Title

Trader Behavior Analysis Under Market Sentiment Regimes

1. Objective

The objective of this assignment is to analyze how trader behavior varies across different market sentiment regimes such as Fear, Extreme Fear, Greed, and Extreme Greed. The analysis aims to identify performance patterns and actionable insights that can support smarter trading strategies in Web3 markets.

2. Datasets Used

1. **Hyperliquid Historical Trader Dataset**
   This dataset contains trade-level information such as account ID, execution price, trade size, trade direction, closed PnL, and fees.
2. **Bitcoin Fear & Greed Index**
   This dataset provides daily market sentiment classifications reflecting market psychology.

3. Methodology

- Converted trader timestamps (Timestamp IST) into datetime format.
- Extracted trade dates and aligned them with daily market sentiment.
- Merged trader activity with sentiment data using the trade date.
- Aggregated trader-level performance metrics including total PnL, win rate, trade count, average trade size, and total fees.
- Identified contrarian traders who perform well during Fear and Extreme Fear regimes.

4. Key Findings

- Trader profitability varies significantly across sentiment regimes.
- Fear and Extreme Fear periods show higher dispersion in returns, indicating increased volatility.
- Certain traders consistently outperform during Fear regimes, highlighting contrarian behavior.
- Greed regimes tend to have higher trading activity but also higher transaction costs.

5. Actionable Insights

- Incorporating sentiment awareness can improve risk management.
- Contrarian strategies during Fear regimes may offer better long-term returns.
- Monitoring trader performance by sentiment regime can help refine trading strategies.

6. Conclusion

This analysis demonstrates that market sentiment plays a crucial role in trader behavior and performance. Integrating sentiment-based analytics into trading strategies can lead to more informed and robust decision-making in volatile crypto markets.