The report below outlines a multi-factor model developed to predict cryptocurrency prices by integrating market data, sentiment analysis, and macroeconomic indicators. The work is part of the Ocean Protocol competition hosted on Desights. Data was collected from sources including Binance, Yahoo Finance, CoinMarketCap, Google Trends, and macroeconomic databases like the World Bank and FRED.

Data Collection and Preparation:

The dataset includes over 1 million rows of OHLCV data for 1,439 unique cryptocurrency symbols. Supplementary data was gathered on market sentiment through the Fear & Greed Index, coin fundamentals, and Google search trends. Macroeconomic factors such as inflation, GDP, and interest rates were also incorporated.

Feature Engineering:

Features were created from the collected data, including moving averages, liquidity factors, sentiment buckets, and macroeconomic trends. These features were used to train LGBMRegressor models, with the best model achieving an R-squared of 0.645, indicating a reasonable level of predictive accuracy.

Key Findings:

1. Sentiment Indicators:

The Fear & Greed Index showed strong correlations with price trends, with values exceeding 0.94.

1. Macroeconomic Influence:

While valuable, macroeconomic features had a lesser impact compared to sentiment and market data.

1. Trading Volume Correlation:

High trading volumes were consistently aligned with price increases, indicating strong market interest.

Conclusion:

This work is ongoing, with further model development and data preparation planned. Suggestions from the Numerai community are highly valued to improve the model's accuracy and robustness.

For a detailed methodology and results, the full report is availablehere.

Additional details and the code can be found in theGitHub repository.