- 1. Daily basis: Annualized return, standard deviation, Sharpe ratio, Maximum Drawdown, Kelly ratio, VaR, SkewnessKurtosis ratio, etc.
- Trading signals and frequency related: total number of transactions, winning percentage, odds, expected earnings, total profit, total loss.

## Step 2: The ranking process

We first rank all the strategies by its performance indices calculating from its log-return, and then select top ranking strategies to enter into portfolio analysis.

1. cluster analysis

(helust pachage in R)
we cluster all the
performance indicies
and select one of the most
significant one in each
cluster as our ranking
standards.

(Annualized return, Sharpe ratio, Maximum Drawdown, Loss ratio) 2.PCA (Principle component analysis)

we grab the most important factor from the orthogonal basis corresponding to our performance index.

(Burke Ratio, Drawdown Deviation, expectation, continuous loss days)

- 3. create our own index based on different indicator ratio
- (1) 25% Burke Ratio + 25% Drawdown Deviation + 25% expectation + 25% continuous loss days
- (2) 50% Annualized return + 40% Sharpe ratio + 10% Maximum Drawdown
- (3) 75% Loss ratio + 15% Sharpe ratio + 10% Maximum drawdown

4. Rank regression

select the factor who has most significant coefficient, and use it as the ranking criteria ("prospect ratio",

"Annualized Sharpe (Rf = 0%)", "Worst Drawdown",

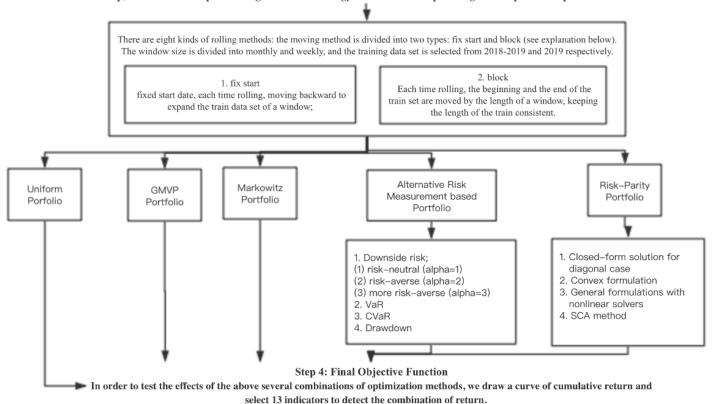
"gain ratio"). The top 5 for each indicator, take the union as a new strategy 5. long-short quantile type

select the top 20 strategy
based on one index
and then, among these
strategy, we select 10 strategy
according to another
index.

- 1) top10 MDD => top5 Annualized return
- 2) top10 Annualized return => top5 MDD
  - 3) top10 Sharpe ratio =>top5 MDD

Step 3: Portfolio Optimization

In this step, we allocate the optimal weight for each strategy selected from step 2 using several portfolio optimization methods.



Annualized Return, Annualized Standard Deviation, Sharpe ratio, Maximum Drawdown, Sortino ratio, Conditional Drawdown5% & 10%), VaR (95% & 99%), Calmer ratio, (return/conditional drawdown) \* 0.95 (or \* 0.5), (return/VaR 95%) \* 0.95, (return / VaR 99%) \*0.99.

Step 5: Practical Analysis