JEREMIAH TORIBIO

JUNIOR DATA SCIENTIST

5 OCTOBER 2023
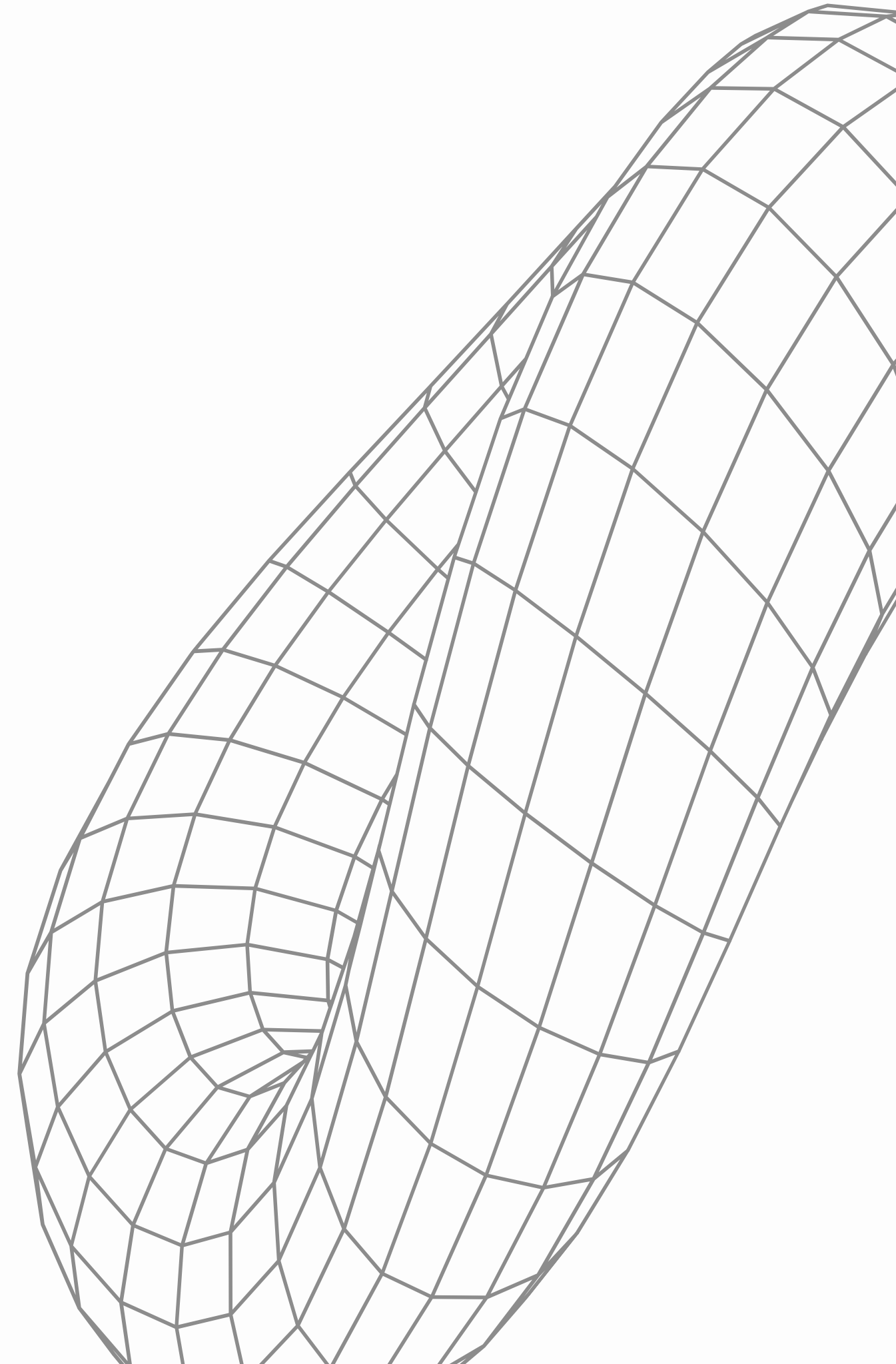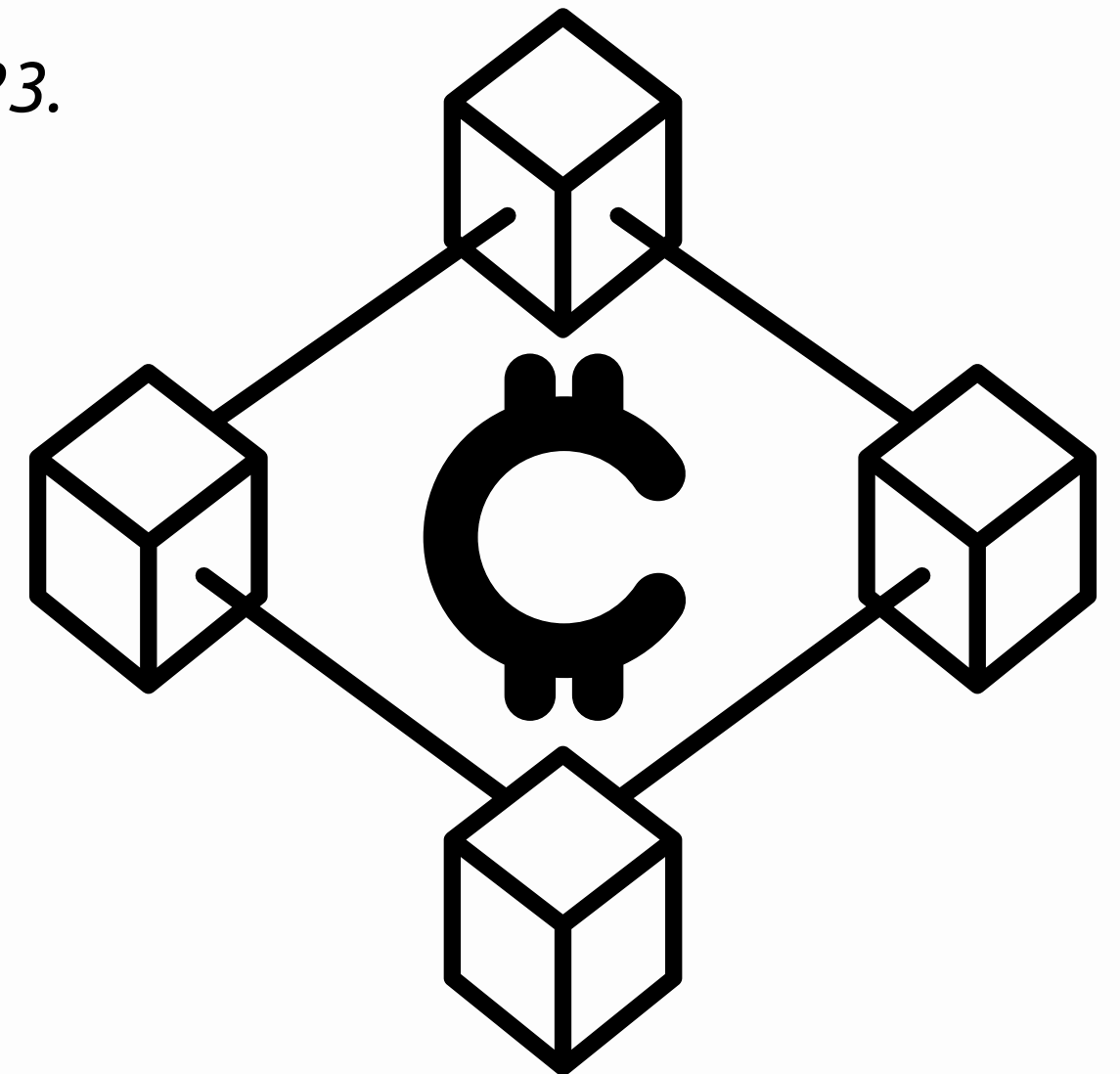
ETHY

PROPHET

(IT'S NOT THAT EASY)

AGENDA

WHAT IS ETHEREUM?

CRYPTOCURRENCY

A cryptocurrency is a digital or virtual currency secured by cryptography and that is based on a network that is distributed across a large number of computers

- Investopedia, 2023.

- Went live in 2015
- Founded by Vitalik Buterin
- Decentralization philosophically driven
- Advanced cryptography & smart contracts

EXECUTIVE SUMMARY

GOAL

Predict the price of Ethereum 4 hours ahead using concurrent data.

FINDINGS

- The larger the amount of historical data used the more inaccurate, due to volatility

- Tuesday would be the worst day to buy (-0.4%)

- 4AM (UTC), best time to buy (+0.8%)

BIG IDEA

Utilizing historical Ethereum prices, create a model using the Prophet algorithm that will be accurate enough to provide insight on upcoming prices on a micro-scale.
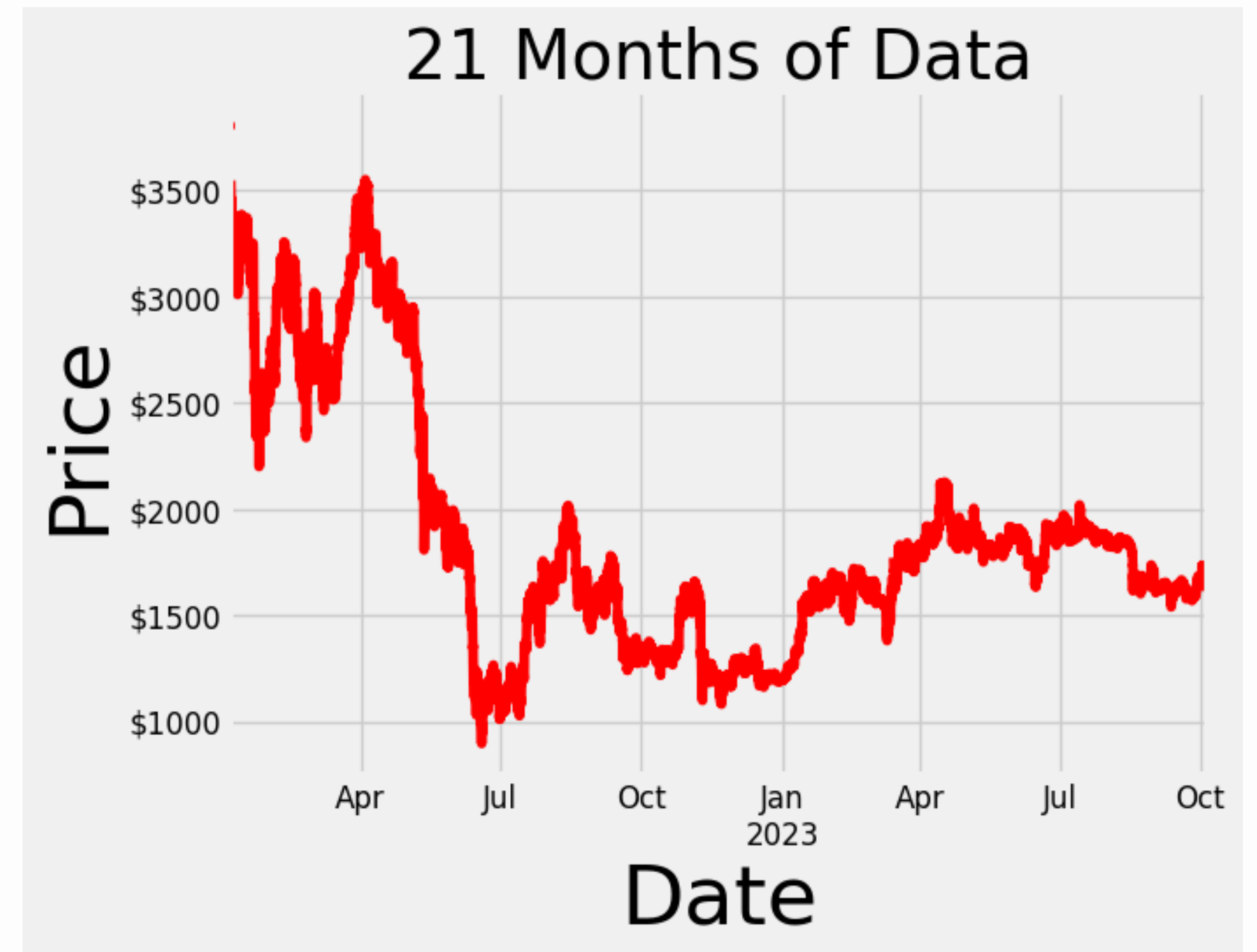
NEXT STEPS

- Cross validate to improve model accuracy

- Try on different time frames -- ex. 1 day, only weekdays
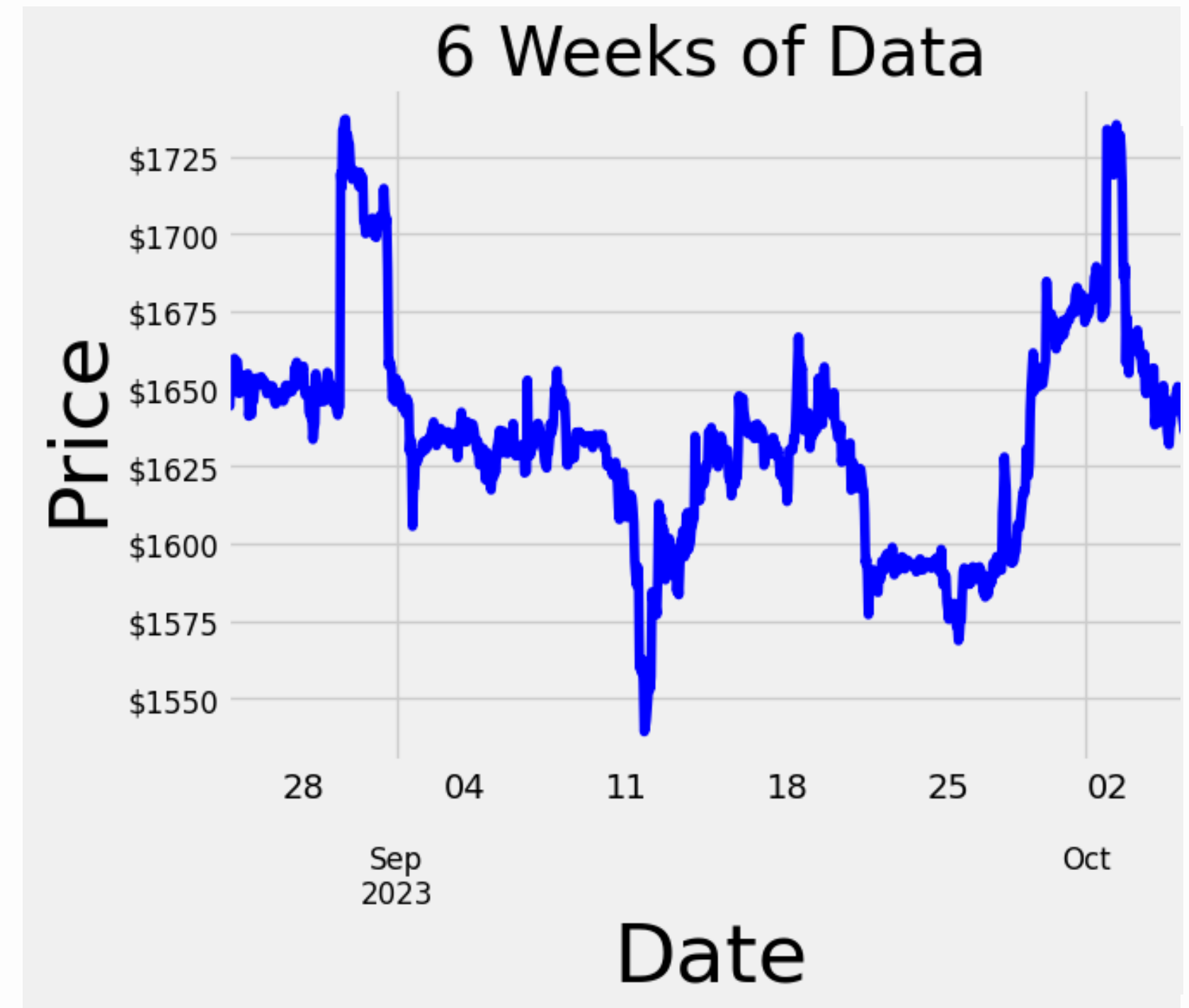
ACQUIRE

Acquired from Yahoo Finance

- Initially used 21 Months of Data

- Price ranges from $3500 to $900 within 21 months

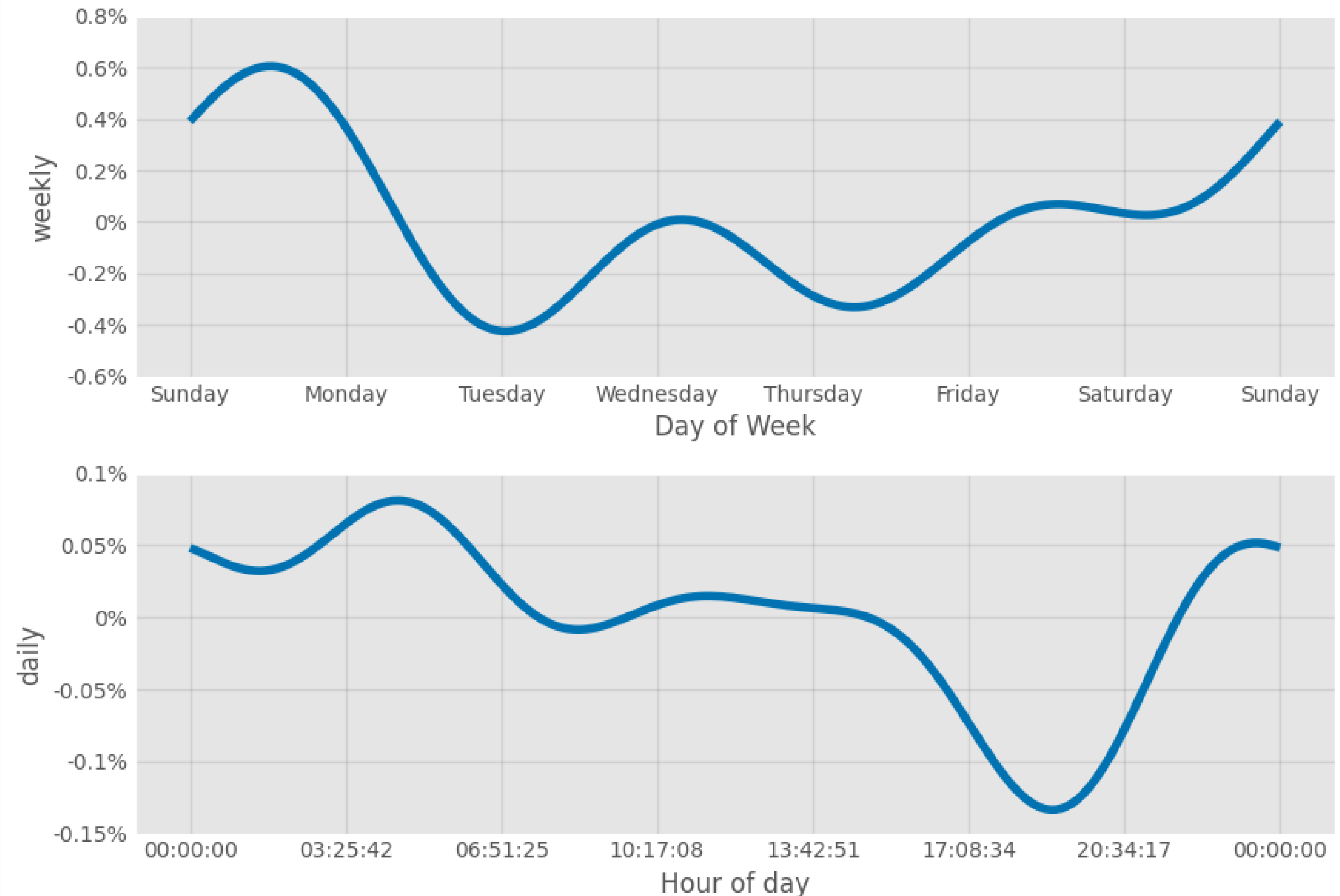- Volatility for predicting on sub-daily data was too high

ACQUIRE

Acquired from Yahoo Finance

- Switched to 3 Months of Data

- Price ranges from $1725 to $1500 within 6 weeks

- Much more concise for the model to adapt

TRENDS

- Daily change trend - best day to buy would be Tuesday

- Best time to sell is 4am (UTC)

- Much more concise for the model to adapt

MODEL RESULTS

Best model:

Rounded Mean Square Error:

28.7

Mean Absolute Percentage Error:
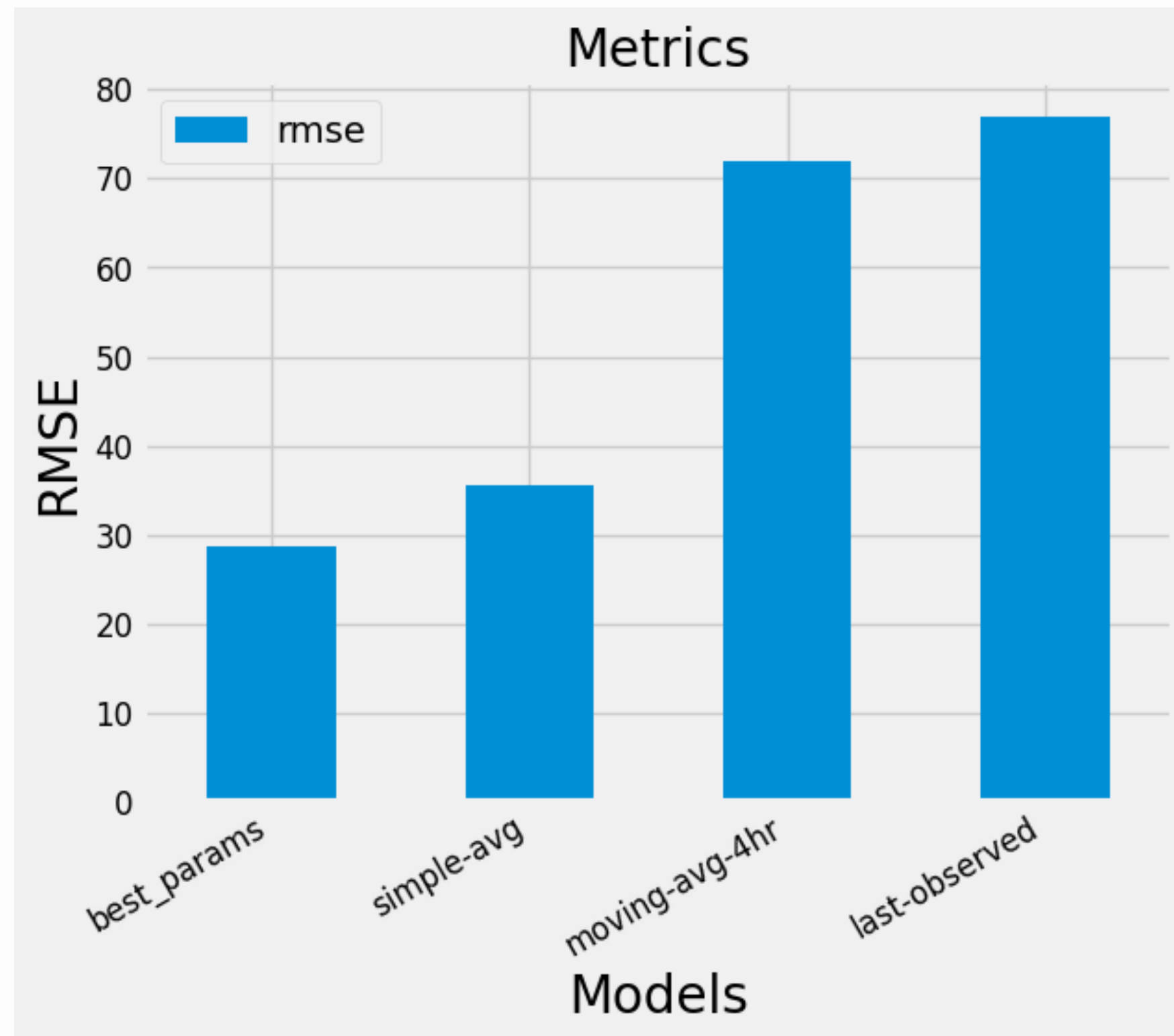
1.22%

Best baseline: *<u>Simple Average</u>*

Rounded Mean Square Error:

35.5

Mean Absolute Percentage Error:

2.13%

Beats baseline by: +18.2% (**6.8** *RMSE*)

As of October 5, 2023 11:32

Best params found using ParameterGrid

CONCLUSION & NEXT STEPS

- Large amounts of Ethereum data for sub-daily data is too volatile

- Trend data can be helpful for action

- Model > best baseline (simple average) by **18.2%**

- Requires date & split tuning for best results

- Cross validate to improve model accuracy

- Use different time frames
  - ex. 1 day / only weekdays

- Automatically find best time frame to use (this would likely be relative to range of close)

THANKS!

CONTACT ME

E-mail   jeremiahtoribiotx@gmail.com

Github   https://github.com/jeremiah-toribio

Project Repo https://github.com/jeremiah-toribio/ethy-prophet

Telegram   https://t.me/jertoribio