

runGESD.R usage

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Decription:

Computes outliers for the given data using GESD statistics. See README for details.

Usage

```
gesd(obs, alpha, value.zscore, r)
```

Arguments

- **obs** : a vector of Observation
- **alpha** : significance Level
- **value.zscore** : if the observation value are already z-normalized. Takes values “YES” or “NO”.
- **r** : upperbound to the number of observations to call as an outlier. If NA, computes GESD test statistic until values of half sample size have been removed from the sample.

Value

- **Total** : The first column gives the total number of outliers
- Rest of the columns are for each observation
- Value of the outlier indicates the outlier rank in the acending order where 0 indicates not an outlier, 1 indiccate the highest ranked outlier (i.e. most extreme observation).

```
source("runGESD.R")

set.seed(1234)

# Create Matrix
rnames <- paste("ROW",c(1:10),sep="_")
cnames <- paste("COL",c(1:20),sep="_")
mat <- matrix(rexp(200), 10, dimnames=list(rnames,cnames))

# Get outliers
dat <- t(apply(mat, 1, function(x) gesd(x, alpha=0.1, value.zscore="NO", r=NA)))
```

Outlier Output

dat

##	Total	COL_1	COL_2	COL_3	COL_4	COL_5	COL_6	COL_7	COL_8	COL_9	COL_10
## ROW_1	6	3	6	4	0	0	5	2	0	0	0
## ROW_2	1	0	0	0	0	0	0	0	0	0	0
## ROW_3	0	0	0	0	0	0	0	0	0	0	0
## ROW_4	1	0	1	0	0	0	0	0	0	0	0

## ROW_5	1	0	0	0	0	0	0	0	0	0	0
## ROW_6	0	0	0	0	0	0	0	0	0	0	0
## ROW_7	2	0	0	0	1	0	2	0	0	0	0
## ROW_8	3	0	0	0	0	0	0	0	0	3	0
## ROW_9	1	0	0	0	0	0	0	0	0	0	0
## ROW_10	5	0	0	0	2	0	1	3	0	0	0
##	COL_11	COL_12	COL_13	COL_14	COL_15	COL_16	COL_17	COL_18	COL_19		
## ROW_1	0	0	0	0	0	1	0	0	0		
## ROW_2	0	0	0	0	0	1	0	0	0		
## ROW_3	0	0	0	0	0	0	0	0	0		
## ROW_4	0	0	0	0	0	0	0	0	0		
## ROW_5	0	0	0	0	1	0	0	0	0		
## ROW_6	0	0	0	0	0	0	0	0	0		
## ROW_7	0	0	0	0	0	0	0	0	0		
## ROW_8	0	0	0	0	0	1	0	0	0		
## ROW_9	0	0	0	0	1	0	0	0	0		
## ROW_10	0	5	0	0	4	0	0	0	0		
##	COL_20										
## ROW_1	0										
## ROW_2	0										
## ROW_3	0										
## ROW_4	0										
## ROW_5	0										
## ROW_6	0										
## ROW_7	0										
## ROW_8	2										
## ROW_9	0										
## ROW_10	0										