

ds_-sushmitha-

Web3 Trading Team Internship Data Science Project

Project Overview

This project analyzes the relationship between trader behavior and market sentiment in the Bitcoin trading environment. Using two primary datasets — the Bitcoin Market Sentiment (Fear vs Greed) and Historical Trader Data from Hyperliquid — the analysis aims to explore how trading behavior such as profitability, risk taking (leverage), and volume align or diverge with overall market sentiment.

Folder Structure

- `notebook_1.ipynb`: Main Google Colab notebook containing data loading, cleaning, exploratory data analysis, merger, and visualization.
- `csv_files/`: Directory containing raw and cleaned CSV datasets.
- `outputs/`: Folder containing visual outputs such as graphs and charts in PNG/JPG format.
- `ds_report.pdf`: Final project report summarizing insights and analysis.
- `README.md`: This documentation file.

Data Sources

1. **Bitcoin Market Sentiment Dataset**: Contains daily market sentiment labeled as Fear or Greed (`Date`, `Classification`).
2. **Historical Trader Data**: Detailed transaction data for traders including profit/loss, leverage, trade sizes, and timestamps.

Setup & Usage

1. Clone or download this repository.
2. Open `notebook_1.ipynb` in Google Colab.
3. Mount your Google Drive to access data files.
4. Follow notebook cells to run stepwise data cleaning, merging, and visualization.
5. Review final analysis and download cleaned datasets from the `csv_files/` folder.
6. View visual outputs in the `outputs/` folder and final insights in `ds_report.pdf`.

Key Findings

- Market sentiment significantly influences trader behavior; higher leverage and profitability correlate with Greed phases.
- Fear periods correspond with lower risk-taking and reduced trading volumes.
- Visualizations illustrate distinct patterns linking sentiment to trading activities and performance.

Future Work

- Build predictive models using trader metrics to forecast market sentiment.
- Incorporate more granular time series analysis.
- Explore sentiment impact on different coin symbols and account types.

License

The project code is open for review and reuse under the MIT license. The datasets used belong to their respective owners and are used solely for educational and evaluation purposes.

Contact

For questions or contribution inquiries, please contact:

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Project Description

This project explores and analyzes the relationship between trader behavior and market sentiment in the Bitcoin trading market. It uses two key datasets: the Bitcoin Market Sentiment Dataset, categorizing each day's market sentiment as Fear or Greed, and the Historical Trader Data from Hyperliquid, containing detailed transaction information such as profit, risk, volume, and leverage. By examining how trading behaviors align or diverge with overall market sentiment, the project aims to identify hidden trends or signals that could enable smarter trading strategies.

Key Goals

- Clean and preprocess both the Fear/Greed sentiment data and historical trader transactions.
- Explore the distribution and characteristics of trader behavior during Fear versus Greed market sentiment phases.
- Analyze key metrics such as profitability, risk exposure (leverage), trade volume, and closed profit/loss in relation to market sentiment.
- Visualize relationships and trends between trader activity and sentiment through insightful charts and graphs.
- Produce a final report summarizing findings, insights, and potential implications for trading strategies.

Thank you for reviewing my project!