

A decorative graphic on the left side of the slide consisting of two overlapping parallelograms. The front one is blue and the back one is a light green. They are positioned diagonally, with the blue one partially covering the green one.

Modeling Ethereum Prices

Cameron Ladd



Goal and Audience

GOAL

- Predictive model
 - One or more days ahead
- Comparison of results to common trading strategies

AUDIENCE

- Investment firms
- Retail investors (you and me!)



What is Ethereum?

- Originally presented by Vitalik Buterin in 2013
- Launched on July 30th, 2015
- Ethereum is an online database that is shared across a BUNCH of different computers
- Each transaction has a unique identity, which creates transparency and security



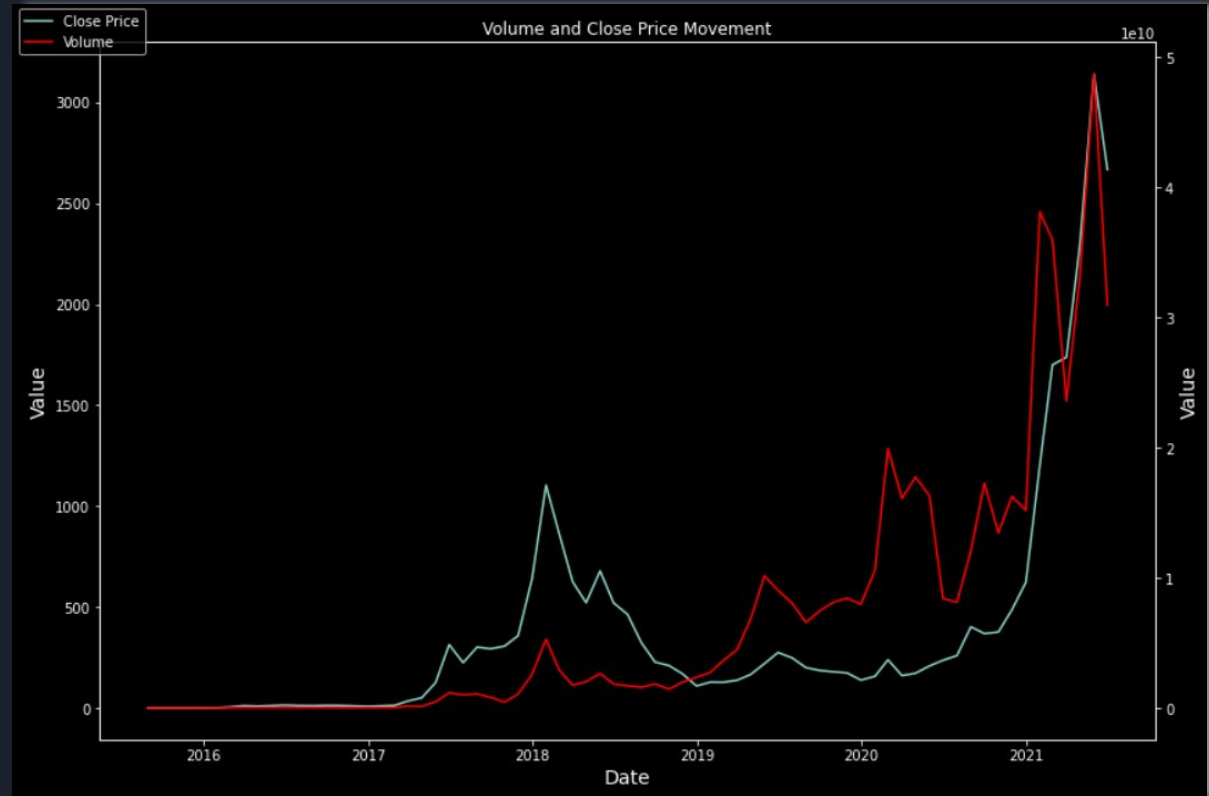
Why Predict Ethereum Prices?

- Extremely promising investment for both retail investors and investment firms
 - New - Less than 6 years old
 - Innovative - An online platform that can be used for multiple economic purposes
 - Currently low adoption, which presents the opportunity for massive upside

Data Source and Features

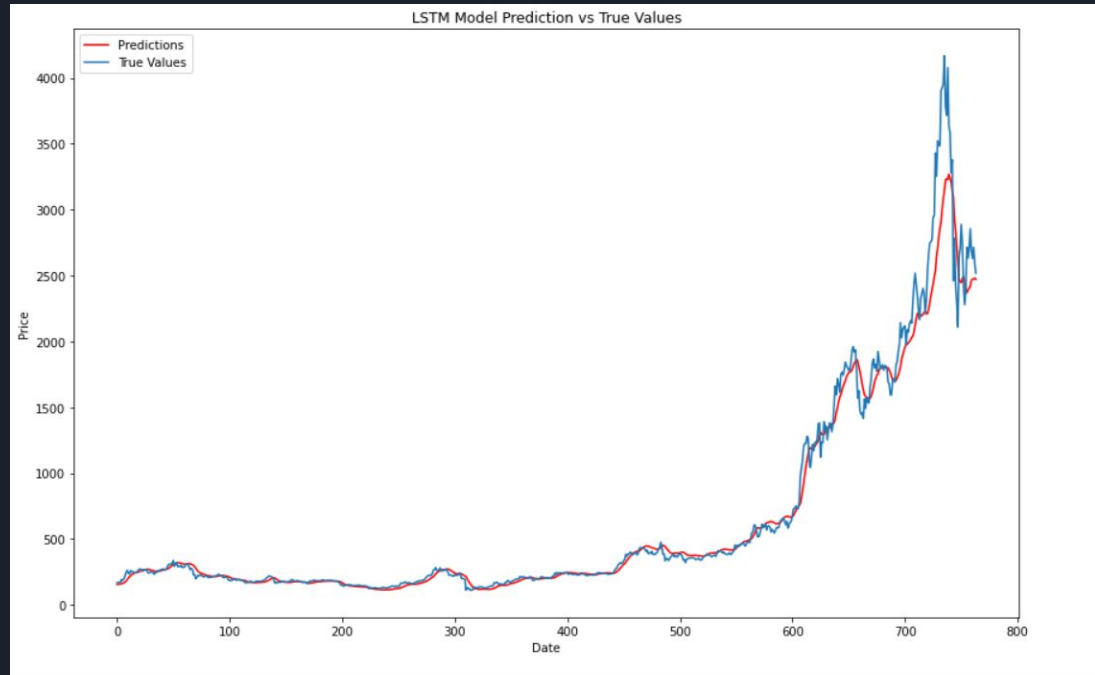
CoinMarketCap.com

- Close Price
- Volume
- 2015/08 - 2021/06



Model Evaluation

<u>Model</u>	<u>RMSE Value</u>
Random Walk	493.49
Auto - ARIMA	1053.25
Prophet (No exogenous)	506.81
Prophet (Exogenous)	277.92
LSTM	135.55
BEST MODEL	LSTM



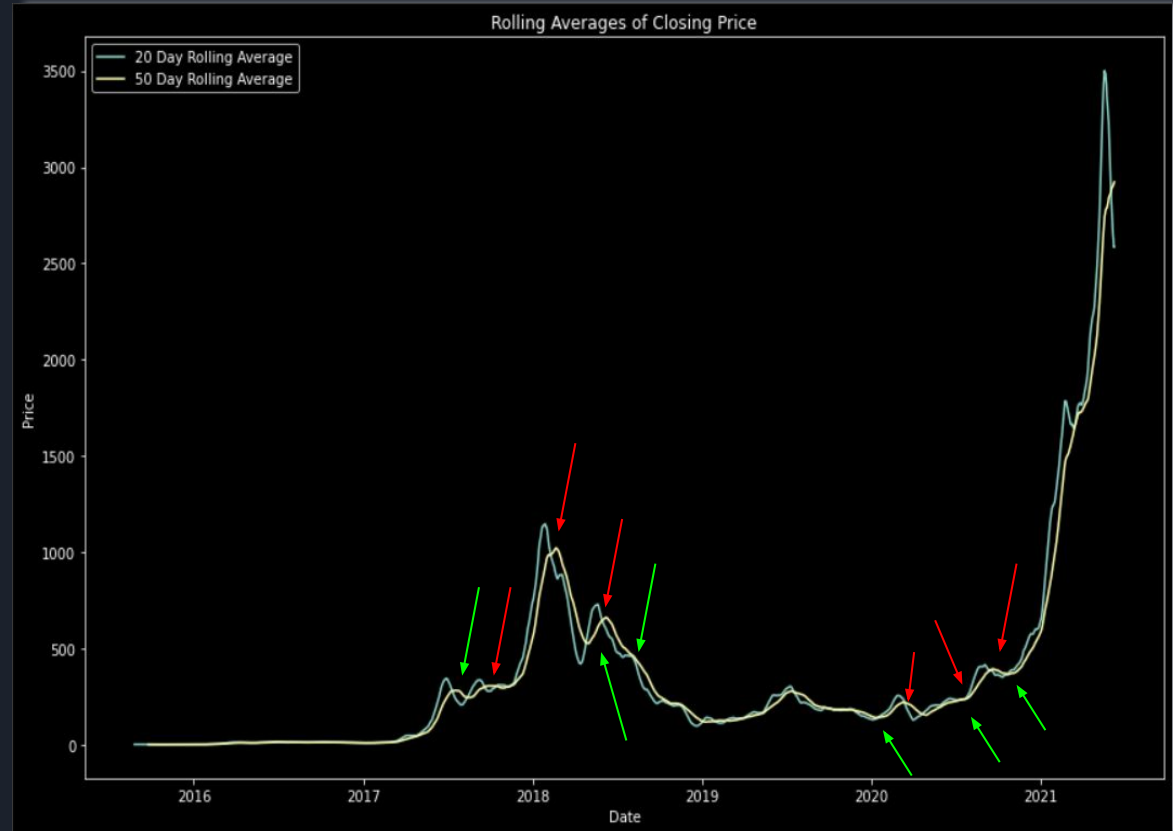
Trading Strategies for Comparison

Simple Moving Average Strategy

- Use intersections
- Slow Period
- Fast Period

Buy-and-Hold

- Buy and never sell
- HODL





Profit Earned from each Strategy

Initial Investment: \$100,000

<u>Strategy</u>	<u>Profit</u>
LSTM	\$173,357.79
SMA	\$828,790.12
Buy and Hold (HODL)	\$853,250.79



Why did LSTM perform so much worse?

- LSTM models are meant to detect patterns over time
- Ethereum prices are very volatile
 - No patterns!!
- Ethereum prices are dependent on many different things
 - Hard to identify
 - Hard to quantify some



Conclusion

HOLD!!!

Further Ideas/Plans

- More tailored trading strategy for LSTM
- Adding many more exogenous variables to the LSTM model could improve performance



Thank you!

Contact Info

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