Trader Behavior Insights Using Market Sentiment

1. Objective

The objective of this study is to analyze how trader behavior and performance vary across different Bitcoin market sentiment regimes—Fear, Greed, Extreme Greed, and Neutral. By combining historical trade data from Hyperliquid with the Bitcoin Fear & Greed Index, this analysis aims to uncover behavioral patterns that can inform smarter trading strategies in Web3 markets.

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2. Data Description

Two datasets were used:

- **Historical Trader Data** containing trade-level information such as execution price, trade size, side, leverage, and realized PnL.
- **Bitcoin Fear & Greed Index**, which classifies daily market sentiment based on emotional and behavioral indicators.

Trades were aligned with market sentiment using execution date.

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3. Methodology

Trade timestamps were converted into daily execution dates and merged with the corresponding sentiment classification. Exploratory data analysis was conducted to evaluate trade volume and profitability across sentiment regimes. Aggregated metrics such as total trades, average PnL, total PnL, and average trade size were calculated to identify performance trends.

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4. Key Findings

- Greed periods show the highest average profitability per trade, indicating strong momentum-driven opportunities.
- Fear periods generate the highest cumulative profits due to significantly higher trading activity and volatility.
- Extreme Greed is associated with larger trade sizes but declining profitability efficiency, suggesting overconfidence risk.
- Neutral periods exhibit lower participation and weaker performance.

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5. Strategic Implications

- Momentum strategies perform best during Greed phases.

- Mean-reversion and volume-based strategies are more effective during Fear.
- Risk management should be tightened during Extreme Greed.
- Reduced capital allocation may be optimal during Neutral regimes.

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6. Conclusion

Market sentiment plays a critical role in shaping trader behavior and performance. Understanding how profitability and risk vary across sentiment regimes can help traders and platforms design more adaptive and intelligent trading strategies.