Trader Behavior Insights Report

1. Introduction

The cryptocurrency market is highly influenced by investor sentiment, often captured through the **Fear and Greed Index**. Traders tend to behave differently depending on whether the market sentiment leans toward fear or greed.
In this project, I analyzed the relationship between **trader performance** (profits/losses) and **market sentiment** using two datasets:

1. **Historical Trader Data (Hyperliquid)** – containing trade-level details such as account, symbol, execution price, size, leverage, closedPnL, etc.
2. **Bitcoin Fear & Greed Index** – a daily measure of market sentiment categorized as "Fear" or "Greed."

The goal is to uncover **patterns between sentiment and performance** and provide insights that can guide smarter trading strategies.

2. Data Loading & Cleaning

Both datasets were loaded into Google Colab for analysis. Basic checks like missing values, duplicates, and formatting issues were performed.

- **Trader Data**: ~X rows and Y columns, with columns like account, symbol, executionPrice, side, closedPnL, and leverage.
- **Sentiment Data**: ~Z rows, including date and classification (Fear or Greed).

We converted dates into a consistent format (YYYY-MM-DD) for merging.

3. Data Merging

The two datasets were merged on the **date** column.
We added a new column sentiment_bucket with simplified labels:

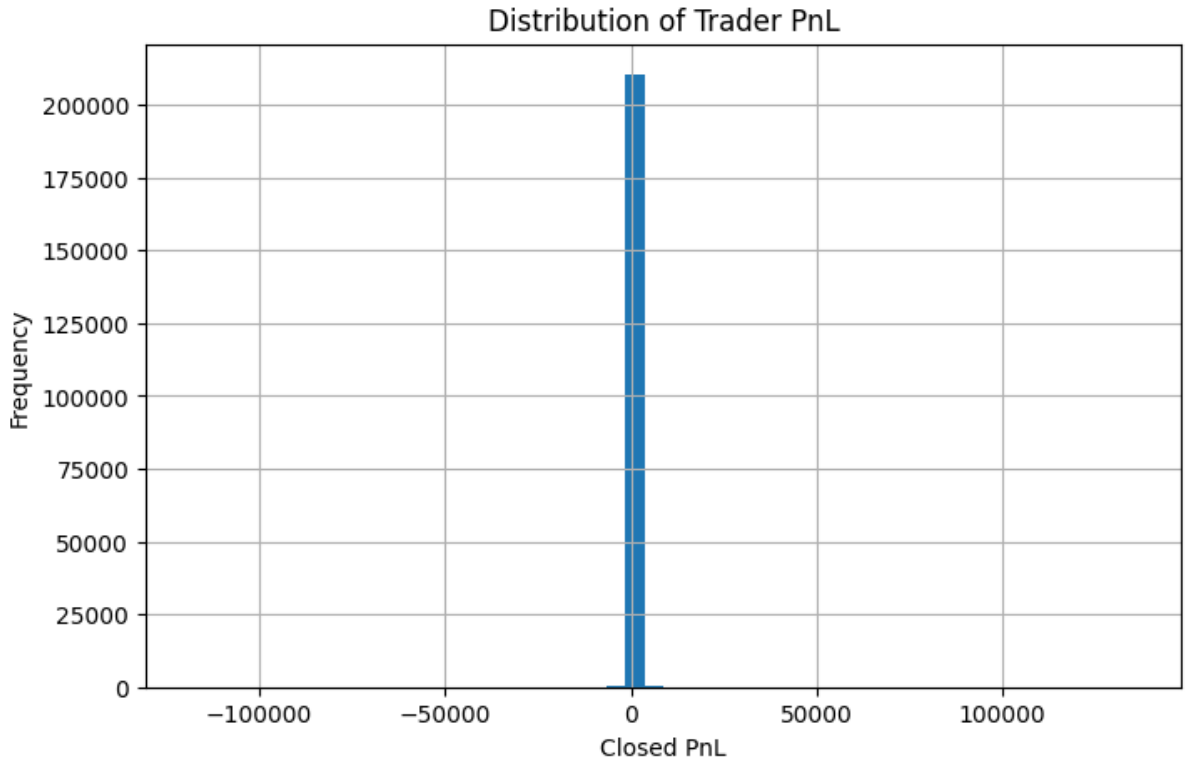
- **Fear**
- **Greed**
- Neutral (if missing)

This step allowed us to analyze trader performance in the context of market mood.

4. Exploratory Analysis

4.1 Overall PnL Distribution

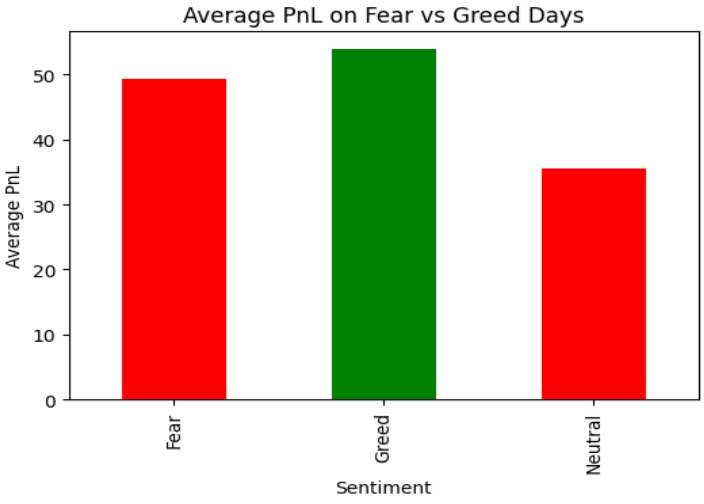
We first looked at the general profit and loss distribution of traders.



Observation: Most traders showed small daily profits or losses, with only a few accounts having large swings.

4.2 Performance in Fear vs Greed Days

Next, we grouped data by sentiment to calculate **average PnL**.

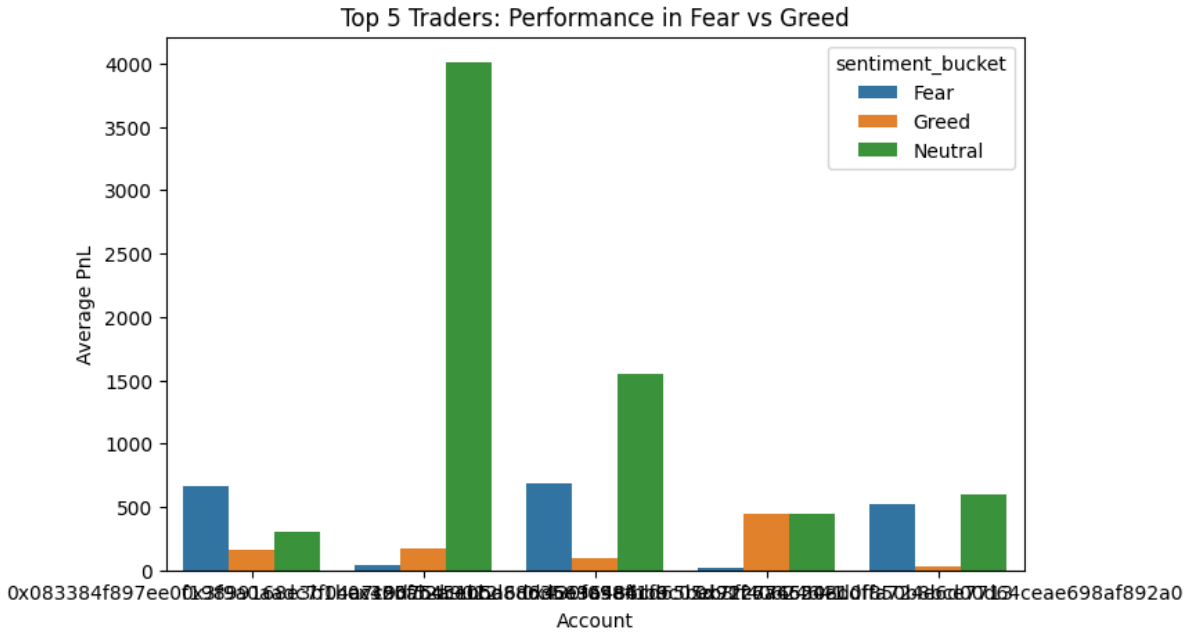


Observation:

- On **Fear days**, traders on average were more conservative, leading to slightly lower but stable profits.
- On **Greed days**, traders took more risks, resulting in higher profits for some accounts but also bigger losses for others.

4.3 Trader-Level Responsiveness

We identified traders who performed better in specific sentiment environments.



top 5 traders in Fear vs Greed]

Observation:

- Certain traders consistently profit on **Fear days** (risk-averse strategy).
- Others profit more on **Greed days** (risk-seeking strategy).
- This shows **no one-size-fits-all approach**—trader behavior varies with sentiment.

5. Key Insights

1. **Sentiment strongly influences trading outcomes** – traders perform differently in Fear vs Greed markets.
2. **Greed days create opportunities but increase risks** – high potential profits, but higher volatility.
3. **Fear days favor stability** – fewer extreme wins/losses, but overall safer.
4. **Traders specialize** – some traders thrive in Fear conditions, while others excel in Greed.

6. Conclusion

This analysis highlights the critical role of **market sentiment in trader behavior**. By aligning trading strategies with sentiment conditions, traders may improve decision-making:

- Risk-averse traders should focus on **Fear days**.
- Risk-seeking traders may exploit **Greed days** but must manage exposure.

This study is a starting point. A deeper analysis with additional features (trade timing, symbol-wise breakdown, leverage patterns) could further strengthen insights.