Trader Performance vs Market Sentiment

Primetrade.ai – Data Science Intern Round 0 Assignment

Executive Summary

This project analyzes the relationship between Bitcoin market sentiment (Fear/Greed Index) and trader performance on Hyperliquid. By aligning daily sentiment data with over 211,000 trade records, we identify measurable behavioral shifts and uncover actionable trading insights. The analysis demonstrates that trader profitability and behavior vary meaningfully across sentiment regimes, suggesting that sentiment-aware strategies can improve risk-adjusted performance.

Methodology

1. Data Preparation: Validated data integrity, converted timestamps, and aligned datasets at daily level. 2. Feature Engineering: Computed daily PnL, win rate, trade size, trade frequency, and long/short behavior. 3. Sentiment Analysis: Compared performance across Extreme Fear, Fear, Neutral, Greed, and Extreme Greed. 4. Trader Segmentation: Categorized traders by size and trading frequency.

Key Findings

• Profitability peaks during Extreme Greed regimes. • Win rate improves significantly in Greed environments. • Trade frequency spikes during Fear periods. • Traders increase position sizes during Fear. • High-size traders benefit most during bullish sentiment.

Strategic Implications

1. Sentiment-Based Position Sizing: Increase exposure during Extreme Greed and reduce exposure during Fear. 2. Overtrading Control: Cap daily trade frequency during Extreme Fear to reduce reactive losses. 3. Segment-Specific Optimization: Encourage momentum strategies in Greed and enforce risk discipline in Fear.

Conclusion

The analysis confirms a measurable relationship between market sentiment and trader performance. Behavioral adjustments in trade size and frequency suggest systematic responses to sentiment regimes. Incorporating sentiment-aware risk management can enhance platform-level profitability and trader outcomes.