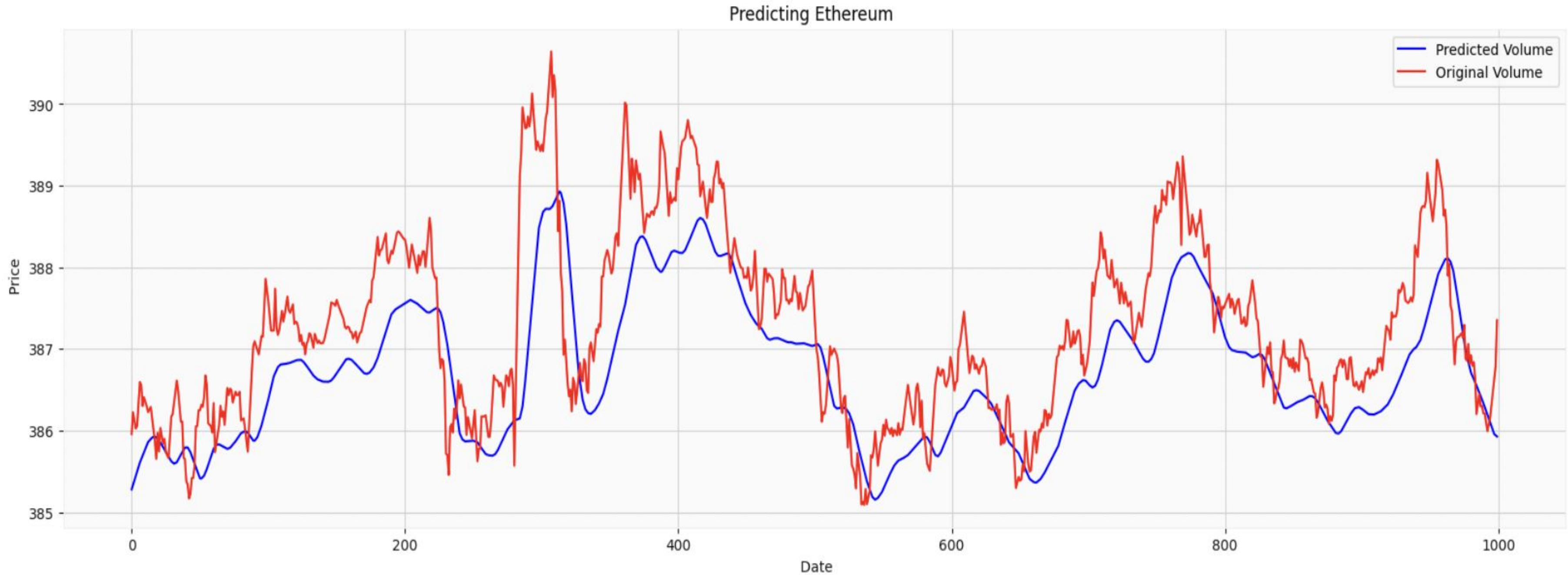
ReLu Activation

Layer (type)	Output Shape	Param #
lstm_4 (LSTM)	(None, 20, 20)	1760
lstm_5 (LSTM)	(None, 20, 15)	2160
lstm_6 (LSTM)	(None, 20, 10)	1040
lstm_7 (LSTM)	(None, 5)	320
dropout_1 (Dropout)	(None, 5)	0
dense_1 (Dense)	(None, 1)	6
Total params: 5,286		
Trainable params: 5,286		
Non-trainable params: 0		

Predicting Ethereum [LSTM]



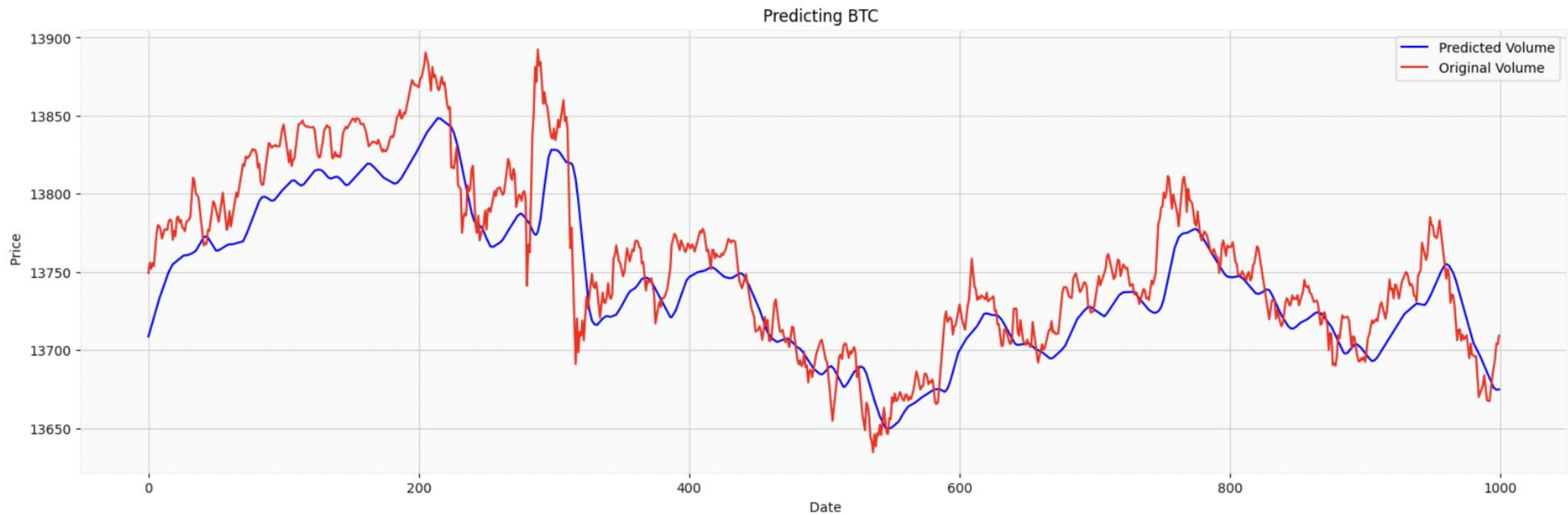
Test RMSE: 0.017533672595895163
Test MAE: 0.017209146662386005



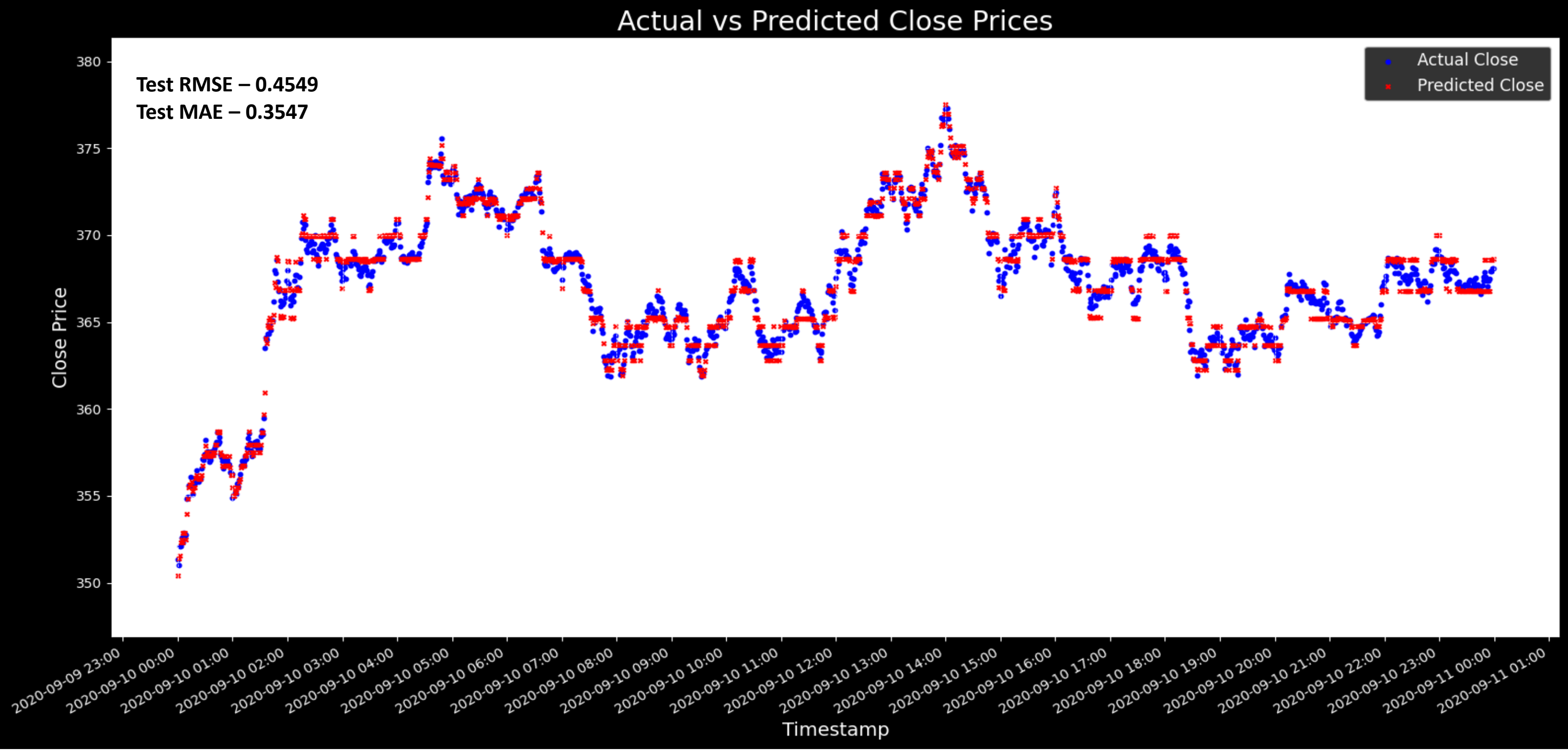
Forecasting BTC [LSTM]



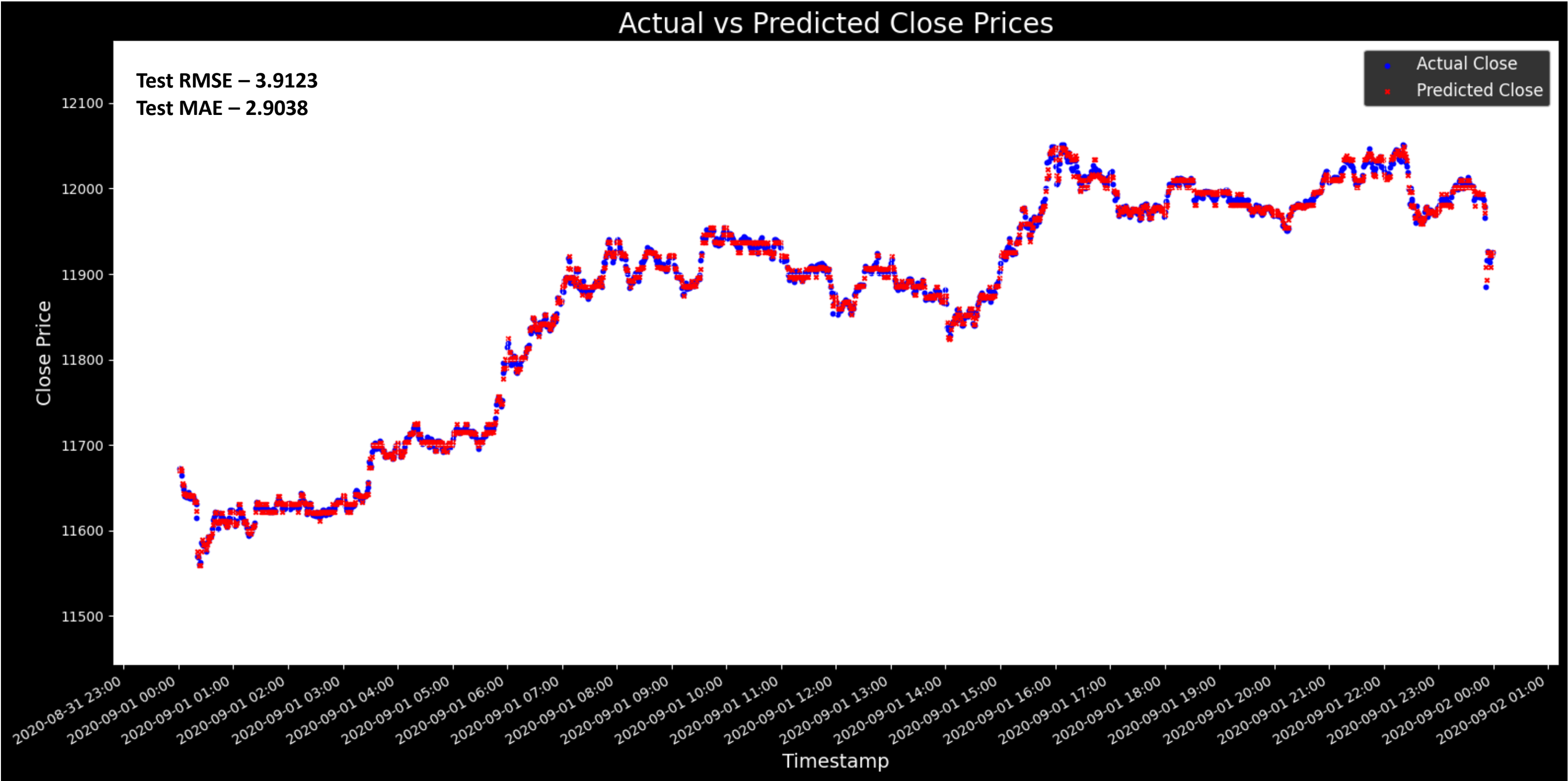
Test RMSE: 0.11635794550794044
Test MAE: 0.11624397372709318



Forecasting ETH [XGBoost]



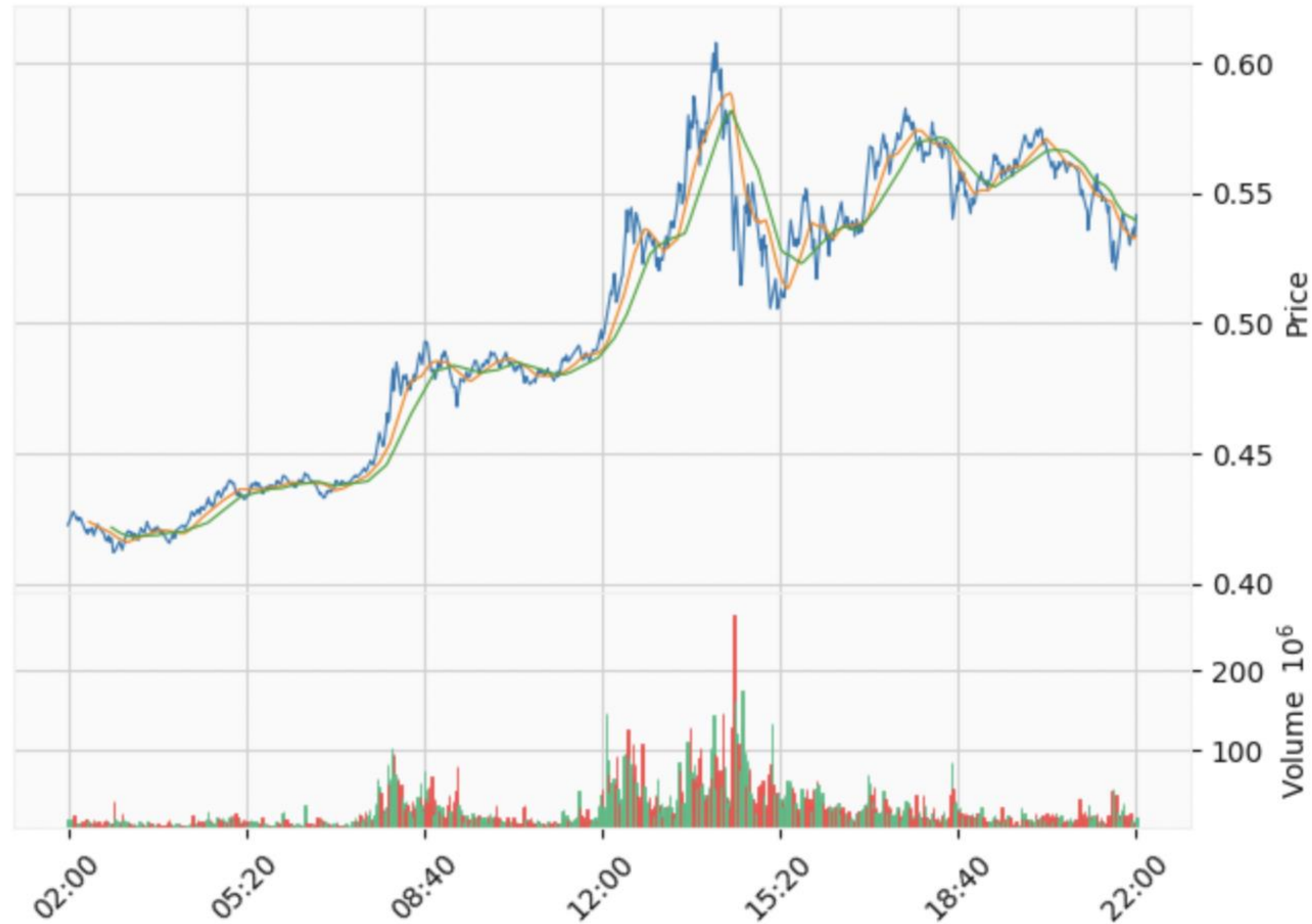
Forecasting BTC [XGBoost]



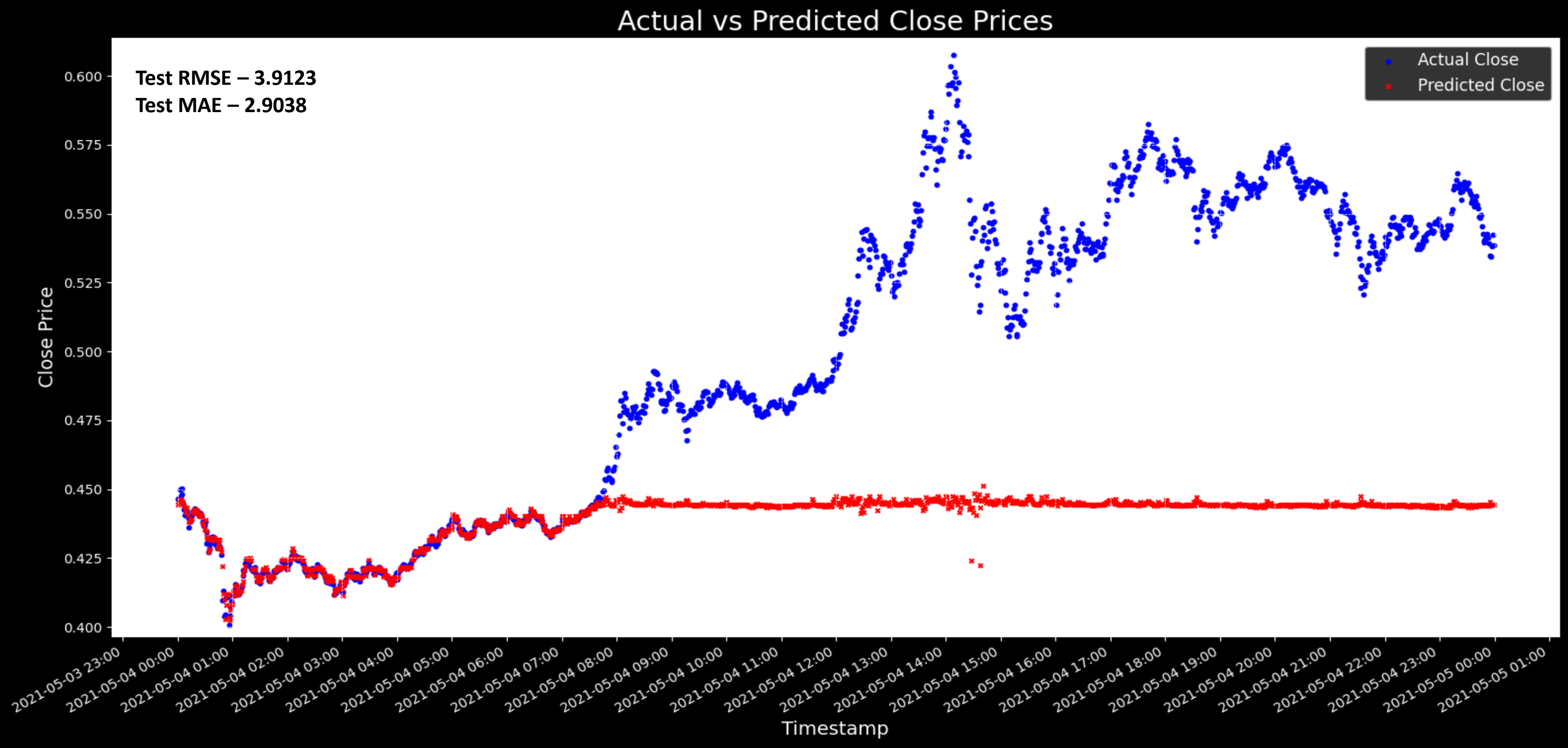
DogeCoin Takeover – 4 May'21



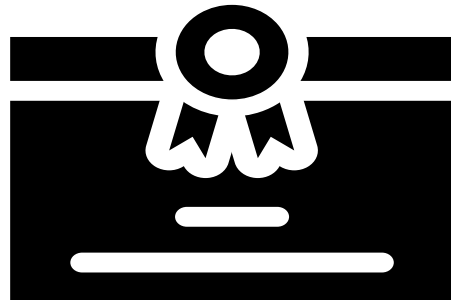
Single day - DogeCoin



Forecasting DOGE



Conclusion



- 01 LSTM's Edge: Much more adaptable in forecasting the unpredictable crypto market by deciphering complex patterns.
- 02 Rolling Predictions: A 60-day lookback for next-day forecasts adapts to crypto's volatility, underscoring the need for flexible strategies.
- 03 Beyond Data: Historical trends fall short in crypto forecasting; unseen external factors demand a broader, adaptable modeling approach.



Do you have
any questions?

Thanks! We hope you learned something new.