Trader Behaviour Analysis

This project analyses trader performance across different sentiment regimes such as Fear, Greed, and Extreme conditions. It identifies traders who consistently respond well to market shifts or show contrarian strength, and detects correlations between sentiment indicators and trading outcomes such as PnL, win rate, risk, profit factor, Sharpe ratio, and maximum drawdown.

Dataset

1. Bitcoin Market Sentiment Dataset

The dataset contains market sentiment data with columns Date,Classification as Extreme fear or extreme greed shows market sentiments.

2. Historical Trader Data from Hyperliquid

The dataset contains historical trading activity along with market sentiment indicators. Each record represents a trade with metrics such as entry and exit time, PnL, win/loss status, trade duration, and sentiment regime at the time of execution.

Objectives

1	**Analyze trader performance in different sentiment regimes**
2	Identify traders with consistent or contrarian performance patterns
3	Correlate sentiment indicators with performance metrics (PnL, win rate, Sharpe ratio, etc.)

Methodology

1. Data Cleaning: Remove missing or inconsistent values, normalize sentiment labels.
2. Feature Engineering: Extract performance metrics and categorize trades by sentiment regime.
3. Statistical Analysis: Compare trader metrics across different sentiment regimes.
4. Visualization: Generate plots showing trader behaviour and sentiment performance correlations.
5. Insights: Summarize key findings on trader adaptability and sentiment impact.

Key Insights

The analysis revealed that certain traders performed consistently well in high volatility, fear driven markets, while others excelled in greed-driven bullish conditions. The Sharpe ratio and profit factor metrics were particularly useful in identifying sustainable trading strategies across market regimes.

Conclusion

Understanding trader behaviour across sentiment regimes enables better allocation of capital, identification of strategy strengths and weaknesses, and potential improvements in automated trading systems. Future work could integrate real-time sentiment feeds for adaptive strategy optimization.