

03 - 16

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```
set.seed(69420)
library(weibullness)
```

```
##
##  weibullness Package is installed.
```

```
library(maxLik)
```

```
## Loading required package: miscTools
```

```
##
## Please cite the 'maxLik' package as:
## Henningsen, Arne and Toomet, Ott (2011). maxLik: A package for maximum likelihood estimation in R. C
##
## If you have questions, suggestions, or comments regarding the 'maxLik' package, please use a forum o
## https://r-forge.r-project.org/projects/maxlik/
```

1

```
rw <- rweibull(100, shape = 1, scale = 3);
logLikWeibull <- function(param)
{
  pshape<- param[1]
  pscale<- param[2]
  sum(dweibull(rw,shape = pshape, scale = pscale, log = TRUE ))
}
weibull_mle <- maxLik(logLik = logLikWeibull, start = c(pshape = 1,pscale = 3))
weibull_mle
```

```
## Maximum Likelihood estimation
## Newton-Raphson maximisation, 4 iterations
## Return code 2: successive function values within tolerance limit (tol)
## Log-Likelihood: -198.6286 (2 free parameter(s))
## Estimate(s): 0.9905095 2.670209
```

Shape skiriasi per 0.0094905, scale per 0.329791 , gana geras ivertinys

2

```

dst <- rbinom(50, 200, .2)
logLikBinom <- function(param)
{
  psize<- param[1]
  pprob<- param[2]
  sum(dbinom(dst,size = psize, prob = pprob, log = TRUE ))
}
binom_mle <- maxLik(logLik = logLikBinom, start = c(psize = 200,pprob = .2))
binom_mle

```

```

## Maximum Likelihood estimation
## Newton-Raphson maximisation, 3 iterations
## Return code 1: gradient close to zero (gradtol)
## Log-Likelihood: -151.2937 (2 free parameter(s))
## Estimate(s): 200 0.1963

```

p skiriasi per 0.0037, taip pat gana geras ivertinys

3

```

beta <- rbeta(100, 3, 9, ncp = 0)
delta <- (((mean(beta)*(1-mean(beta)))/(var(beta)))-1)
gamma <- mean(beta) * delta
eta <- (1 - mean(beta)) * delta
gamma

```

```
## [1] 3.414774
```

gamma skiriasi per 0.414774

```
eta
```

```
## [1] 10.52131
```

eta skiriasi per 1.52131