Trader Sentiment Analysis Report

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1. Introduction

This report explores the relationship between trader behavior and market sentiment using two datasets: Bitcoin Market Sentiment and Historical Trader Data. The objective is to uncover patterns and insights that can support smarter trading strategies.

2. Data Overview

The analysis combines:

- A market sentiment dataset indicating daily sentiment (e.g., Fear, Greed).

- A trader dataset with account-level trade details such as side, leverage, PnL, and more.

3. Methodology

Data was cleaned and merged using the date column to align trades with corresponding market sentiment classifications. Exploratory Data Analysis (EDA) was then conducted using Python libraries such as pandas, matplotlib, and seaborn.

4. Key Insights

- Trades during 'Greed' and 'Extreme Greed' showed higher average profits.

- Higher leverage usage was observed during fearful market conditions.

- 'SELL' orders outperformed 'BUY' orders significantly during greed phases.

- Boxplots and heatmaps confirmed substantial variance in PnL across sentiment types.

5. Visualizations Summary

The following visualizations were created and saved in the outputs folder:

- Boxplot: PnL Distribution by Sentiment

- Bar Chart: Average PnL by Side and Sentiment

- Heatmap: Avg PnL by Side across Sentiment Classes

- Colored Bar Chart: Average PnL with Sentiment-based colors

6. Conclusion

Trader behavior is clearly influenced by market sentiment. Greedy markets are associated with higher leverage and profitability, while fear causes reduced performance. These insights can guide the development of sentiment-aware trading strategies.