

# Test

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```
require(autodiffr)

## Loading required package: autodiffr
##
## Attaching package: 'autodiffr'
## The following object is masked from 'package:stats':
##
##      deriv
ad_setup() # to ensure it is established

## Julia version 0.6.3 at location /usr/local/bin will be used.
## Loading setup script for JuliaCall...
## Finish loading setup script for JuliaCall.
ores <- function(x){
  x # Function will be the parameters. ofn is sum of squares
}

logit <- function(x) exp(x) / (1 + exp(x))

ofn <- function(x){
  res <- ores(x) # returns a vector of residual values
  sum(logit(x) ^ 2)
}

## Now try to generate the gradient function
ogr <- grad(ofn)

system.time(ogr(runif(100)))

##      user  system elapsed
##    1.768    0.004    1.771
system.time(ogr(runif(100)))

##      user  system elapsed
##    0.032    0.000    0.034
ogr1 <- grad(ofn, xsize = runif(100))

system.time(ogr1(runif(100)))

##      user  system elapsed
##    0.008    0.004    0.012
system.time(ogr1(runif(100)))

##      user  system elapsed
```

```
##    0.012    0.000    0.011
ogr2 <- grad(ofn, xsize = runif(100), use_tape = TRUE)
system.time(ogr2(runif(100)))

##    user  system elapsed
##    0.328    0.000    0.329
system.time(ogr2(runif(100)))

##    user  system elapsed
##    0.004    0.000    0.005
```