

# Trader Behavior vs Market Sentiment Analysis

## Introduction

This report analyzes the relationship between trader behavior and overall Bitcoin market sentiment. By combining historical trader data from Hyperliquid with the Bitcoin Fear & Greed Index, we explore how profitability, leverage, and risk-taking behavior change under different market conditions.

## Datasets Used

1. Bitcoin Market Sentiment Dataset: Contains daily sentiment classification labeled as Fear or Greed.
2. Historical Trader Data (Hyperliquid): Includes trade-level data such as execution price, size, leverage, and closed profit or loss.

## Methodology

The datasets were cleaned and preprocessed by handling missing values and converting timestamps into a consistent date format. Trader data was merged with sentiment data based on the trading date. Key features such as profit and trade volume were derived for analysis.

## Analysis & Findings

Exploratory data analysis revealed clear behavioral differences between Fear and Greed market phases. During Greed periods, traders generally exhibited higher median profits and increased leverage usage. In contrast, Fear periods showed higher volatility in profits, indicating elevated risk and uncertainty.

## Conclusion

Market sentiment plays a significant role in shaping trader behavior. Greed-driven markets tend to encourage higher leverage and profitability, while Fear-driven markets are associated with increased risk and inconsistent returns. These insights can help traders design sentiment-aware strategies to improve decision-making.