Trader Performance vs. Bitcoin Market Sentiment – Report

1. Objective

Analyze the relationship between Bitcoin market sentiment (Fear & Greed Index) and trader performance (PnL, win rate, leverage usage) using historical Hyperliquid trading data. Identify patterns that could guide better trading strategies.

2. Datasets

1. Bitcoin Market Sentiment Dataset – Date, classification (Fear, Greed, Extreme Greed, Neutral). Daily sentiment index from the Fear & Greed Index.
2. Hyperliquid Historical Trader Data – Includes account, symbol, execution price, size, side, time, start position, event, closedPnL, leverage, etc.

3. Methodology

• Data Cleaning – Converted date formats, handled missing leverage info, removed irrelevant columns.
• Data Merging – Joined both datasets on the date column.
• Feature Engineering – Created leverage buckets, calculated win rate, Sharpe-like PnL ratios, and identified top 5% most profitable trades per sentiment group.

4. Key Findings

PnL & Win Rate by Sentiment × Leverage (NoLeverageInfo shown):

Sentiment	Avg PnL	Median PnL	Total PnL	Win Rate (%)	Sharpe-like PnL
Extreme Greed	25.4	0.0	1.77e5	49.0	0.083
Fear	50.0	0.0	6.70e6	41.5	0.055
Greed	87.9	0.0	3.19e6	44.6	0.077
Neutral	22.2	0.0	1.59e5	31.7	0.035

Top 5% Trade Contribution by Sentiment:

Sentiment	Total PnL	Top 5% PnL	Contribution (%)
Extreme Greed	1.77e5	3.29e3	1.86
Fear	6.70e6	3.64e6	54.4
Greed	3.19e6	1.06e6	33.2
Neutral	1.59e5	1.12e4	7.03

5. Insights

• Fear periods generated the highest total PnL and had heavy concentration in top-performing trades.

• Greed periods had higher average PnL per trade but more distributed profits.
• Extreme Greed showed high win rates but lower average profits.
• Neutral sentiment showed the weakest performance.

6. Conclusion

Trader profitability and win rates are influenced by market sentiment. Fearful markets, despite lower win rates, concentrate a large portion of profits in a few trades, while greedy markets have steadier but smaller gains.