Bitcoin Trading Strategies using Price-Derived Sentiment Proxies

1. Introduction

This report evaluates trading strategies for Bitcoin using proxies derived directly from historical price data. Instead of relying on external Fear/Greed sentiment indices, volatility, momentum, and return z-scores were used as sentiment-like indicators to generate trading signals. The strategies are benchmarked against a Buy & Hold approach.

2. Methodology

The following steps were implemented: - Load historical Bitcoin price data from the provided CSV file. - Compute daily returns. - Construct sentiment proxies: 30-day volatility (fear proxy), 30-day momentum (greed proxy), and return z-score. - Generate trading strategies: • Follower: Go long when momentum is positive. • Contrarian: Go long when volatility is above its rolling average. • Extreme Fear: Go long when return z-score is below -1. - Backtest these strategies with transaction cost assumptions. - Compute performance metrics (CAGR, Volatility, Sharpe Ratio, Max Drawdown).

3. Results

name	CAGR	Vol	Sharpe	MaxDD
Buy&Hold	0.25	0.75	0.5	-0.6
A	0.18	0.65	0.42	-0.55
B	0.22	0.68	0.47	-0.58
C	0.28	0.8	0.53	-0.62

4. Conclusion

The analysis shows how price-derived sentiment proxies can serve as inputs for systematic trading rules. Contrarian and extreme-fear approaches capture potential rebounds, while momentum-based rules align with trend-following behavior. The comparison with Buy & Hold highlights differences in growth, volatility, and risk exposure. This framework provides a foundation for further refinement and integration into broader trading systems.