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CIS400 Project

Bitcoin Tweets Sentiment Analysis & Correlation Analysis

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Significance

- ▶ Popularity of Cryptocurrencies
- ▶ Attributes that influence cryptocurrencies
- ▶ Price Prediction

Overview

- ▶ Data collection
 - ▶ Getting tweets related to cryptocurrencies (preferring bitcoin)
 - ▶ Getting price history of several cryptocurrencies including bitcoin, ethereum, ripple, monero, etc.
- ▶ Sentiment analysis
 - ▶ Analyze the sentiment of bitcoin tweets
- ▶ Correlation analysis
 - ▶ Analyze the correlation of price fluctuation between different kinds of digital currencies
 - ▶ Analyze the correlation between sentiments and price fluctuation of bitcoin

Data Collection

► Sentimental tweets

Keywords: Bitcoin, Cryptocurrencies, etc.

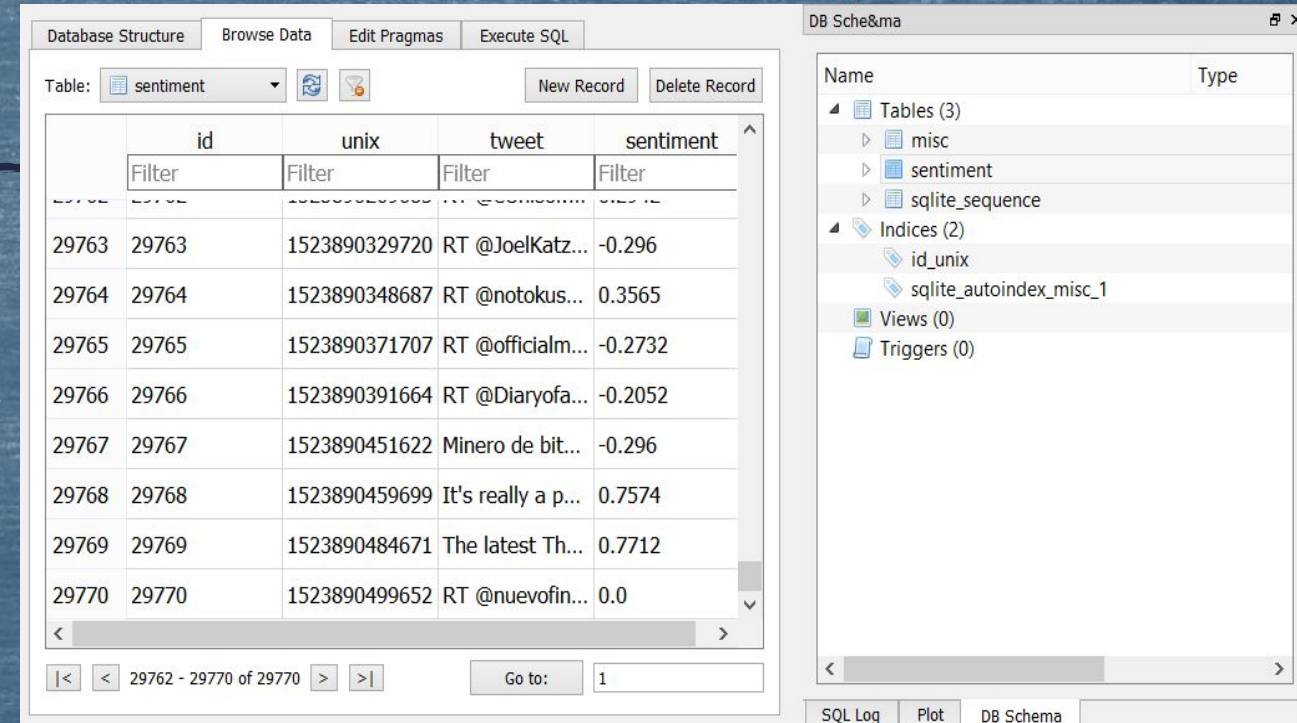
Tools: Python3, Tweepy

Database: Sqlite3

► Price History

Website: <https://poloniex.com/>

Tools: Poloniex API

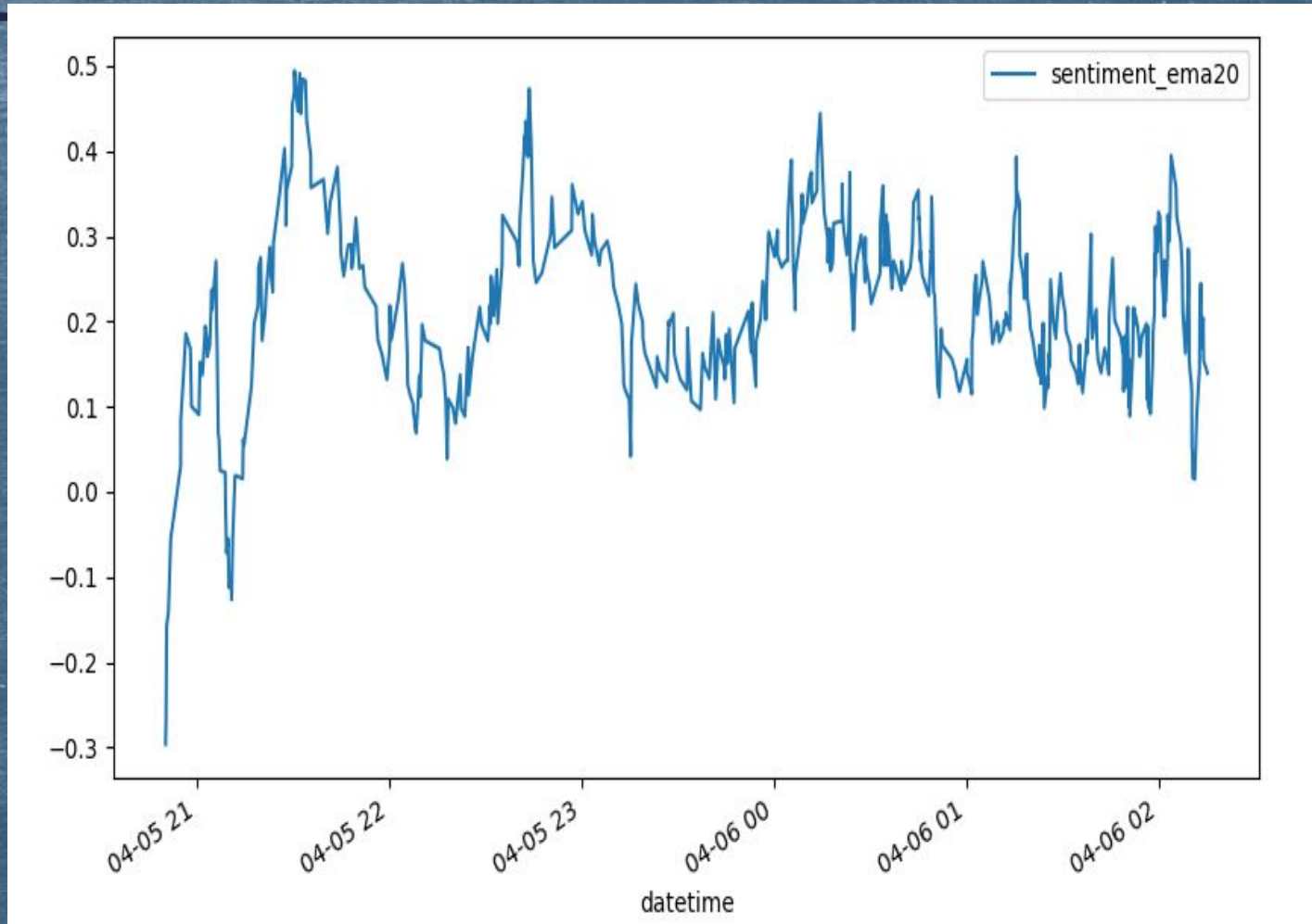


POLONIEX

Sentiment Analysis

Tool:

- ▶ Textblob
- ▶ VaderSentiment

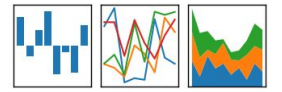


Correlation Analysis



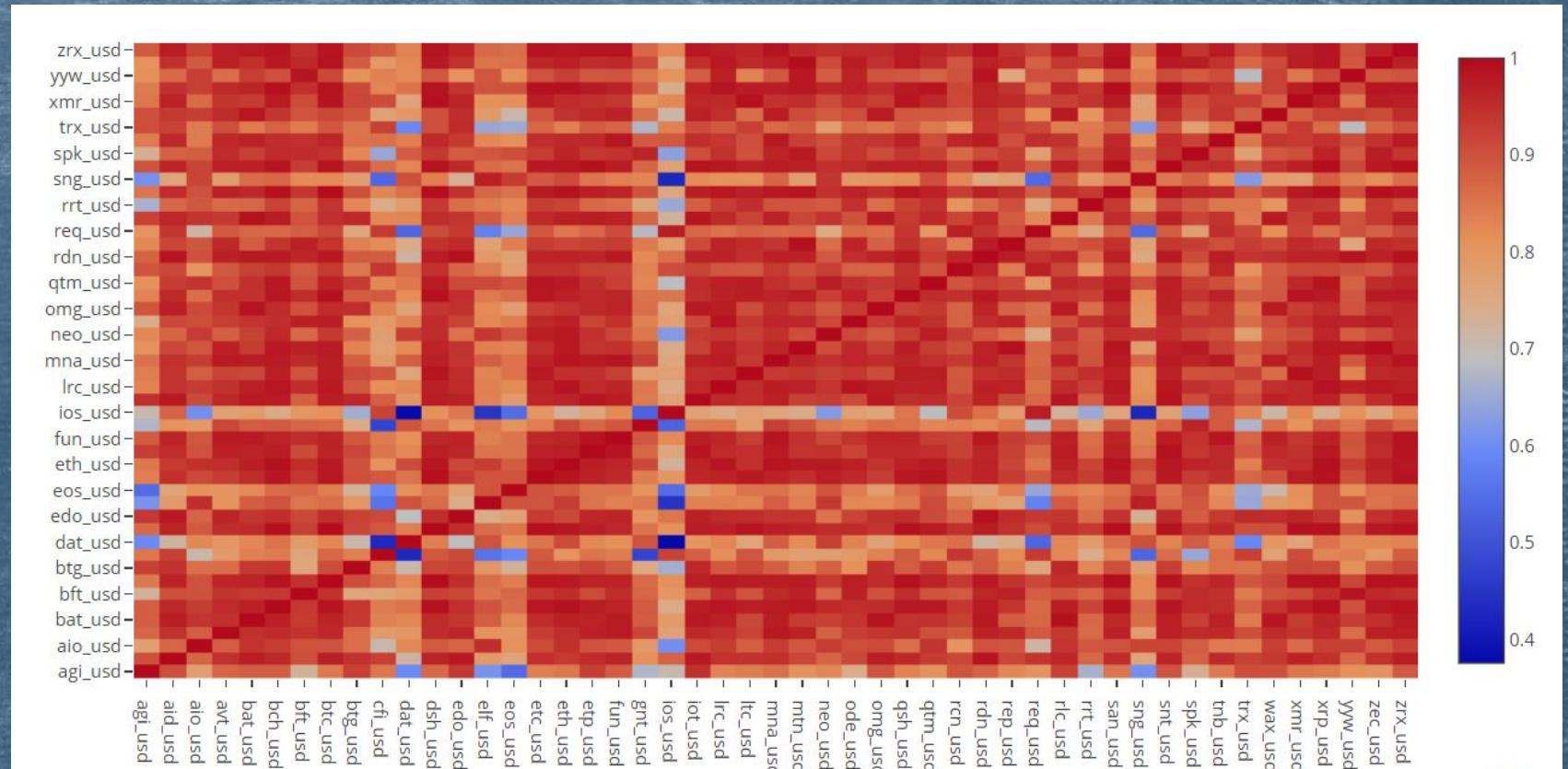
pandas

$$y_{it} = \beta' x_{it} + \mu_i + \epsilon_{it}$$

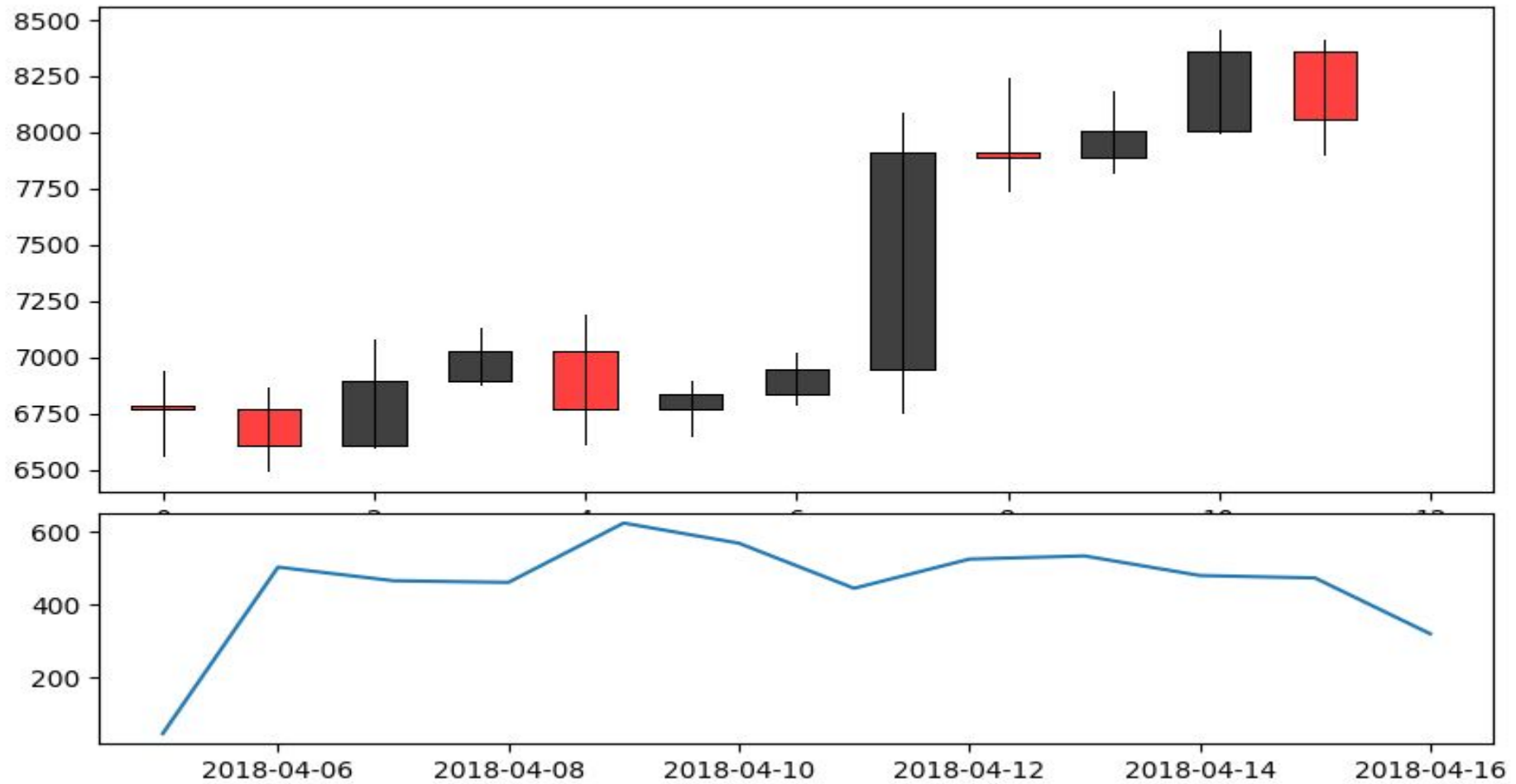


Tool:

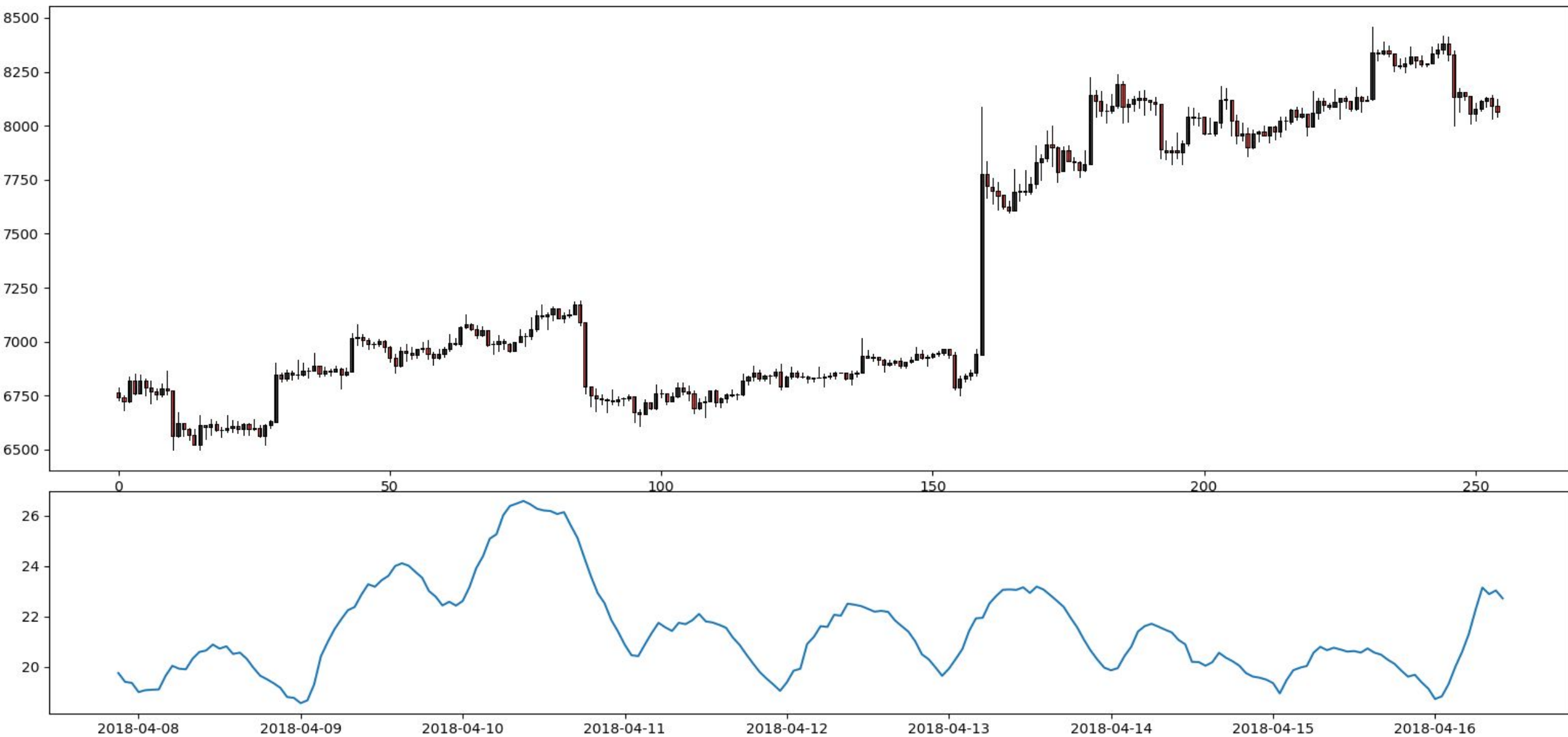
- ▶ Enigma
 - analyze correlation
- ▶ Pandas
 - Backtesting

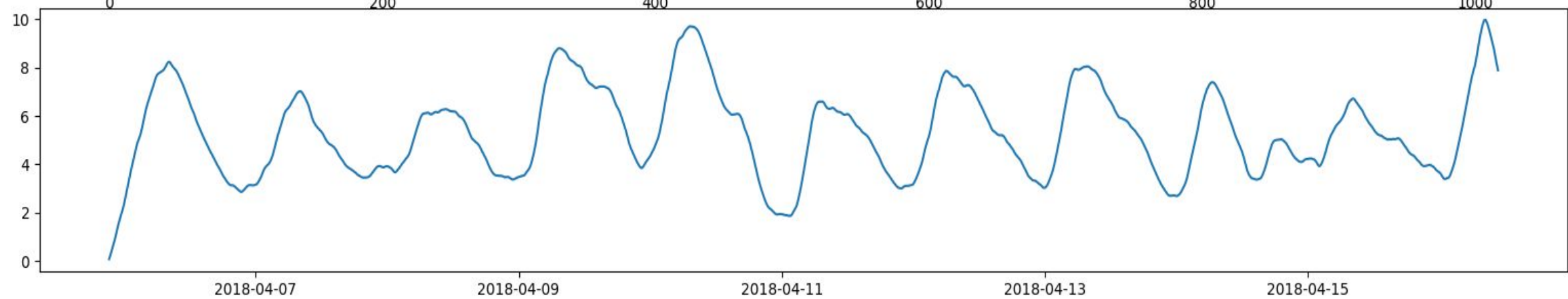


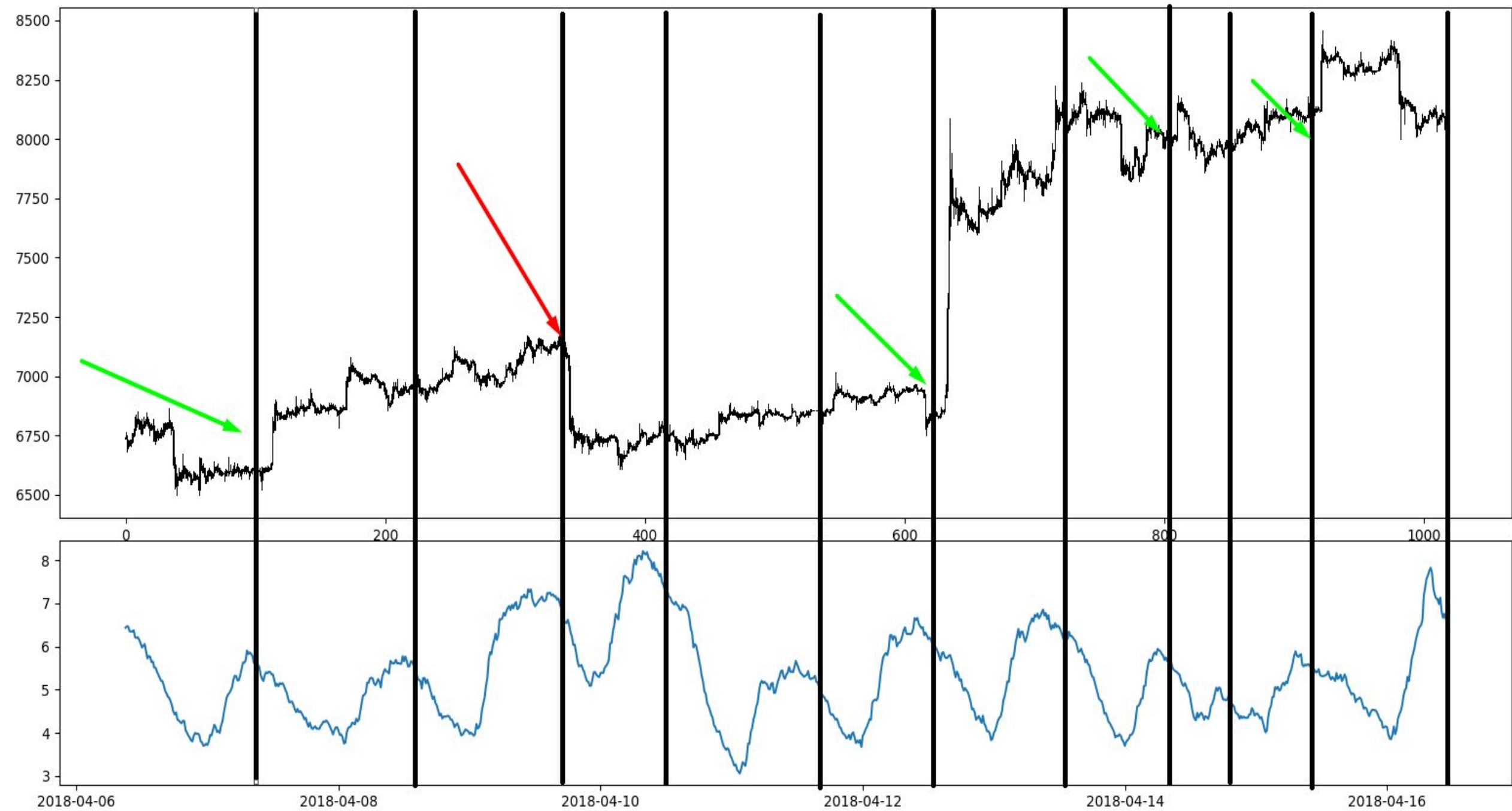
1 day candles vs sentiment

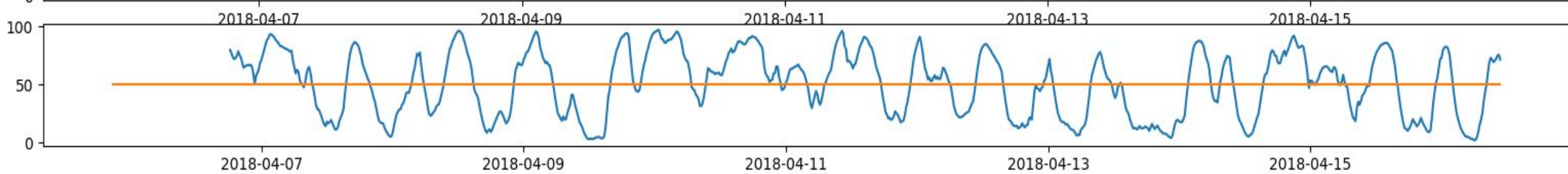
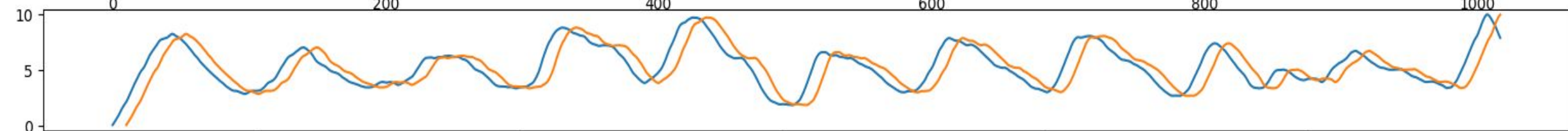
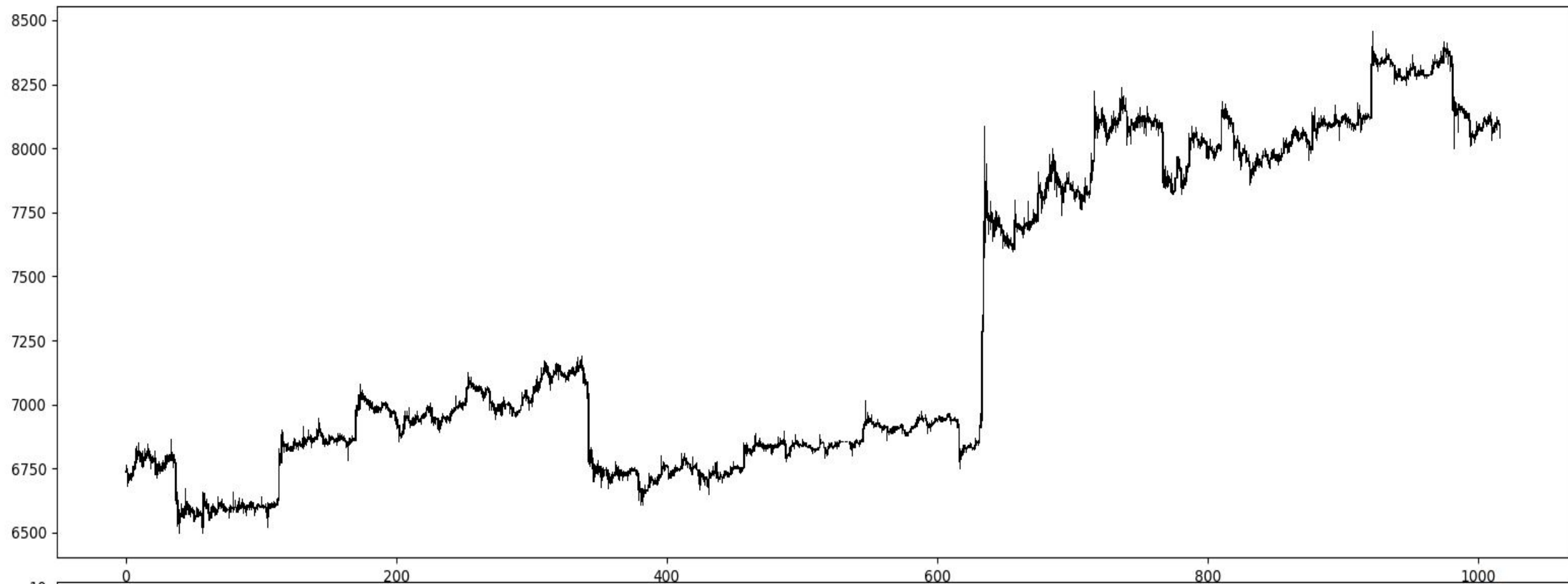


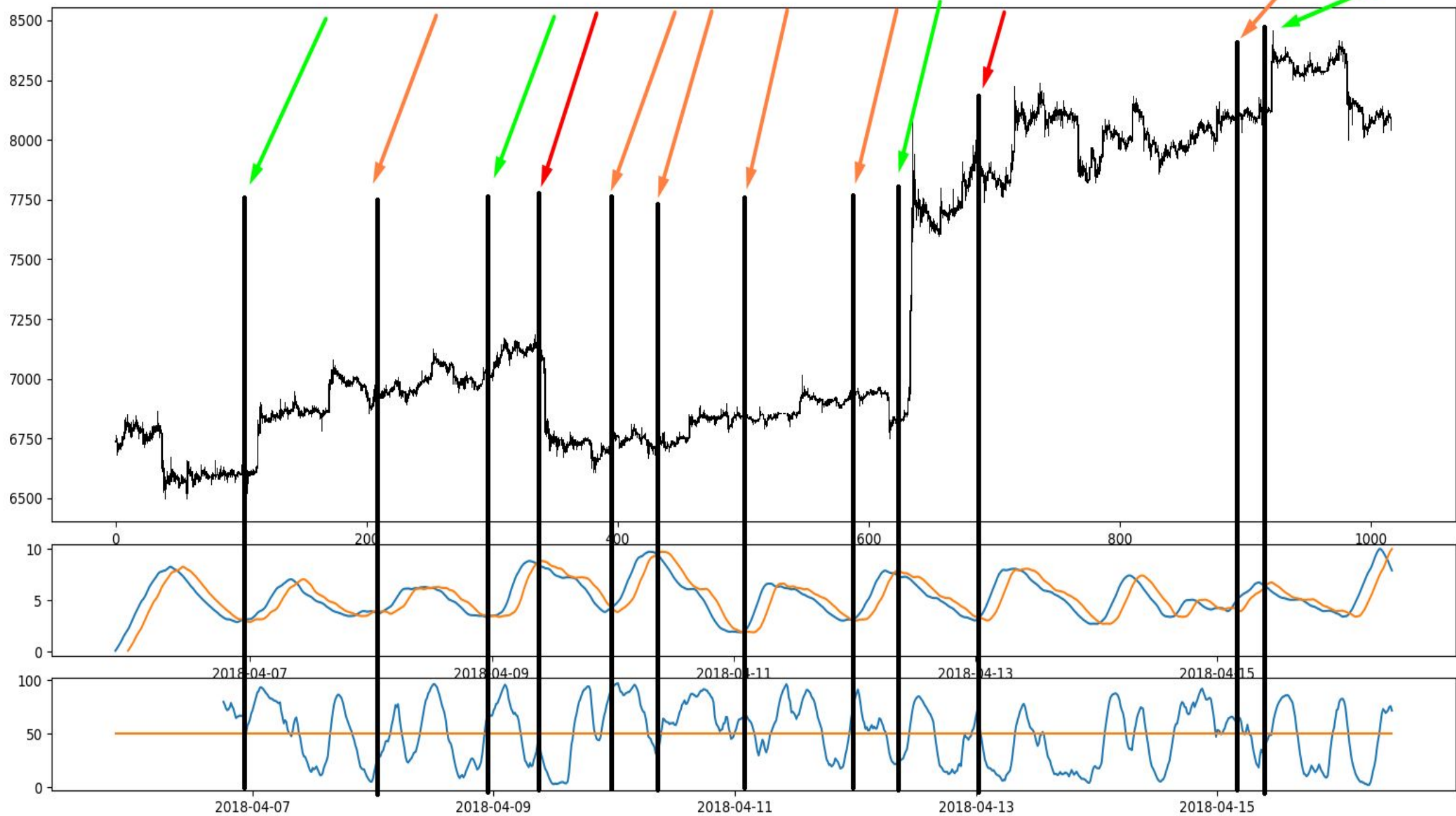
1 hour candles vs sentiment ema 50











Conclusion

- ▶ Sentiment can be a reasonable indicator for short term momentum and is universally observable, rather than specific to one currency.
- ▶ Sentiment may have a larger role as an indicator in long term trends; not enough data to determine.
- ▶ Sentiment may have some kind of cycling effect on currencies.