## Strategy Description

Weekly statistical arbitrage strategy. PCA is performed on the returns of selected assets (selected by volume) over the past 10 trading days and 2 components are retrieved as factors. Assets are individually regressed against these factors and their residuals are taken to compute Z-scores. Before computing the Z-scores, a Kalman filter is applied to reduce noise in the residuals. A signal is generated when the absolute value of these noise-reduced Z-scores (with RSI and MACD adjustments for market robustness) exceed a threshold. The EGARCH(1,1) model is used to track the current conditional volatility of the universe and serves to alter the Z-score threshold dynamically within a sigmoid function. Market regimes are detected with a KNN model to ensure reversion trades are not placed in trending conditions.
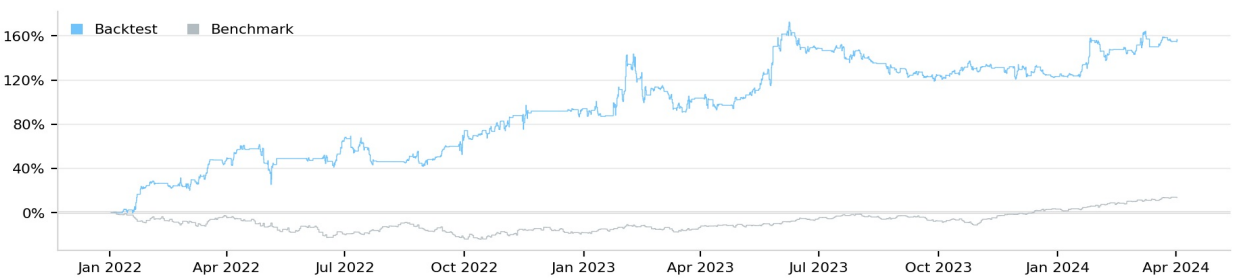
Key Statistics

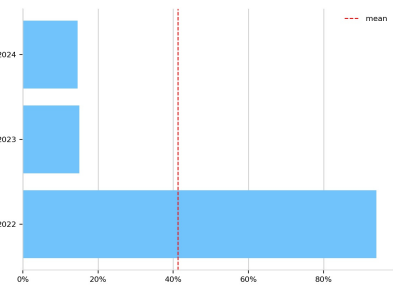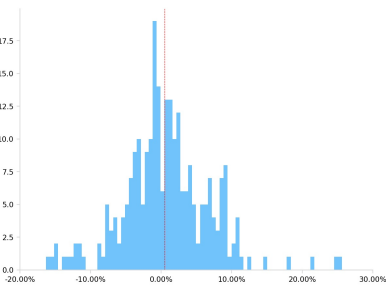|			
Runtime Days	821	Drawdown	22.3%
Turnover	18%	Probabilistic SR	64%
CAGR	51.7%	Sharpe Ratio	1.3
Capacity (USD)	53M	Sortino Ratio	1.5
Trades per Day	0.5	Information Ratio	1.1

Monthly Returns
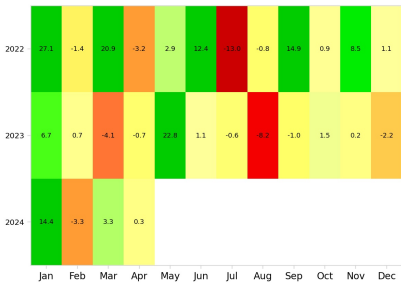
Cumulative Returns
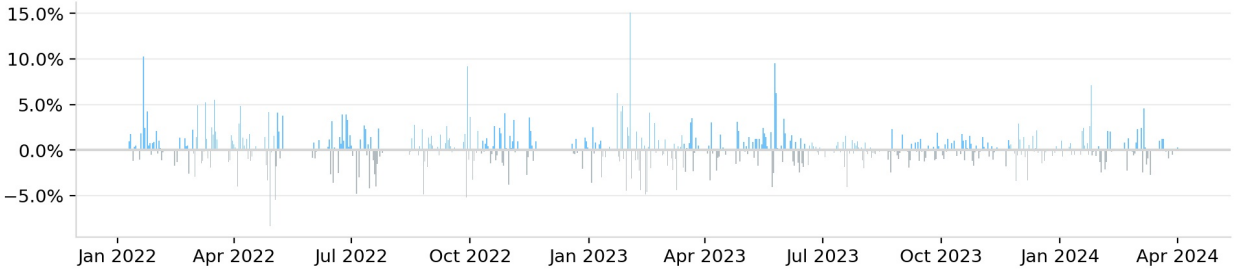

Annual Returns

Returns Per Trade
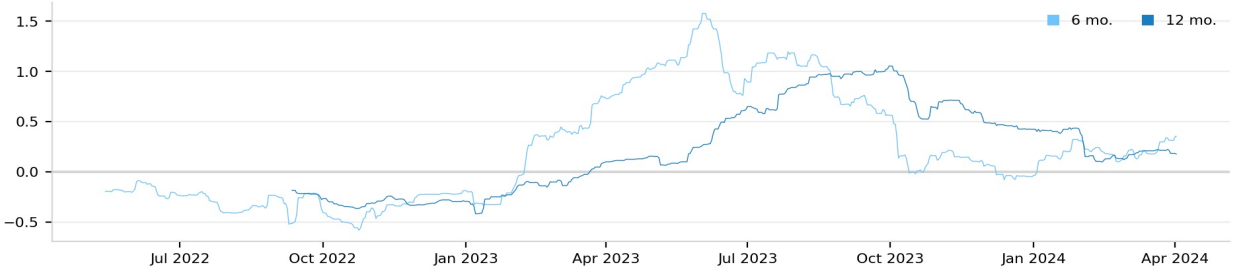

Asset Allocation
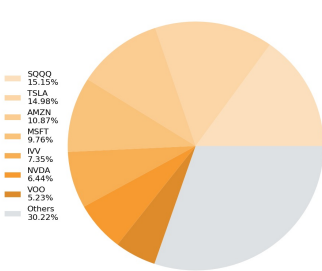
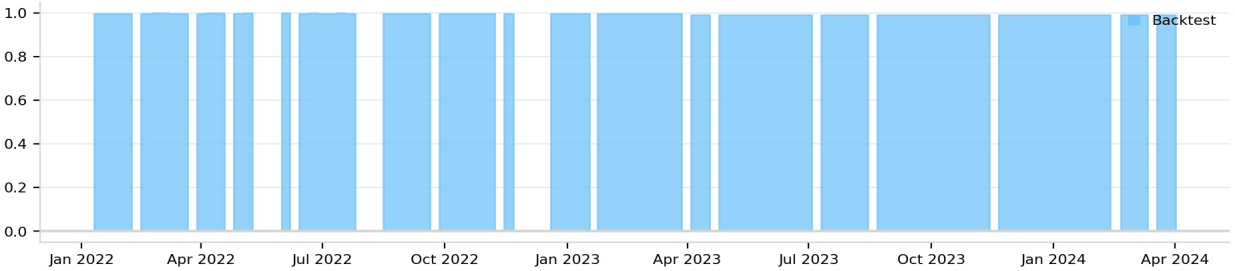## Drawdown
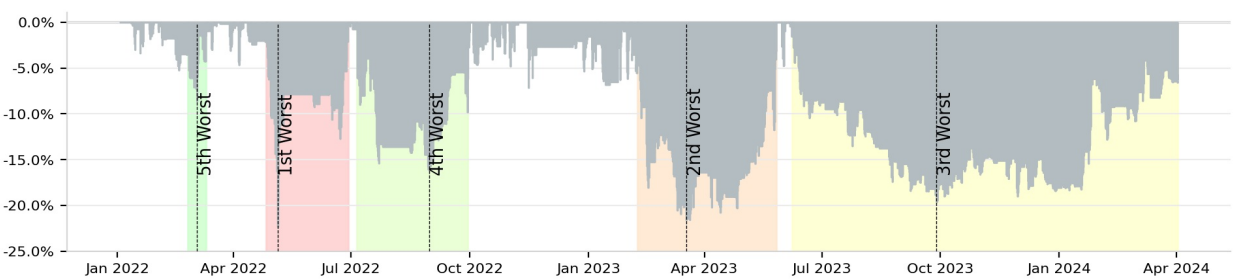
Daily Returns

Rolling Portfolio Beta

Rolling Sharpe Ratio

Leverage

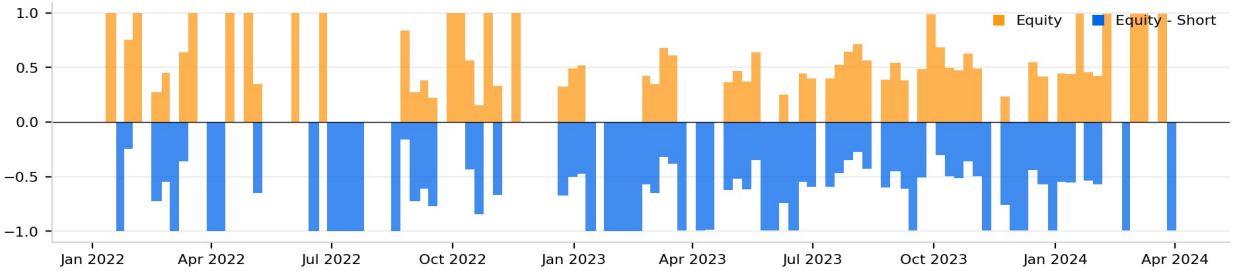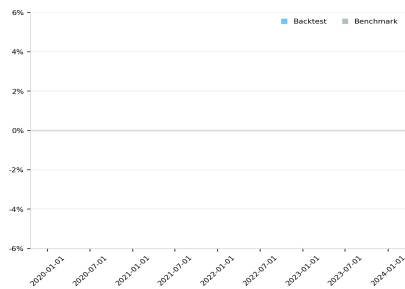## Long-Short Exposure

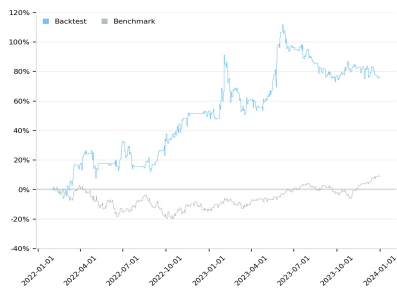## Post-COVID Run-up 2020-2021

Russia Invades Ukraine 2022-2023

AI Boom 2022-Present