Bitcoin Price Forecasting

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Project Problem

Bitcoin is the longest-running and most well-known cryptocurrency, first released as open-source in 2009 by the anonymous Satoshi Nakamoto. Bitcoin serves as a decentralized medium of digital exchange, with transactions verified and recorded in a public distributed ledger (the blockchain) without the need for a trusted record-keeping authority or central intermediary. Transaction blocks contain an SHA-256 cryptographic hash of previous transaction blocks and are thus "chained" together, serving as an immutable record of all transactions that have ever occurred. As with any currency/commodity on the market, bitcoin trading and financial instruments soon followed the public adoption of bitcoin and continue to grow.

Can we predict the price of bitcoin?

Datasets

- Historical Bitcoin Price

- Crypto Fear and Greed Index

Historical Bitcoin Price

- Start Time
- Open Time
- Open Price
- High Price
- Trade Volume

- End Time
- Close Time
- Close Price
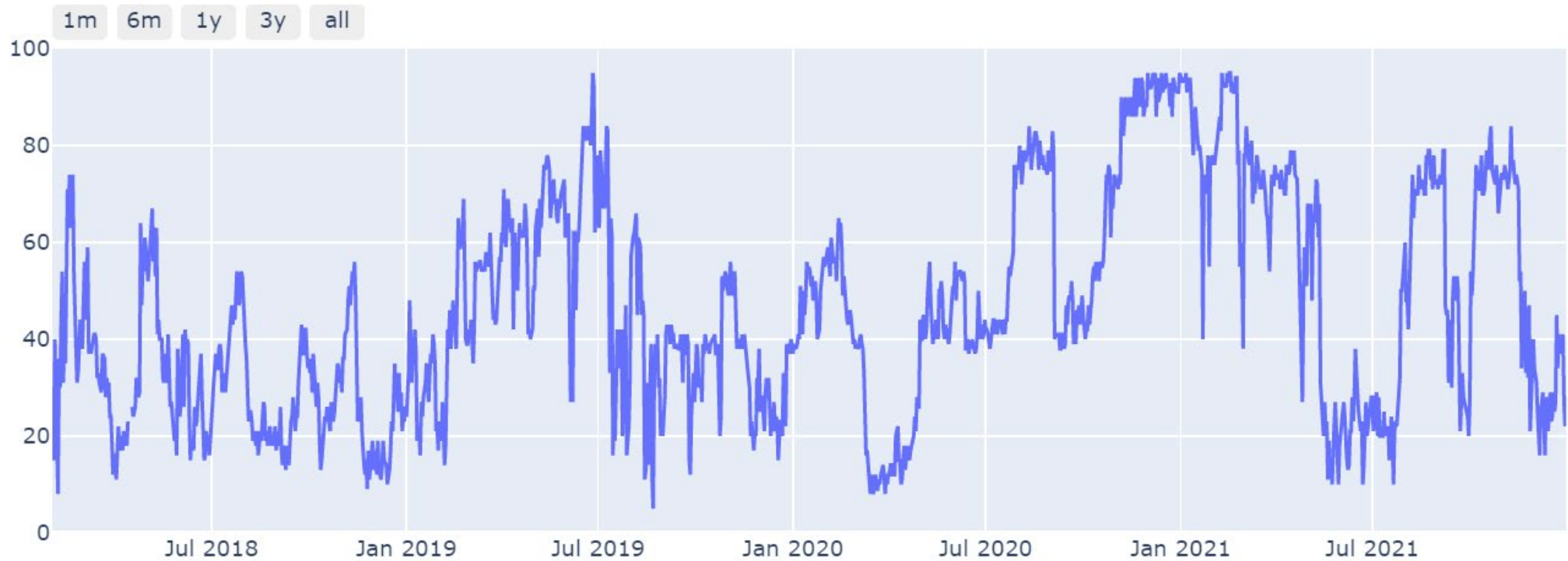- Low Price
- Trade Count

Crypto Fear and Greed Index

- Fear and Greed Value
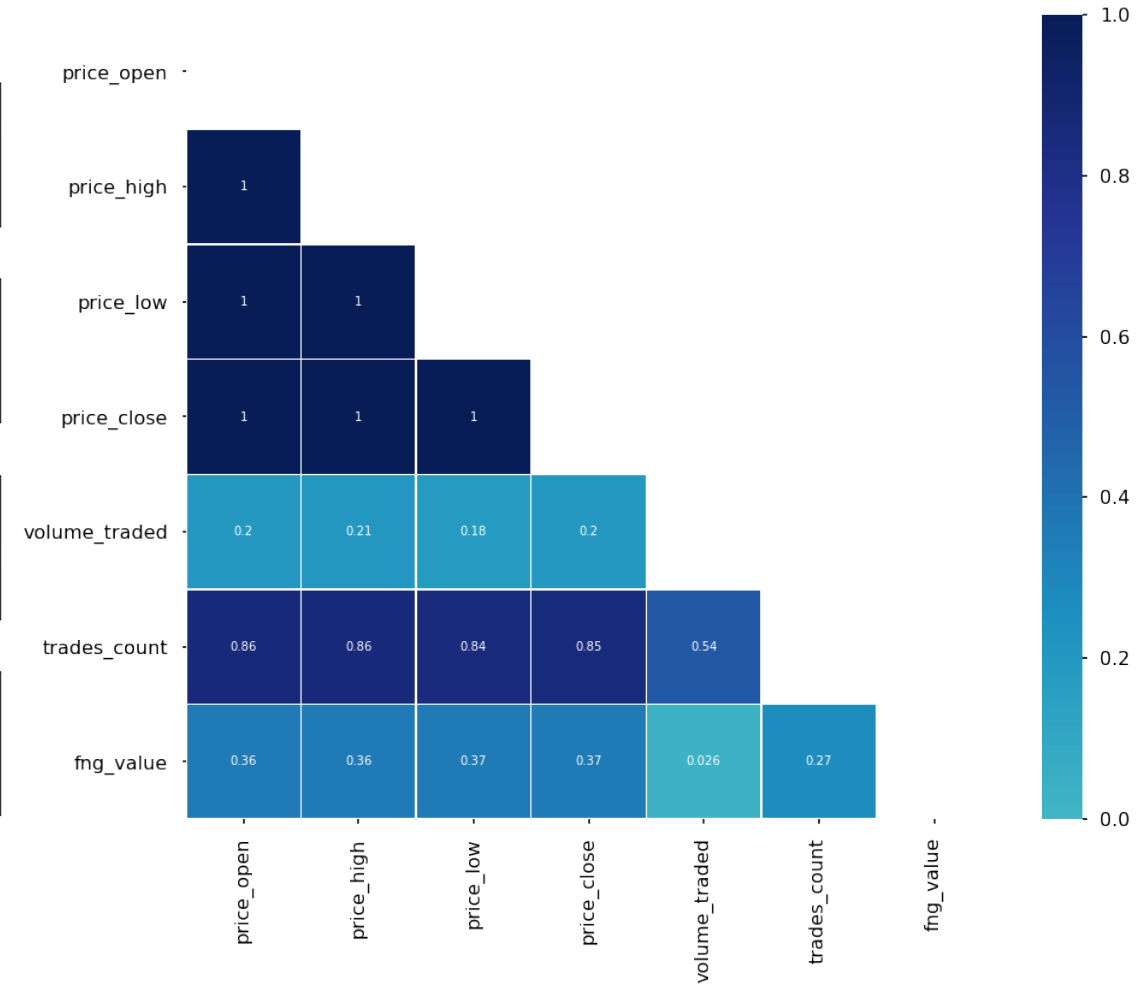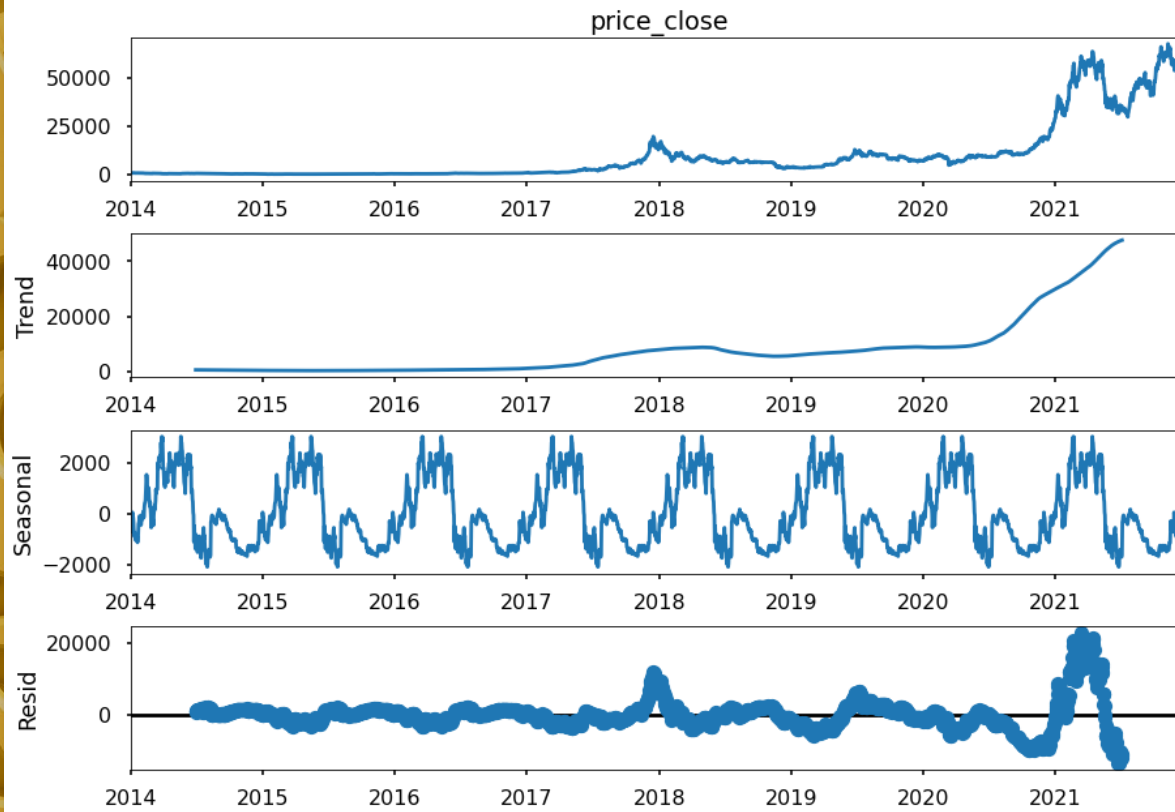- Fear and Greed Classification

Data Observation (Price)

Data Observation (F&G Value)

Data Observation

Time Series Forecasting

- Facebook Prophet

- LSTM

Facebook Prophet

- Univariate
- Multivariate

LSTM

- Univariate
- Multivariate

Result

LSTM Model

Univariate
RMSE: 4524

Multivariate:
RMSE: 1876

Conclusion

The summary of this prediction result is:

- LSTM model can handle the data like bitcoin price better than Prophet model and give the better result.

- RSME of LSME model is ~1900.

- The more factor we included; the better prediction result we will obtain.

Future Work

- Try another type of model for better results.

- Parameters tuning or optimization.

- Add another factor such as Twitter posts from influencers.

- Create our own fear and greed index.

Thank You