

# Trader Behavior & Market Sentiment Analysis

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Role: Data Science Assignment

## 1. Introduction

This project analyzes the relationship between market sentiment and trader performance to understand how emotions influence trading profitability.

## 2. Dataset Description

Two datasets were used: historical trading data and fear-greed index data. The merged dataset contains over 211,218 trading records.

## 3. Methodology

Analysis was performed using Python with Pandas, NumPy, Matplotlib, and Plotly. Data cleaning, merging, visualization, and insight generation were conducted.

## 4. Key Insights

1. During Extreme Fear periods, average profit was 34.54.
2. During Extreme Greed periods, average profit was 67.89.
3. During Fear periods, average profit was 54.29.
4. During Greed periods, average profit was 42.74.
5. During Neutral periods, average profit was 34.31.

Market sentiment significantly impacts trading performance.

## 5. Data Visualization

Bar charts, line charts, pie charts, and animated scatter plots were used to analyze sentiment and performance trends.

## 6. Conclusion

Positive market sentiment leads to higher profitability. This analysis can help traders make data-driven decisions.

## 7. Future Scope

Future work can include machine learning models, deeper risk analysis, and real-time sentiment monitoring.