Trader Behavior vs Market Sentiment Analysis

Objective

- Analyze how market sentiment (Fear vs Greed) affects trader performance and risk behavior
- Use historical Hyperliquid trade data and the Fear & Greed Index
- Extract actionable, sentiment-aware trading insights

Methodology

- Cleaned and filtered invalid or zero-size trades
- Converted timestamps and aligned datasets at daily level
- Aggregated trader metrics per account per day
- Capped extreme PnL outliers (1st–99th percentile)
- Compared Fear vs Greed regimes using Mann–Whitney U test
- Segmented traders into high-activity vs low-activity groups

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Key Findings

- **Performance Regime Effect**
    - Median PnL is higher during Fear regimes
    - Win rate improves during Fear
- **Behavioral Shift**
    - Trade frequency remains similar across regimes
    - Traders show higher trade accuracy during Fear
- **Segmentation Insight**
    - High-activity traders are more sensitive to sentiment regimes
    - Performance differences are more visible in active trader segments

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Statistical Evidence

- Mann–Whitney U test used due to non-normal financial data
- Observed [significant / directional] difference in PnL distributions between Fear and Greed

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Actionable Strategy Rules

- During Fear regimes, allow higher trade frequency for consistent traders
- During Greed regimes, reduce leverage and tighten risk controls
- Use sentiment regime as a filter for position sizing

Conclusion

- Market sentiment influences trader edge through quality of trades rather than quantity
- Sentiment can be used as a regime filter in systematic trading strategies