

DS REPORT — Trader Behavior Insights

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Project: *Trader Behaviour vs Market Sentiment (Fear/Greed)*

Company: *Bajarangs x PrimeTrade.ai (Internship Assignment)*

1. Introduction

This project explores how trader performance, risk-taking behavior, and trading volume respond to the Bitcoin market sentiment — specifically Fear vs Greed phases.

Using two datasets:

- Hyperliquid Trader Data
- Bitcoin Fear & Greed Sentiment Index

I analyzed interactions between market mood and trader behavior to identify actionable insights for trading strategy optimization.

2. Data Overview

Hyperliquid Trader Data

Includes fields:

- execution price, size, side, time, Closed PnL, leverage, account, start position
- This dataset reflects the *actual trading behavior* of traders.

Fear & Greed Index

Includes:

- date, classification (Fear/Greed)
- This measures overall market psychology.
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3. Methodology

1. Data Cleaning & Preprocessing

- Converted timestamps
- Removed invalid rows
- Converted numeric fields
- Extracted daily date
- Merged datasets on date

2. Feature Engineering

- Profitability (closedPnL > 0)
- Trade value = execution price × size
- Side → Long/Short mapping

3. Exploratory Data Analysis (EDA)

- Profit vs Sentiment
- Leverage vs Sentiment
- Trade volume vs Sentiment
- Long/Short vs Sentiment

4. Visualization

- Charts saved in /outputs folder.

4. Key Insights

1. Profitability is Higher During Greed

Traders achieved a higher profitable trade percentage during Greed phases. This indicates that greed-phase markets may offer more stable trends for profit.

2. Leverage Spikes During Greed

Average leverage was significantly higher during Greed. This suggests traders take more risk when confidence is high.

3. Total Trading Volume is Higher During Greed

Trade value is substantially larger when sentiment is Greedy — indicating market activity increases when optimism is high.

4. Long Trades Dominate During Greed, Short Trades Increase During Fear

- Greed → More Long positions
- Fear → More Short hedging positions

This aligns with classical market psychology.

5. Recommendations

Reduce leverage during Greed phases

To protect against sharp reversals.

Watch for opportunity spikes during moderate Fear

Some experienced traders show higher accuracy in Fear periods.

Build sentiment-adjusted trading bot features

Automated systems can integrate Fear/Greed as a risk-adjustment input.

6. Conclusion

The analysis clearly shows that:

- Market sentiment strongly influences trading behavior.
- Traders take more risk and trade more actively during Greed.
- Profitability also tends to increase during Greed phases.

This project highlights how sentiment indicators can be combined with trading behavior to build smarter, more informed trading strategies.