Cryptocurrency Sentiment Analysis

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Introduction

- Cryptocurrency Market is very volatile
- Use sentiment towards cryptocurrency
- Client: Those interested in the Cryptocurrency market
- **Agenda:**
  - Analyze Cryptocurrency sentiment
  - identify its relation with price
  - compare negative and positive values

Methodology

- Data
  - Cryptocurrency API: Augmento, SentiCrypt
  - Already collected data from Augmento
- Tools:
  - Python, Pandas, Numpy
  - Matplotlib, Seaborn, Scikit-Learn
  - Github, Flask, Heroku

Data Pipeline

Data Ingestion

Obtain data from Augmento and Senticrypt as CSV files

Testing/Robustness

User input will show new plots

Data Storage

Read CSV as a dataframe, clean, and save as a json file

Processing
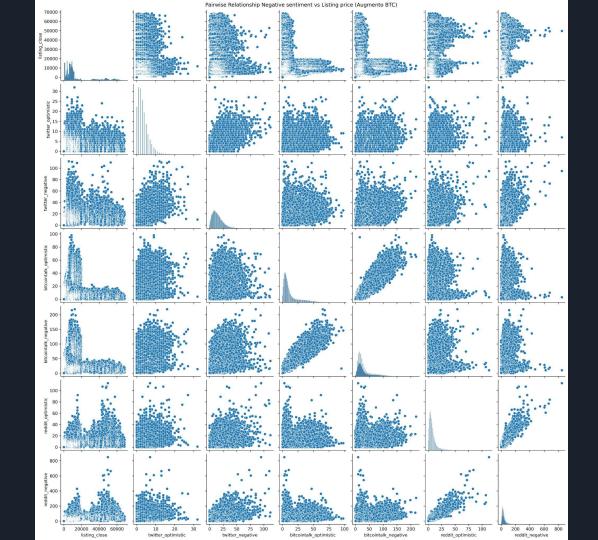User input s to plot and calculate prediction for particular coins
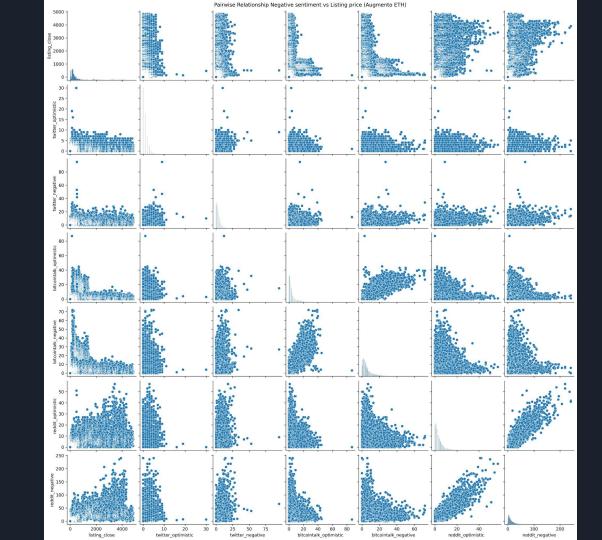
Deployment

Flask and Heroku

Cryptocurrency Prediction based on Sentiment Values

```
Linear Regression R2 train: 0.6419186244895757
Linear Regression MSE: 100548795.00038819
Linear Regression R2 test: 0.6101329512177643
Linear Regression MSE: 120925019.06479543
Mean absolute error: 7463.618134340333
0.5905028669544384
```
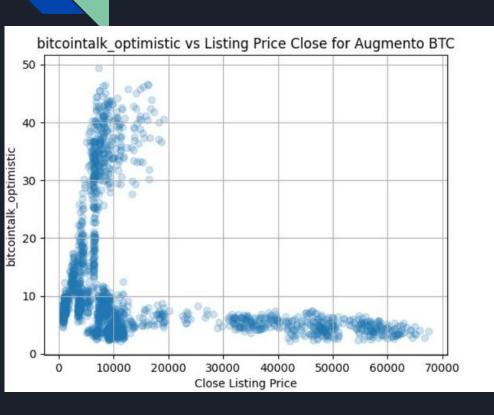
Correlation between Sentiment Values and Cryptocurrency Value (Augmento BTC)

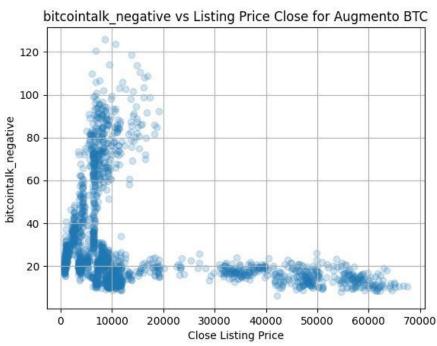Correlation between Sentiment Values and Cryptocurrency Value (Augmento ETH)

Comparison Bitcointalk Optimistic vs Negative

bitcointalk_optimistic vs Listing Price Close for Augmento BTC

bitcointalk_negative vs Listing Price Close for Augmento BTC

Flask Web App

Select a Sentiment Value:

⚪   ⚪   ⚪   ⚪   ⚪   ⚪   ⚪   ⚪   ⚪   ⚪   ⚪   ⚪   ⚪

listing_close twitter_negative twitter_optimistic bitcointalk_negative bitcointalk_optimistic reddit_optimistic reddit_negative bitcointalk_positive reddit_positive twitter_positive twitter_prediction bitcointalk_prediction reddit_prediction

Select a Dataframe:

⚪ btc_aug   ⚪ eth_aug

twitter_negative	twitter_optimistic	bitcointalk_negative	bitcointalk_optimistic	reddit_optimistic	reddit_negative	bitcointalk_positive	reddit_positive	twitter_positive
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Submit

Model Prediction:
listing_close : 1459616.49

Model Graphs:

Future Work

- Make Web app prettier and adjusted to size of window
- Testing the web app more, directly retrieve api from site
- Add in different Regression
- Ability for user to save the plot
- Add in data analysis for Senticrypt into Flask webapp
- Make plot ticks have better looking visualization

Conclusion

- Linear Regression Model Precision: 61%
- Relation between Sentiment and Cryptocurrency Value
- Engineered Model that predicts Cryptocurrency Value
- Created Web app for Users to interact with

Appendix

- APIs:
  - Augmento:https://www.augmento.ai/
  - SentiCrypt:https://senticrypt.com/docs.html
- Timeframe:
  - Augmento: November 2016 - January 2022
  - SentiCrypt: January 2022

Thank you