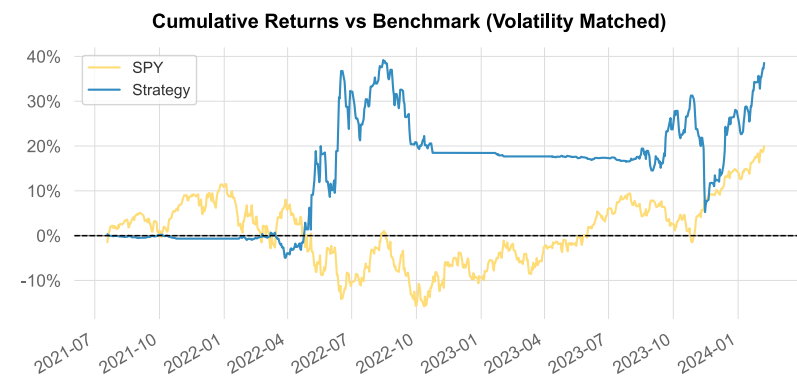
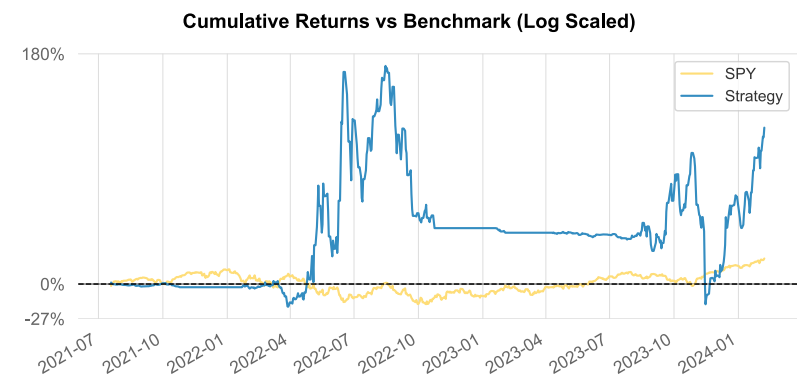
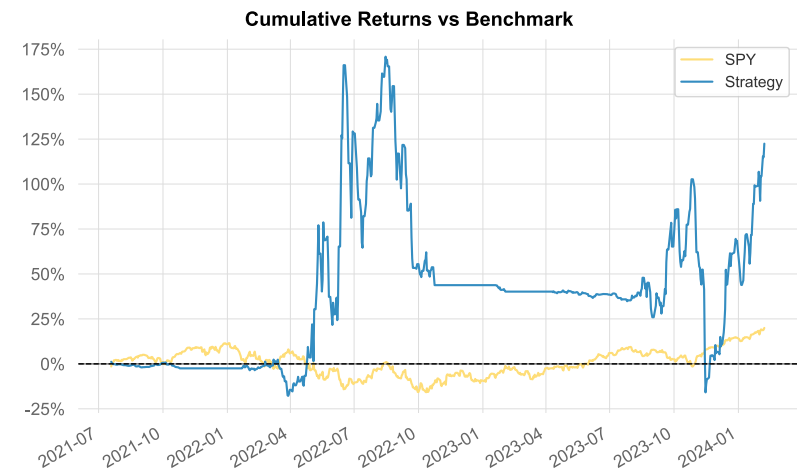


MLTrader Compared to SPY

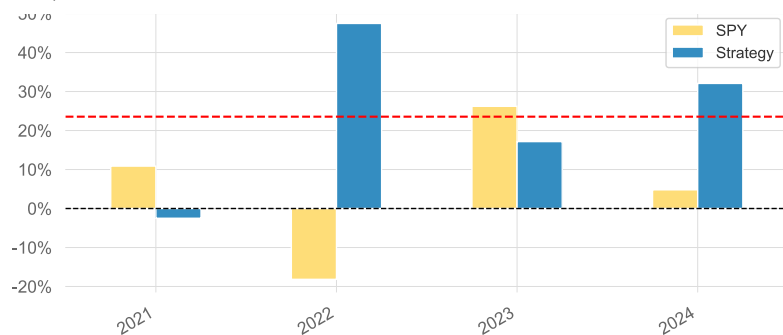
19 Jul, 2021 - 7 Feb, 2024

Benchmark is SPY | Generated by [QuantStats](#) (v. 0.0.62)

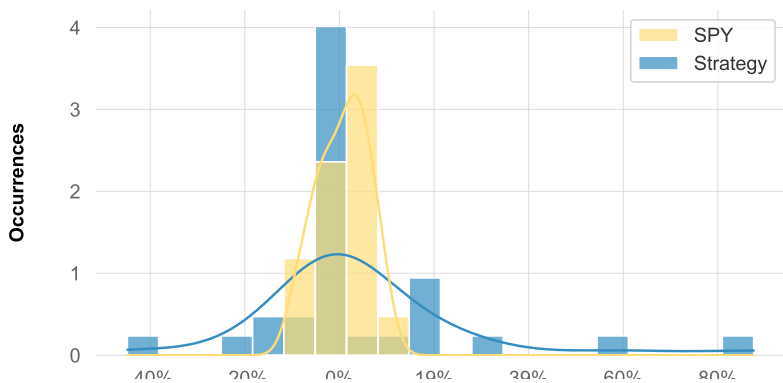


Key Performance Metrics

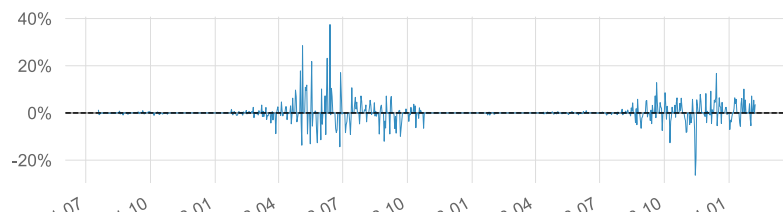
Metric	SPY	Strategy
Risk-Free Rate	5.22%	5.22%
Time in Market	83.0%	53.0%
Cumulative Return	20.01%	122.48%
CAGR %	5.05%	24.11%
Sharpe	0.13	0.64
Prob. Sharpe Ratio	24.68%	42.06%
Smart Sharpe	0.12	0.59
Sortino	0.18	1.03
Smart Sortino	0.17	0.96
Sortino/√2	0.13	0.73
Smart Sortino/√2	0.12	0.68
Omega	1.21	1.21
Max Drawdown	-24.49%	-68.94%
Longest DD Days	708	541
Volatility (ann.)	16.52%	61.33%
R^2	0.05	0.05
Information Ratio	0.03	0.03
Calmar	0.21	0.35
Skew	-0.11	1.7
Kurtosis	2.53	22.98
Expected Daily	0.02%	0.1%
Expected Monthly	0.57%	2.53%
Expected Yearly	4.66%	22.13%
Kelly Criterion	9.43%	1.39%
Risk of Ruin	0.0%	0.0%
Daily Value-at-Risk	-1.68%	-6.18%
Expected Shortfall (cVaR)	-1.68%	-6.18%
Max Consecutive Wins	5	5



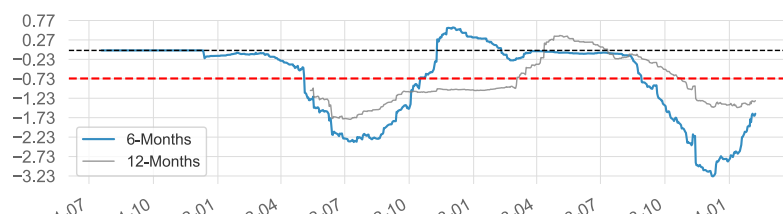
Distribution of Monthly Returns



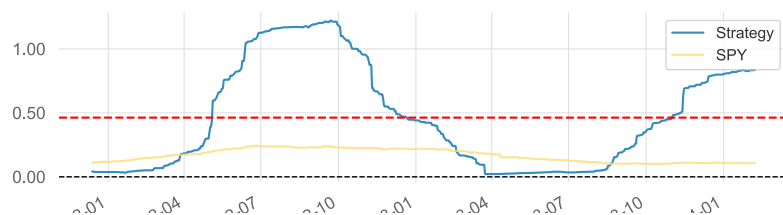
Daily Active Returns



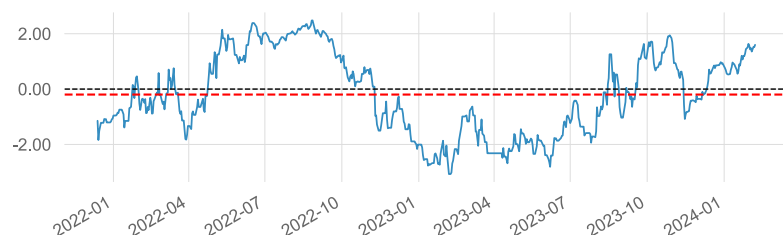
Rolling Beta to Benchmark



Rolling Volatility (6-Months)



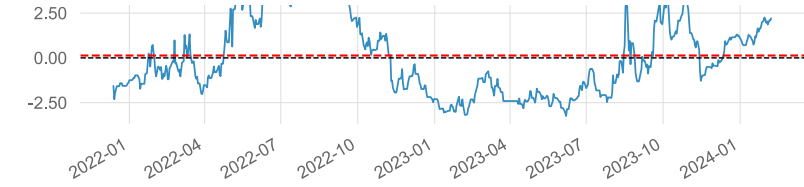
Rolling Sharpe (6-Months)



Rolling Sortino (6-Months)

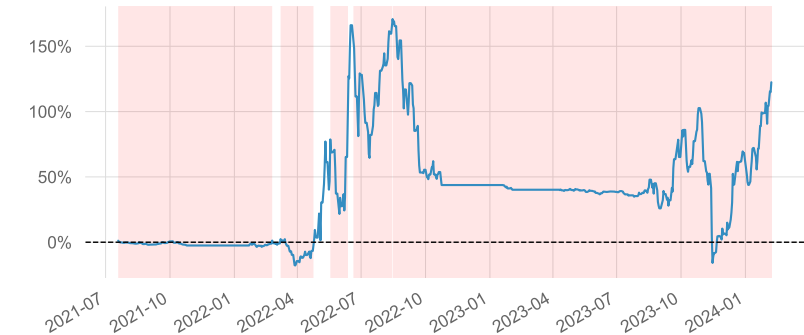


Metric	SPY	Strategy
Max Consecutive Losses	4	4
Gain/Pain Ratio	0.09	0.25
Gain/Pain (1M)	0.37	1.1
Payoff Ratio	1.13	1.03
Profit Factor	1.09	1.25
Common Sense Ratio	1.16	1.48
CPC Index	0.64	0.64
Tail Ratio	1.07	1.18
Outlier Win Ratio	12.06	6.12
Outlier Loss Ratio	8.47	2.7
MTD	3.15%	10.39%
3M	14.79%	44.32%
6M	12.34%	62.55%
YTD	4.79%	32.08%
1Y	23.42%	58.71%
3Y (ann.)	5.05%	24.11%
5Y (ann.)	5.05%	24.11%
10Y (ann.)	5.05%	24.11%
All-time (ann.)	5.05%	24.11%
Best Day	5.5%	37.46%
Worst Day	-4.35%	-26.38%
Best Month	9.21%	87.57%
Worst Month	-9.24%	-44.82%
Best Year	26.21%	47.46%
Worst Year	-18.16%	-2.5%
Avg. Drawdown	-2.22%	-21.04%
Avg. Drawdown Days	39	91
Recovery Factor	0.92	1.98
Ulcer Index	0.11	0.35
Serenity Index	0.08	0.23
Avg. Up Month	3.75%	21.59%
Avg. Down Month	-4.36%	-10.9%
Win Days	51.87%	49.88%
Win Month	59.38%	44.44%



Metric	SPY	Strategy
Win Quarter	54.55%	45.45%
Win Year	75.0%	75.0%
Beta	-	-0.82
Alpha	-	0.5
Correlation	-	-21.99%
Treynor Ratio	-	-143.62%

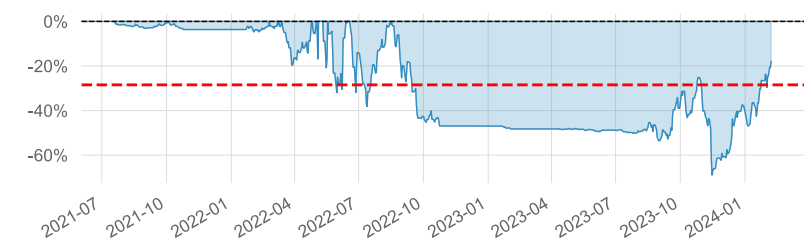
Strategy - Worst 5 Drawdown Periods



EOY Returns vs Benchmark

Year	SPY	Strategy	Multiplier	Won
2021	10.87%	-2.50%	-0.23	-
2022	-18.16%	47.46%	-2.61	+
2023	26.21%	17.16%	0.65	-
2024	4.79%	32.08%	6.69	+

Underwater Plot



Worst 10 Drawdowns

Started	Recovered	Drawdown	Days
2022-08-16	2024-02-07	-68.94%	541
2022-06-21	2022-08-13	-38.16%	54
2022-05-19	2022-06-11	-31.94%	24
2022-05-12	2022-05-17	-20.83%	6
2022-03-09	2022-04-23	-19.69%	46
2022-05-03	2022-05-04	-16.81%	2
2022-04-27	2022-04-30	-5.38%	4
2021-07-20	2022-02-23	-4.72%	219
2022-02-25	2022-03-07	-3.18%	11
2022-06-14	2022-06-14	-0.77%	1

2021	0.00	0.00	0.00	0.00	0.00	0.00	-1.88	-4.66	7.18	-10.08	0.80	-4.63
2022	5.76	3.98	-17.31	29.79	17.25	95.82	-7.84	-8.39	-13.96	-15.65	-5.56	5.75
2023	-7.80	1.51	-3.72	-1.75	-1.27	-6.70	-5.61	-5.30	35.94	18.34	-53.96	54.49
2024	18.06	7.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Strategy - Return Quantiles

