Experiment 3a439465-6537-4bdf-a62f-6fba32670af7.

Full tear sheet

Live testing was started at 2017-01-01 where SPY was our benchmark and expected return of the market. Using this strategy, the capital at the end of the investment period were 66.15.

Start date			2014-01-02
End date			2017-12-29
In-sample months			36
Out-of-sample months			11
	In-sample	**Out-of-sample**	**All**
Annual return	-0.01%	0.096%	0.017%
Cumulative returns	-0.029%	0.095%	0.066%
Annual volatility	0.277%	0.194%	0.259%
Sharpe ratio	-0.03	0.49	0.07
Calmar ratio	-0.02	0.64	0.03
Stability	0.54	0.06	0.37
Max drawdown	-0.594%	-0.149%	-0.594%
Omega ratio	0.99	1.13	1.02
Sortino ratio	-0.05	0.86	0.10
Skew	0.86	1.54	0.94
Kurtosis	10.90	11.58	11.83
Tail ratio	0.92	1.58	1.02
Daily value at risk	-0.035%	-0.024%	-0.033%
Gross leverage	0.02	0.02	0.02
Daily turnover	50.15%	49.902%	49.989%
Alpha	-0.00	-0.00	-0.00
Beta	0.01	0.01	0.01

Worst drawdown periods	Net drawdown in %	Peak date	Valley date	Recovery date	Duration
0	0.59	2015-02-23	2016-09-09	NaT	NaN
1	0.24	2014-02-10	2014-05-16	2014-06-09	86
2	0.13	2014-08-29	2014-10-16	2014-11-24	62
3	0.07	2015-01-08	2015-01-28	2015-02-12	26
4	0.06	2014-01-27	2014-01-30	2014-02-04	7

Stress Events	mean	min	max
Apr14	-0.01%	-0.07%	0.06%
Oct14	0.00%	-0.02%	0.03%
Fall2015	-0.00%	-0.07%	0.05%
New Normal	0.00%	-0.09%	0.10%

Summary stats	All trades	Short trades	Long trades
Total number of round_trips	503.00	449.00	54.00
Percent profitable	0.42	0.40	0.54
Winning round_trips	209.00	180.00	29.00
Losing round_trips	294.00	269.00	25.00
Even round_trips	0.00	0.00	0.00

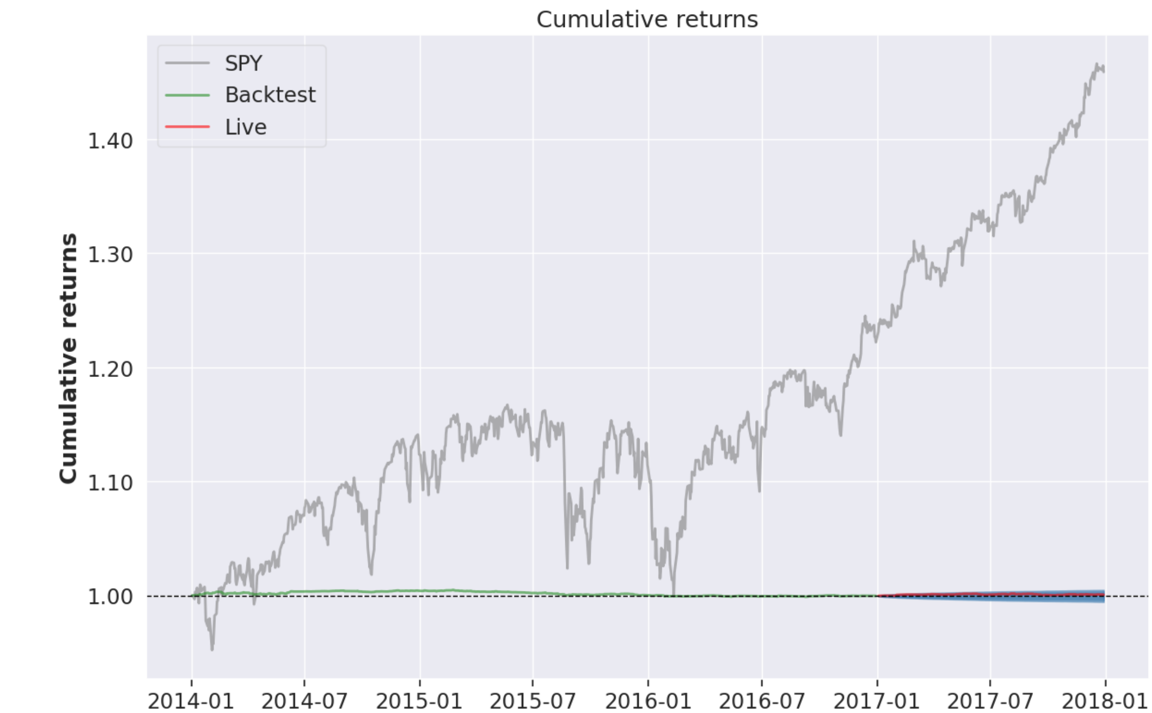
PnL stats	All trades	Short trades	Long trades
Total profit	$-10296.84	$-5043.46	$-5253.38
Gross profit	$8305.53	$7124.75	$1180.78
Gross loss	$-18602.37	$-12168.21	$-6434.16
Profit factor	$0.45	$0.59	$0.18
Avg. trade net profit	$-20.47	$-11.23	$-97.28
Avg. winning trade	$39.74	$39.58	$40.72
Avg. losing trade	$-63.27	$-45.23	$-257.37
Ratio Avg. Win:Avg. Loss	$0.63	$0.88	$0.16
Largest winning trade	$182.57	$182.57	$101.19
Largest losing trade	$-5522.40	$-189.46	$-5522.40

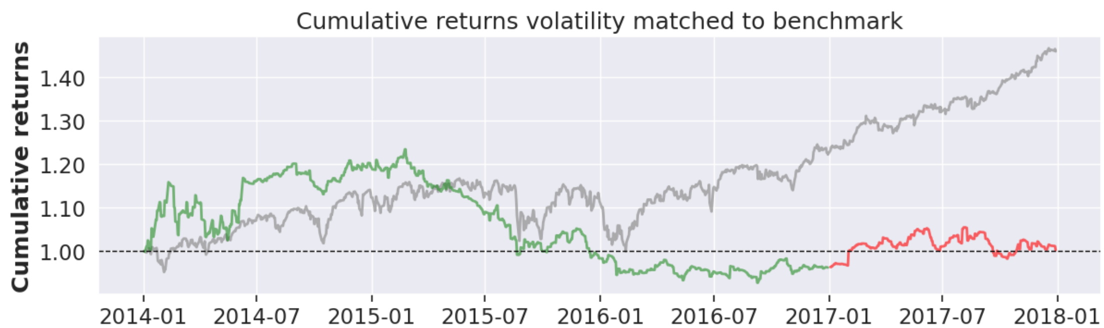
Duration stats	All trades	Short trades	Long trades
Avg duration	14 days 06:55:06.560636183	15 days 19:53:03.073496659	1 days 11:33:20
Median duration	15 days 00:00:00	15 days 01:00:00	1 days 00:00:00
Longest duration	19 days 00:00:00	19 days 00:00:00	4 days 00:00:00
Shortest duration	1 days 00:00:00	1 days 00:00:00	1 days 00:00:00

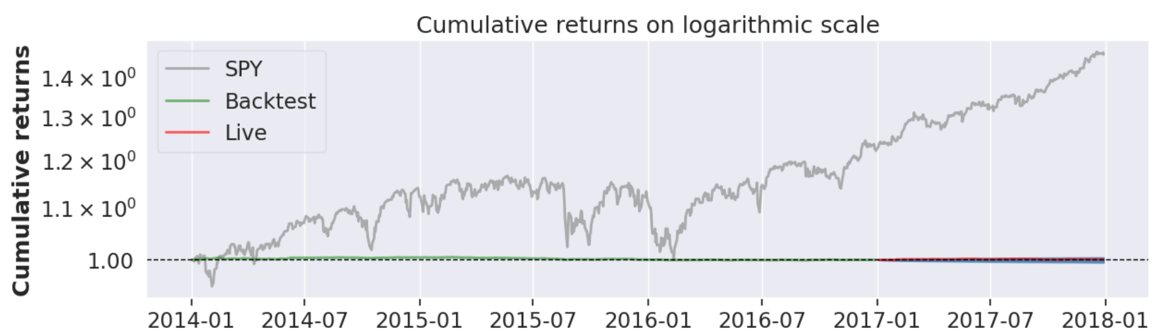
Return stats	All trades	Short trades	Long trades
Avg returns all round_trips	-0.01%	-0.01%	NaN
Avg returns winning	0.04%	0.04%	NaN
Avg returns losing	-0.04%	-0.04%	NaN
Median returns all round_trips	-0.01%	-0.01%	NaN
Median returns winning	0.03%	0.03%	NaN
Median returns losing	-0.04%	-0.04%	NaN
Largest winning trade	0.18%	0.18%	NaN
Largest losing trade	-0.18%	-0.18%	NaN

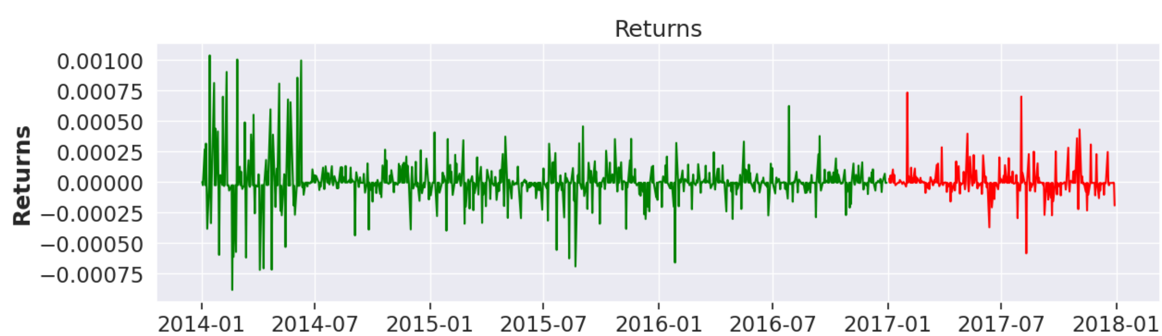
Symbol stats	AAPL
Avg returns all round_trips	-0.01%
Avg returns winning	0.04%
Avg returns losing	-0.04%
Median returns all round_trips	-0.01%
Median returns winning	0.03%
Median returns losing	-0.04%
Largest winning trade	0.18%
Largest losing trade	-0.18%

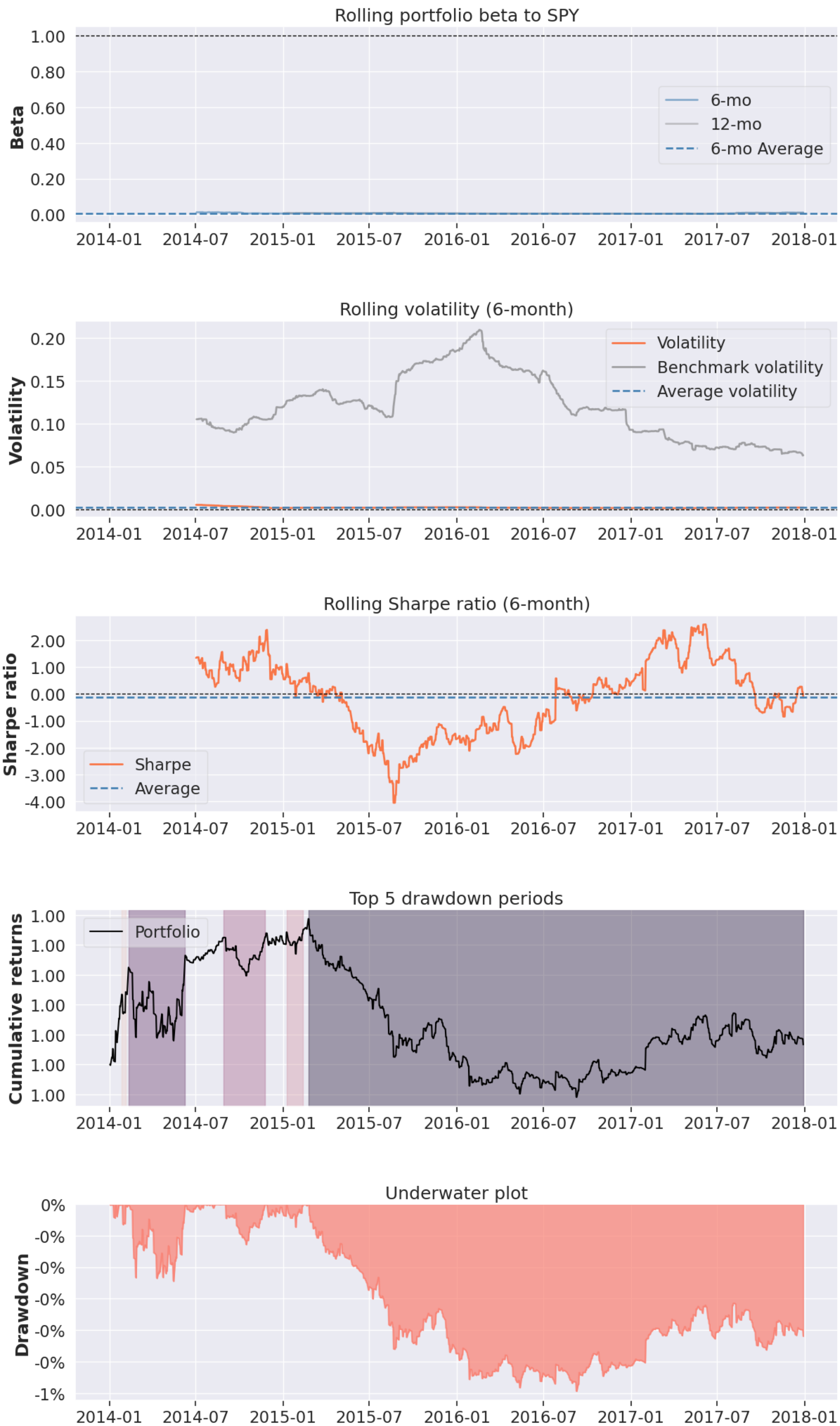
Profitability (PnL / PnL total) per name	
symbol	
AAPL	100.00%

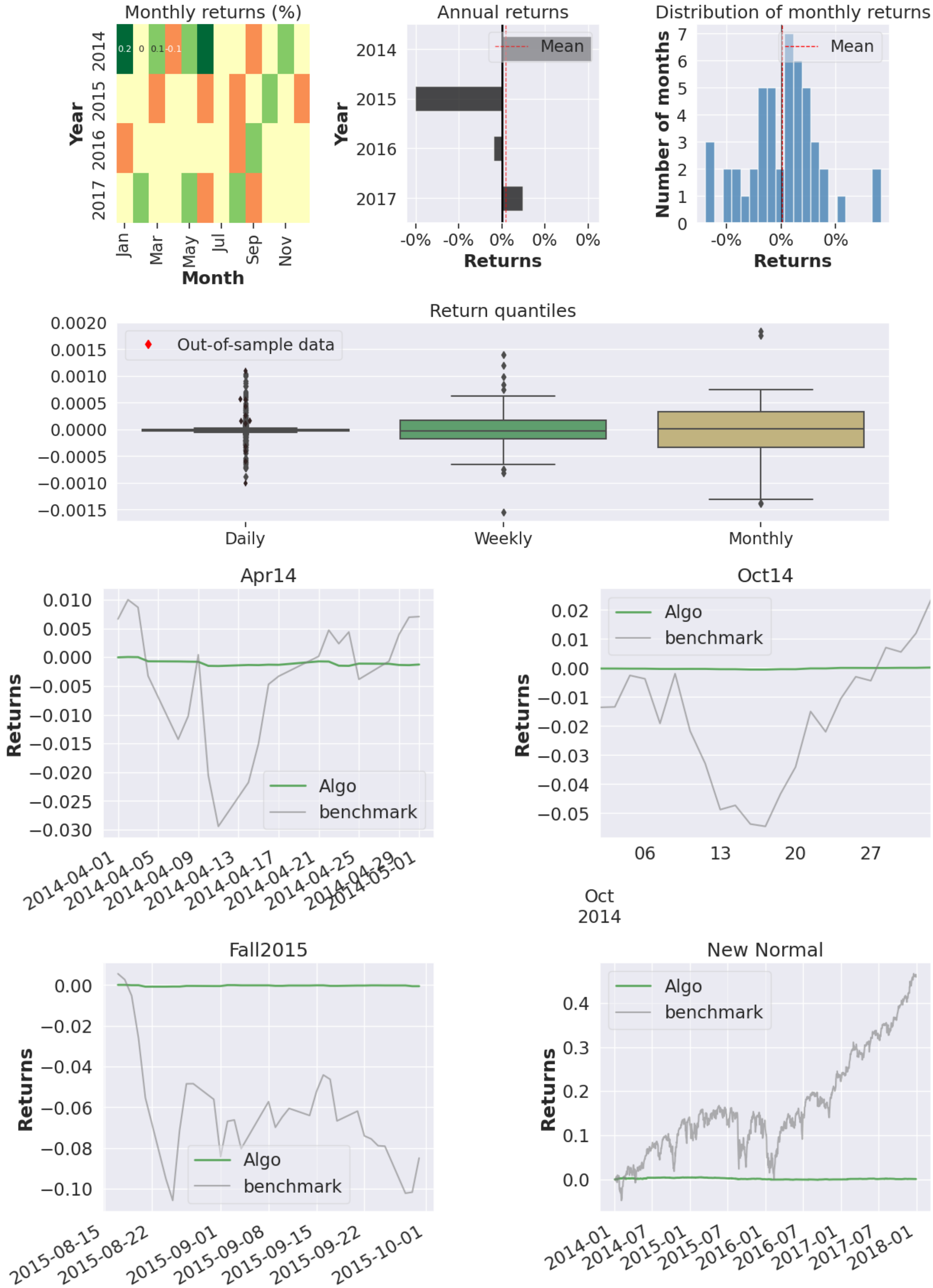

Cumulative returns
SPY
Backtest
Live
Cumulative returns
1.40
1.30
1.20
1.10
1.00
2014-01
2014-07
2015-01
2015-07
2016-01
2016-07
2017-01
2017-07
2018-01


Cumulative returns volatility matched to benchmark
Cumulative returns
1.40
1.30
1.20
1.10
1.00
2014-01
2014-07
2015-01
2015-07
2016-01
2016-07
2017-01
2017-07
2018-01

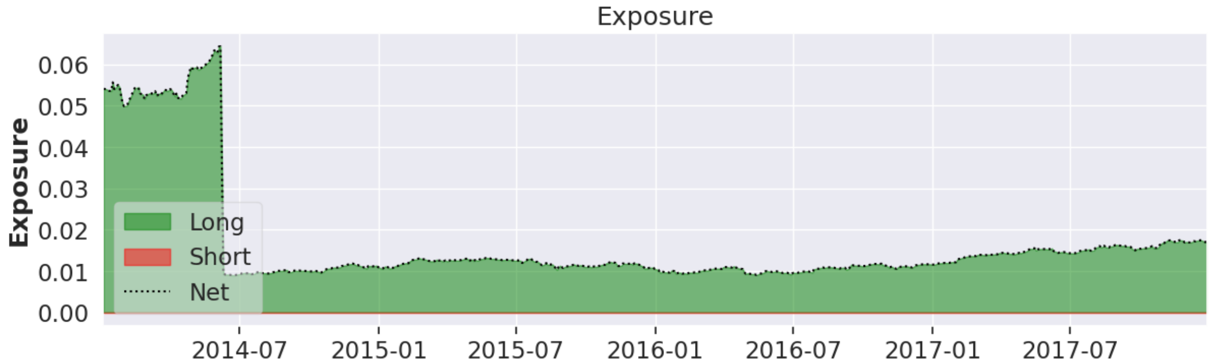

Cumulative returns on logarithmic scale
SPY
Backtest
Live
Cumulative returns
1.4×10^0
1.3×10^0
1.2×10^0
1.1×10^0
1.00
2014-01
2014-07
2015-01
2015-07
2016-01
2016-07
2017-01
2017-07
2018-01

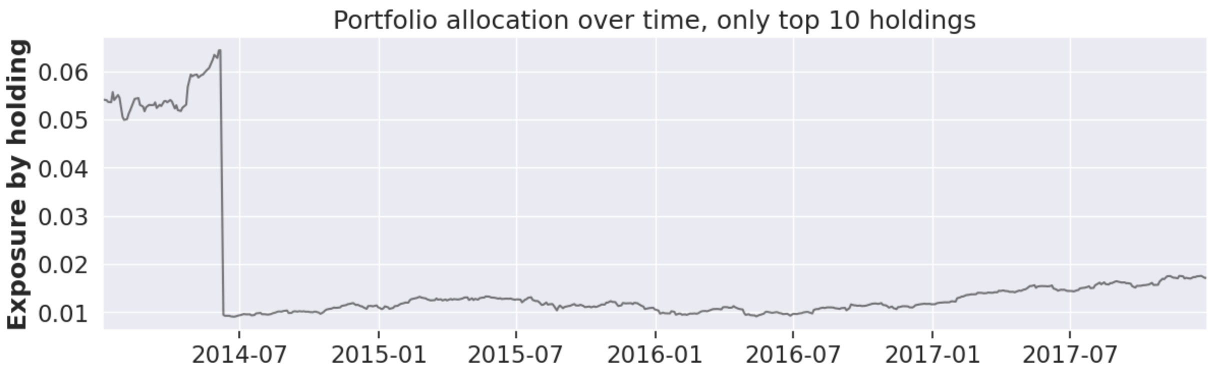

Returns
Returns
0.00100
0.00075
0.00050
0.00025
0.00000
−0.00025
−0.00050
−0.00075
2014-01
2014-07
2015-01
2015-07
2016-01
2016-07
2017-01
2017-07
2018-01

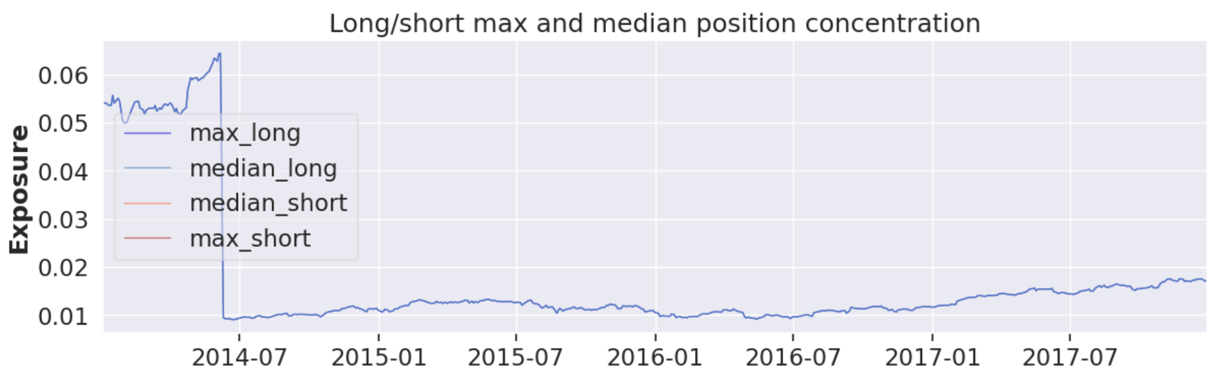

Rolling portfolio beta to SPY
Beta
1.00
0.80
0.60
0.40
0.20
0.00
6-mo
12-mo
6-mo Average
2014-01 2014-07 2015-01 2015-07 2016-01 2016-07 2017-01 2017-07 2018-01
Rolling volatility (6-month)
Volatility
0.20
0.15
0.10
0.05
0.00
Volatility
Benchmark volatility
Average volatility
2014-01 2014-07 2015-01 2015-07 2016-01 2016-07 2017-01 2017-07 2018-01
Rolling Sharpe ratio (6-month)
Sharpe ratio
2.00
1.00
0.00
-1.00
-2.00
-3.00
-4.00
Sharpe
Average
2014-01 2014-07 2015-01 2015-07 2016-01 2016-07 2017-01 2017-07 2018-01
Top 5 drawdown periods
Cumulative returns
1.00
1.00
1.00
1.00
1.00
1.00
1.00
Portfolio
2014-01 2014-07 2015-01 2015-07 2016-01 2016-07 2017-01 2017-07 2018-01
Underwater plot
Drawdown
0%
-0%
-0%
-0%
-0%
-0%
-1%
2014-01 2014-07 2015-01 2015-07 2016-01 2016-07 2017-01 2017-07 2018-01

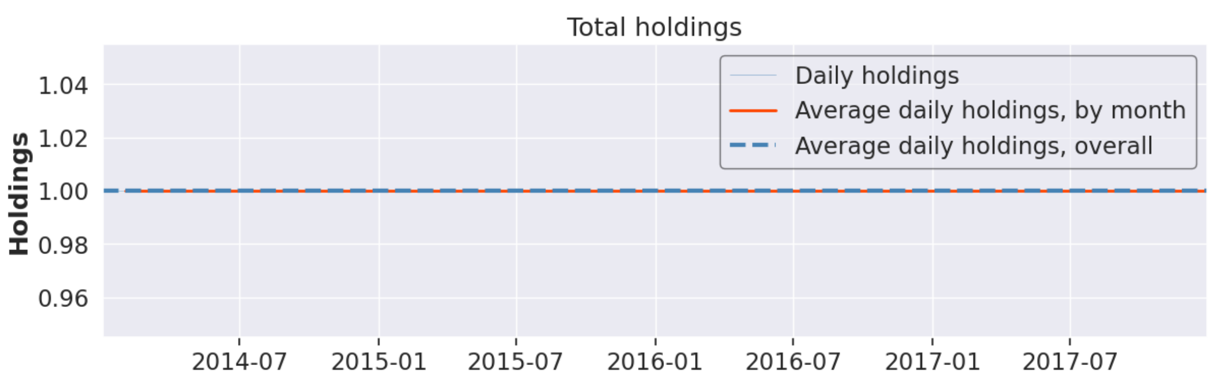


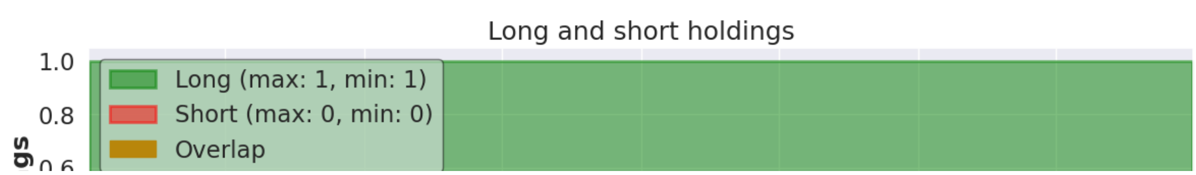
Monthly returns (%)
Year
Month
Annual returns
Mean
Returns
Distribution of monthly returns
Number of months
Return quantiles
Out-of-sample data
Daily
Weekly
Monthly
Apr14
Algo
benchmark
Returns
Oct14
Oct
2014
Fall2015
New Normal

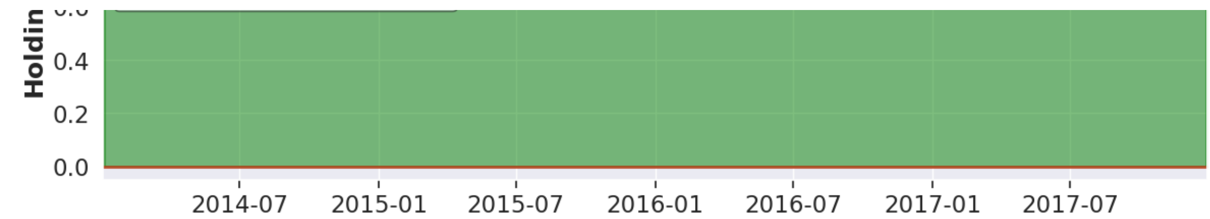

Exposure
Exposure
0.06
0.05
0.04
0.03
0.02
0.01
0.00
Long
Short
Net
2014-07
2015-01
2015-07
2016-01
2016-07
2017-01
2017-07


Portfolio allocation over time, only top 10 holdings
Exposure by holding
0.06
0.05
0.04
0.03
0.02
0.01
2014-07
2015-01
2015-07
2016-01
2016-07
2017-01
2017-07


Long/short max and median position concentration
Exposure
0.06
0.05
0.04
0.03
0.02
0.01
max_long
median_long
median_short
max_short
2014-07
2015-01
2015-07
2016-01
2016-07
2017-01
2017-07

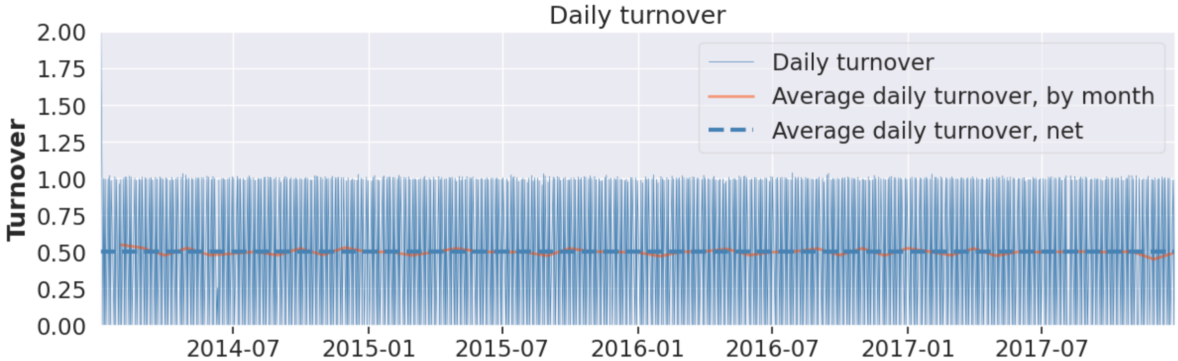

Total holdings
Holdings
1.04
1.02
1.00
0.98
0.96
Daily holdings
Average daily holdings, by month
Average daily holdings, overall
2014-07
2015-01
2015-07
2016-01
2016-07
2017-01
2017-07

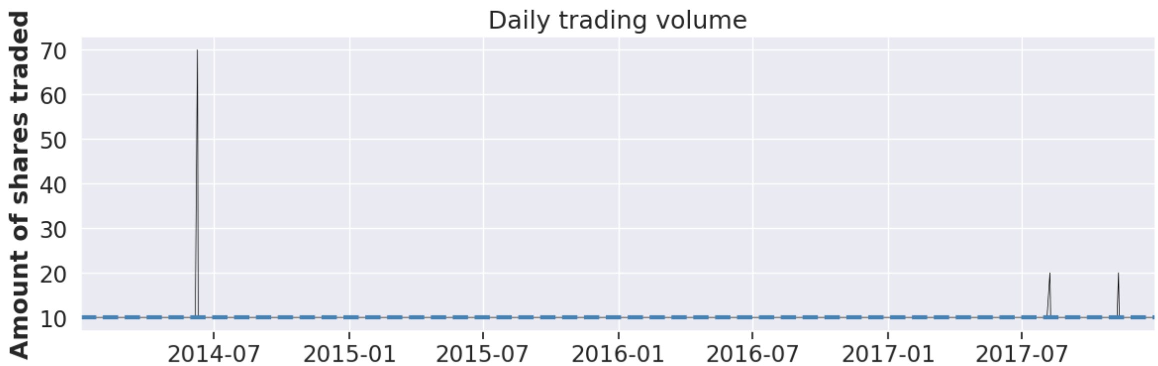

Long and short holdings
1.0
0.8
Long (max: 1, min: 1)
Short (max: 0, min: 0)
Overlap

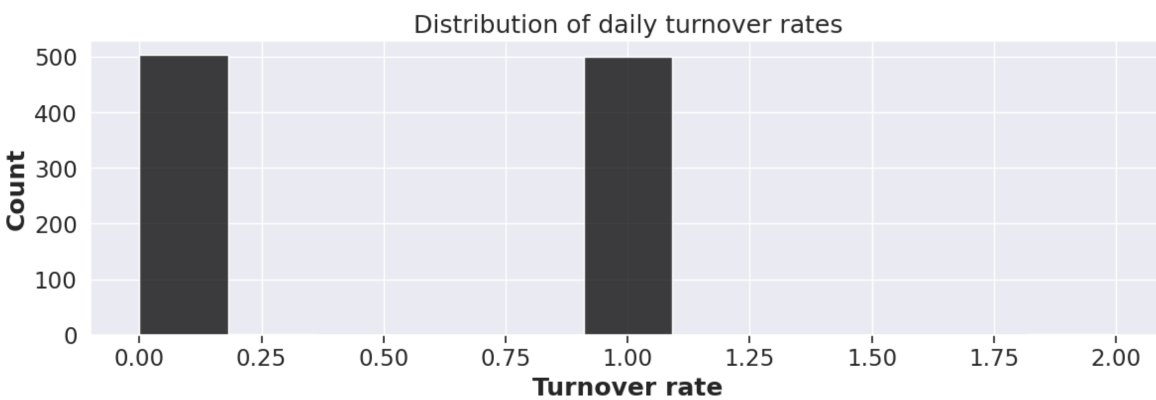


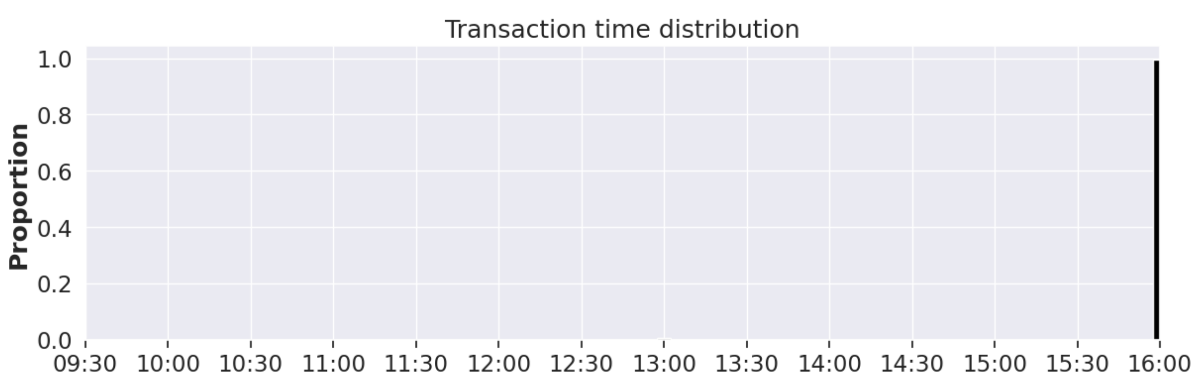
Holdin
0.4
0.2
0.0
2014-07
2015-01
2015-07
2016-01
2016-07
2017-01
2017-07

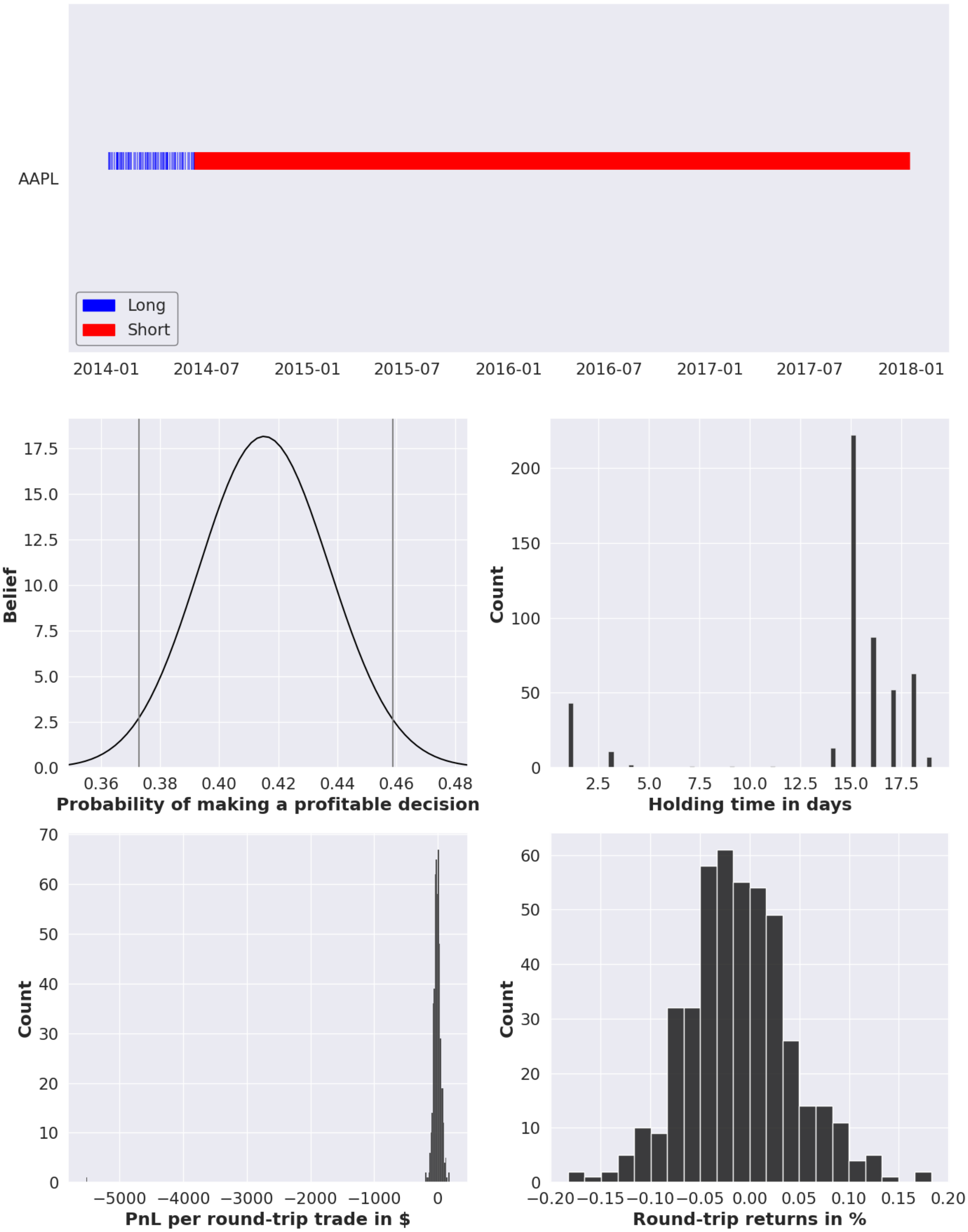
Gross leverage
Gross leverage
0.06
0.05
0.04
0.03
0.02
0.01
2014-07
2015-01
2015-07
2016-01
2016-07
2017-01
2017-07


Daily turnover
Turnover
Daily turnover
Average daily turnover, by month
Average daily turnover, net
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
2014-07
2015-01
2015-07
2016-01
2016-07
2017-01
2017-07


Daily trading volume
Amount of shares traded
70
60
50
40
30
20
10
2014-07
2015-01
2015-07
2016-01
2016-07
2017-01
2017-07


Distribution of daily turnover rates
Count
500
400
300
200
100
0
0.00
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
Turnover rate


Transaction time distribution
Proportion
1.0
0.8
0.6
0.4
0.2
0.0
09:30
10:00
10:30
11:00
11:30
12:00
12:30
13:00
13:30
14:00
14:30
15:00
15:30
16:00


AAPL
Long
Short
2014-01
2014-07
2015-01
2015-07
2016-01
2016-07
2017-01
2017-07
2018-01
Belief
Probability of making a profitable decision
Count
Holding time in days
Count
PnL per round-trip trade in $
Count
Round-trip returns in %