

# **Trader Behavior vs Market Sentiment Analysis**

## **Objective**

The objective of this assignment is to analyze how trader behavior changes under different market sentiment conditions (Fear vs Greed) using historical crypto trading data and the Bitcoin Fear & Greed Index.

## **Datasets Used**

- Hyperliquid historical trader data containing trade-level information such as profit/loss, trade size, and trade direction.
- Bitcoin Fear & Greed Index dataset providing daily market sentiment classifications.

## **Methodology**

- Cleaned and preprocessed both datasets.
- Normalized sentiment labels into Fear and Greed.
- Converted timestamps and merged datasets by date.
- Analyzed trader profitability, trade size as a proxy for risk exposure, and buy/sell behavior under different sentiment conditions.
- Visualized key patterns using charts.

## **Key Findings**

- Traders tend to take larger positions during Greed periods, indicating higher risk appetite.
- Increased risk-taking during Greed does not always result in higher profitability.
- Fear periods show smaller trade sizes and more controlled trading behavior.
- Buy-side activity is more dominant during Greed sentiment.

## **Conclusion**

Market sentiment has a clear influence on trader behavior and risk exposure. Understanding sentiment-driven patterns can help design better trading strategies and improve risk management in volatile markets.