Web3 Trading — Trader Behavior Insights

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Objective

Explore how trader performance (profitability, risk, volume, leverage) aligns or diverges from Bitcoin market sentiment (Fear vs Greed) and extract actionable insights for smarter trading strategies.

Datasets

1. Historical Trader Data — Hyperliquid (columns include account, symbol, execution price, size, side, time, start position, event, closedPnL, leverage, etc.)
2. Bitcoin Fear & Greed Index — daily classification (Fear / Greed)

Methods

- Data cleaning and datetime alignment.
- Feature engineering: notional (size * price), pnl_pct, win flag, daily aggregation.
- EDA: distribution plots, boxplots, daily aggregations.
- Statistical comparisons: mean/median comparisons across sentiment groups.
- (Optional) simple logistic regression to check predictive signals.

Key Visuals

- Sentiment counts (sentiment_counts.png)
- PnL distribution by sentiment (pnl_distribution.png)
- Trading volume (notional) vs sentiment (trading_volume_vs_sentiment.png)
- Leverage vs sentiment (leverage_vs_sentiment.png) — if available

Key Findings

- Finding 1: [short, quantified statement — e.g., "Avg leverage is ~X% higher on Greed days (p = 0.03)."]
- Finding 2: [e.g., "Median closed PnL is higher/lower under Fear — median PnL for Fear = $..., Greed = $...."]
- Finding 3: [e.g., "Daily notional (volume) increases by an average of ... before sentiment flips."]

Actionable Recommendations

1. Risk control: Reduce position size or set stricter stop rules during Greed spikes when leverage increases.
2. Strategy signal: Consider momentum strategies when volume spikes pre-flip; validate with backtest.
3. Monitoring: Combine on-chain price action with sentiment signal for trade sizing adjustments.

Limitations & Next Steps

- Limited to dataset timeframe and granularity. Merge with price time-series (OHLC) and on-chain liquidity would strengthen analysis.
- Backtest recommended strategies over multiple market regimes.

Appendix

Links:
- Colab notebook:
https://colab.research.google.com/drive/17EKiZ02N8c0z3Gq5R1A_aPm358Xw8ddo?usp=sharing
- GitHub link: https://github.com/kalex0000/ds_Web3-Trading