数据是直接在R里抓的现成数据，没用我自己的股票数据，我想的是先按照R官网的数据和代码跑通，弄懂每一步都是什么意思，再用自己的数据。

结果用人家的都没跑出来

参考的这篇文档

代码R语言官网有，在这里

<http://127.0.0.1:18297/library/PortfolioAnalytics/doc/custom_moments_objectives.R>

http://127.0.0.1:18297这个网址应该打不开。

library(PortfolioAnalytics)

## Loading required package: zoo

##   
## Attaching package: 'zoo'

## The following objects are masked from 'package:base':  
##   
## as.Date, as.Date.numeric

## Loading required package: xts

## Loading required package: foreach

## Loading required package: PerformanceAnalytics

##   
## Attaching package: 'PerformanceAnalytics'

## The following object is masked from 'package:graphics':  
##   
## legend

library(DEoptim)

## Loading required package: parallel

##   
## DEoptim package  
## Differential Evolution algorithm in R  
## Authors: D. Ardia, K. Mullen, B. Peterson and J. Ulrich

library(PerformanceAnalytics )

data(edhec)  
head(edhec)

## Convertible Arbitrage CTA Global Distressed Securities  
## 1997-01-31 0.0119 0.0393 0.0178  
## 1997-02-28 0.0123 0.0298 0.0122  
## 1997-03-31 0.0078 -0.0021 -0.0012  
## 1997-04-30 0.0086 -0.0170 0.0030  
## 1997-05-31 0.0156 -0.0015 0.0233  
## 1997-06-30 0.0212 0.0085 0.0217  
## Emerging Markets Equity Market Neutral Event Driven  
## 1997-01-31 0.0791 0.0189 0.0213  
## 1997-02-28 0.0525 0.0101 0.0084  
## 1997-03-31 -0.0120 0.0016 -0.0023  
## 1997-04-30 0.0119 0.0119 -0.0005  
## 1997-05-31 0.0315 0.0189 0.0346  
## 1997-06-30 0.0581 0.0165 0.0258  
## Fixed Income Arbitrage Global Macro Long/Short Equity  
## 1997-01-31 0.0191 0.0573 0.0281  
## 1997-02-28 0.0122 0.0175 -0.0006  
## 1997-03-31 0.0109 -0.0119 -0.0084  
## 1997-04-30 0.0130 0.0172 0.0084  
## 1997-05-31 0.0118 0.0108 0.0394  
## 1997-06-30 0.0108 0.0218 0.0223  
## Merger Arbitrage Relative Value Short Selling Funds of Funds  
## 1997-01-31 0.0150 0.0180 -0.0166 0.0317  
## 1997-02-28 0.0034 0.0118 0.0426 0.0106  
## 1997-03-31 0.0060 0.0010 0.0778 -0.0077  
## 1997-04-30 -0.0001 0.0122 -0.0129 0.0009  
## 1997-05-31 0.0197 0.0173 -0.0737 0.0275  
## 1997-06-30 0.0231 0.0198 -0.0065 0.0225

R <- edhec[, 1:4]  
colnames(R) <- c("CA", "CTAG", "DS", "EM")  
head(R, 5)

## CA CTAG DS EM  
## 1997-01-31 0.0119 0.0393 0.0178 0.0791  
## 1997-02-28 0.0123 0.0298 0.0122 0.0525  
## 1997-03-31 0.0078 -0.0021 -0.0012 -0.0120  
## 1997-04-30 0.0086 -0.0170 0.0030 0.0119  
## 1997-05-31 0.0156 -0.0015 0.0233 0.0315

funds <- colnames(R)  
funds

## [1] "CA" "CTAG" "DS" "EM"

init.portf <- portfolio.spec(assets=funds)  
init.portf <- add.constraint(portfolio=init.portf, type="full\_investment")  
init.portf <- add.constraint(portfolio=init.portf, type="long\_only")  
SD.portf <- add.objective(portfolio=init.portf, type="risk", name="StdDev")  
ES.portf <- add.objective(portfolio=init.portf, type="risk", name="ES")  
sd.moments <- set.portfolio.moments(R, SD.portf)  
names(sd.moments)

## [1] "mu" "sigma"

es.moments <- set.portfolio.moments(R, ES.portf)  
names(es.moments)

## [1] "mu" "sigma" "m3" "m4"

sigma.robust <- function(R){  
 require(MASS)  
 out <- list()  
 set.seed(1234)  
 out$sigma <- cov.rob(R, method="mcd")$cov  
 return(out)  
}

opt.sd <- optimize.portfolio(R, SD.portf,   
 optimize\_method="ROI",   
 momentFUN="sigma.robust")  
opt.sd

Error: "package:ROI" %in% search() || requireNamespace("ROI", quietly = TRUE) is not TRUE

search()的意思是反馈这个.Rproj中load哪些packages，显然ROI没有安装成功。 因为我的R版本如下R version 3.3.3，我这个明天更新下R后看看。

sessionInfo()

## R version 3.3.3 (2017-03-06)  
## Platform: x86\_64-apple-darwin13.4.0 (64-bit)  
## Running under: macOS Sierra 10.12.6  
##   
## locale:  
## [1] en\_US.UTF-8/en\_US.UTF-8/en\_US.UTF-8/C/en\_US.UTF-8/en\_US.UTF-8  
##   
## attached base packages:  
## [1] parallel stats graphics grDevices utils datasets methods   
## [8] base   
##   
## other attached packages:  
## [1] DEoptim\_2.2-4 PortfolioAnalytics\_1.0.3636   
## [3] PerformanceAnalytics\_1.4.3541 foreach\_1.4.3   
## [5] xts\_0.10-1 zoo\_1.8-1   
##   
## loaded via a namespace (and not attached):  
## [1] Rcpp\_0.12.14 codetools\_0.2-15 lattice\_0.20-34 digest\_0.6.13   
## [5] rprojroot\_1.2 grid\_3.3.3 backports\_1.1.0 magrittr\_1.5   
## [9] evaluate\_0.10.1 stringi\_1.1.6 rmarkdown\_1.8 iterators\_1.0.8   
## [13] tools\_3.3.3 stringr\_1.2.0 yaml\_2.1.16 htmltools\_0.3.6   
## [17] knitr\_1.20