

Trader Behavior Insights Report

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1. Executive Summary

This project analyzed the relationship between Bitcoin market sentiment and trader performance using two datasets:

- Fear & Greed Index (market sentiment)
- Hyperliquid Trader Data (real trading activity)

Key Insights:

- Closed PnL spikes during Greed and Extreme Greed phases.
- Leverage usage is higher when sentiment is bullish.
- Trading volume contracts during Extreme Fear, reflecting cautious market behavior.

2. Objective

To explore how trader behavior (PnL, trading volume, leverage) aligns or diverges from market sentiment (Fear vs. Greed) and uncover patterns that can inform smarter trading strategies.

3. Datasets Used

Bitcoin Market Sentiment Dataset

Columns: Date, Classification (Fear/Greed)

Hyperliquid Trader Data

Columns: account, symbol, execution price, size, side, time, start position, event, closedPnL, leverage, etc.

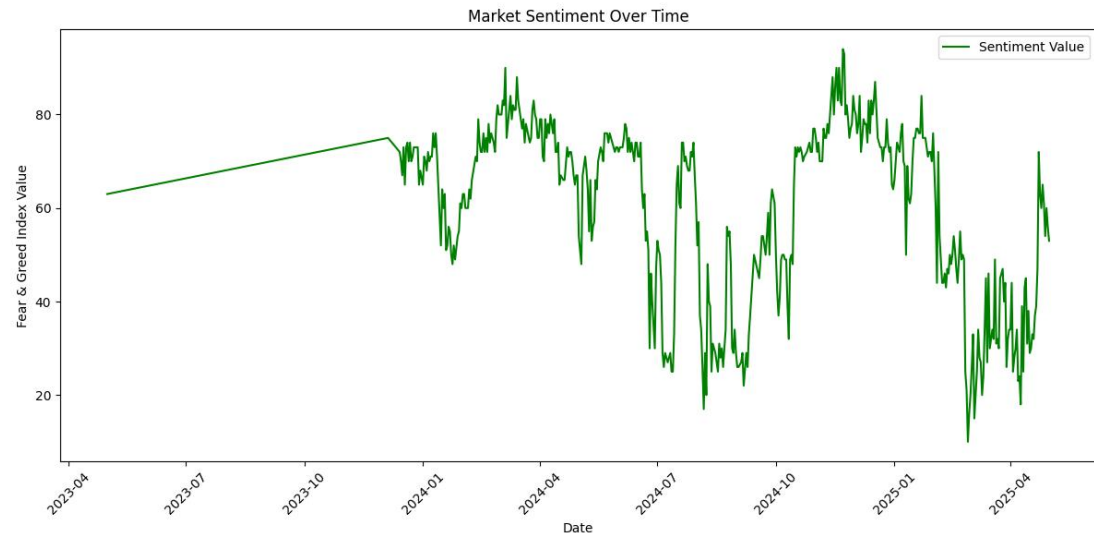
Preprocessing Steps:

- Merged datasets on date
- Cleaned missing values
- Converted timestamps to standard format
- Normalized sentiment categories

4. Visual Insights

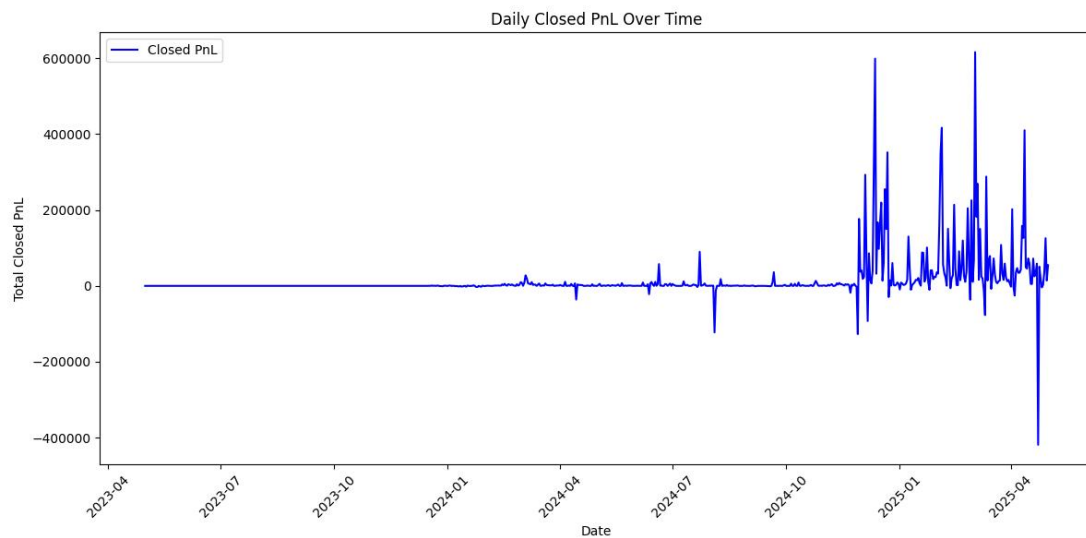
Market Sentiment Over Time

- Shows volatility in sentiment (April–May 2023).
- Useful for identifying emotional market phases.



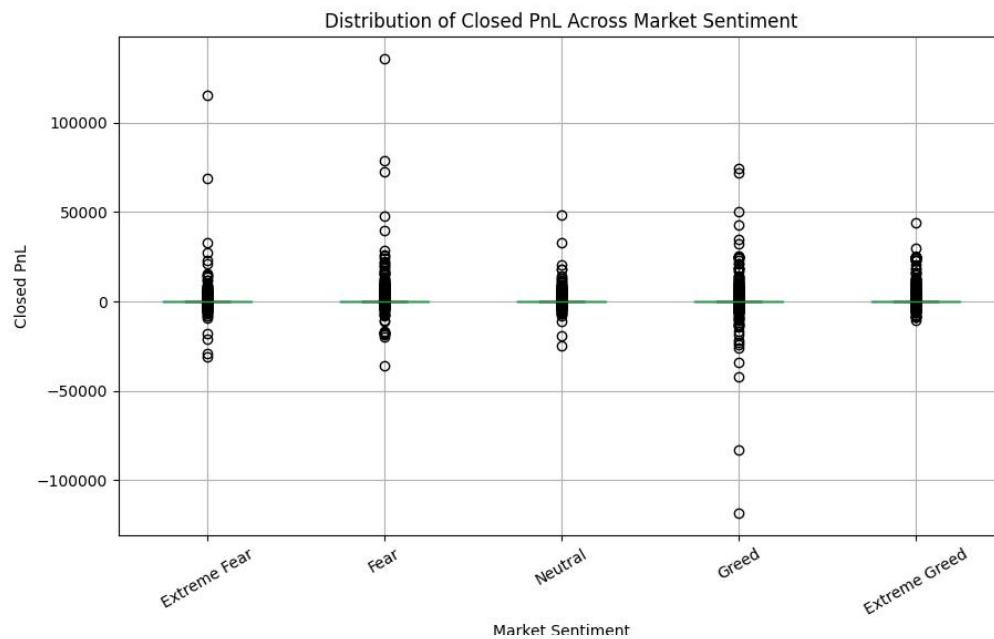
Daily Closed PnL Over Time

- Profitability spikes during bullish sentiment.
- Suggests potential for momentum-based strategies.



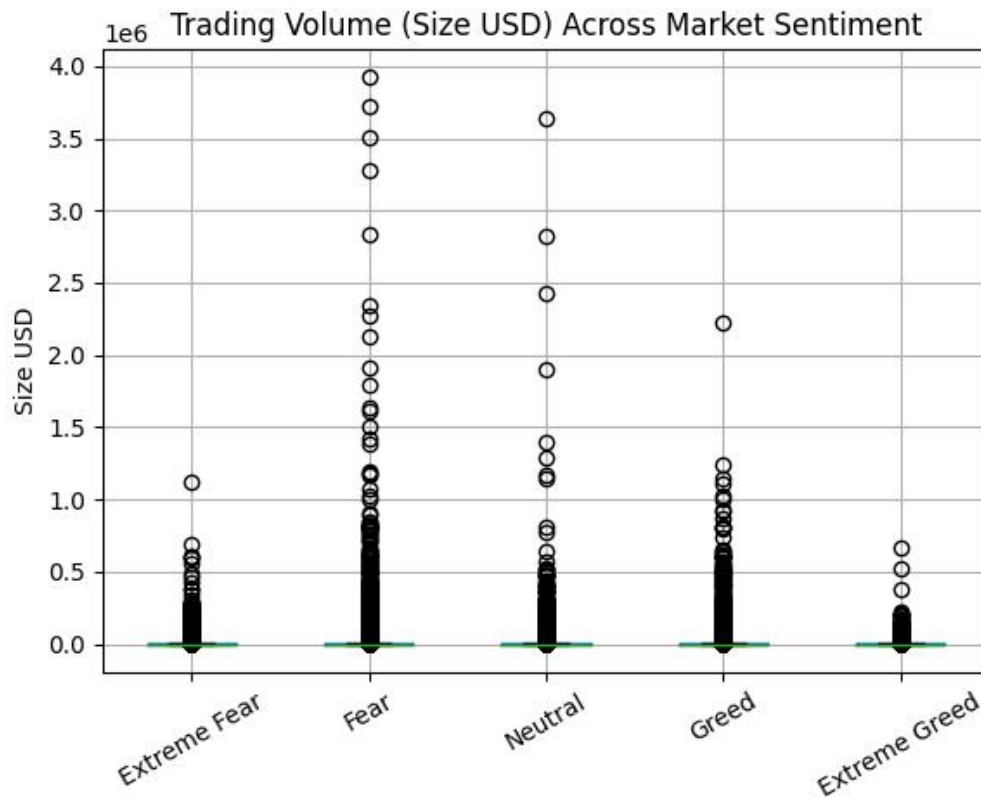
Closed PnL Across Sentiment (Boxplot)

- Median PnL higher during Greed and Extreme Greed.
- Extreme Fear shows tighter distribution and lower outliers.



Trading Volume Across Sentiment (Boxplot)

- Volume surges during Neutral and Greed phases.
- Extreme Fear shows reduced activity → likely risk aversion.



5. Recommendations

- Increase exposure during Greed phases to capture higher profitability.
- Tighten risk management during Extreme Fear.
- Implement sentiment-based alerts for better entry/exit timing.

6. Limitations

- Sentiment data is daily, while trader data is timestamped → some granularity lost.
- External factors (macro events, news) not included.
- Dataset covers a limited time range.

7. Next Steps

- Expand analysis with real-time sentiment feeds.
- Build predictive models using sentiment as a feature.
- Explore symbol-specific behavior (e.g., BTC vs ETH).