Trader Performance vs Market Sentiment — Summary

Methodology

This project analyzes the relationship between Bitcoin market sentiment (Fear/Greed Index) and trader performance on Hyperliquid.

The datasets were cleaned and aligned at a daily level. Key metrics were engineered, including:

- Daily Closed PnL (profitability)

- Win rate (percentage of profitable trades)

- Trade frequency (number of trades per day)

- Average position size (risk exposure)

- Long/Short bias

Sentiment regimes were categorized into Extreme Fear, Fear, Neutral, Greed, and Extreme Greed. Performance and behavioral patterns were compared across these regimes.

Trader segmentation was performed to evaluate differences between large vs small position traders, frequent vs infrequent traders, and consistent vs inconsistent traders.

Additionally, a logistic regression model was built to predict daily profitability using sentiment and behavioral features. The model achieved **79% accuracy**, indicating that sentiment and behavior have measurable predictive value.

Key Insights

- Profitability is highest during **Extreme Fear** periods, suggesting panic-driven volatility creates strong trading opportunities.

- Greed and Extreme Greed phases show lower average PnL despite slightly higher win rates in some cases.

- Trading activity increases significantly during Fear regimes.

- Larger position traders experience greater volatility during sentiment extremes.

- Sentiment combined with behavioral metrics provides predictive power (79% accuracy).

The relationship between sentiment and profitability appears non-linear, with extreme pessimism generating stronger average returns than euphoric market conditions.

Strategy Recommendations

Strategy 1 — Controlled Aggression During Extreme Fear

Increase position size selectively during Extreme Fear periods while applying strict risk management. Historical results indicate higher profitability during panic-driven markets.

Strategy 2 — Risk Reduction During Greed Phases

Reduce exposure and avoid excessive trading during Greed and Extreme Greed regimes. Lower profitability during optimistic markets suggests reduced edge and possible crowding effects.

Overall, a **sentiment-aware dynamic risk allocation strategy** is recommended, where exposure and trading intensity adjust based on market regime rather than remaining constant.