

Trader Behavior Analytics – Analysis Summary

Methodology

The analysis was conducted to understand how market sentiment influences trader performance and behavior. Two datasets containing trading activity and sentiment classification were prepared and analyzed using Python.

- 1. Data Preparation:** Loaded and cleaned trading and sentiment datasets, converted timestamps to daily format, removed missing values and duplicates, and merged datasets based on date to associate trades with market sentiment.
- 2. Feature Engineering:** Created key metrics including daily Profit & Loss (PnL), win rate, trade frequency, average trade size, and long vs short trade ratio.
- 3. Exploratory Analysis:** Compared trader performance during Fear and Greed market conditions and evaluated behavioral changes using aggregated statistics and visualizations.
- 4. Visualization:** Built an interactive dashboard using Streamlit with bar, line, and pie charts for dynamic exploration.

Key Insights

- Trader performance varies with sentiment, indicating market psychology impacts profitability.
- Trade frequency and outcomes change depending on Fear or Greed conditions, suggesting behavioral reactions to sentiment.
- Win rate differences appear across sentiment phases, showing variations in trading consistency.
- A small group of traders contributes disproportionately to profits, highlighting performance segmentation.

Strategy Recommendations

- 1. Sentiment-Aware Trading:** Incorporate sentiment indicators to adjust exposure during extreme market conditions.
- 2. Risk Management During Greed Phases:** Apply stricter position sizing rules to reduce overtrading risks.
- 3. Behavior-Based Segmentation:** Identify consistent and volatile traders to personalize strategies and improve portfolio management.
- 4. Data-Driven Monitoring:** Use dashboards for continuous tracking of trader behavior and performance trends.