Package ‘covRobust’

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Title Robust Covariance Estimation via Nearest Neighbor Cleaning
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Description The cov.nnve() function implements robust covariance estimation
by the nearest neighbor variance estimation (NNVE) method of

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License GPL (>= 2)
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R topics documented:

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 cov.nnve  Robust Covariance Estimation via Nearest Neighbor Cleaning

Description

The cov.nnve function for robust covariance estimation by the nearest neighbor variance estimation (NNVE) method of Wang and Raftery (2002, JASA).
Usage

cov.nnve(datamat, k = 12, pnoise = 0.05, emconv = 0.001, bound = 1.5, 
extension = TRUE, devsm = 0.01)

Arguments

datamat matrix in which each row represents an observation or point and each column
represents a variable

k desired number of nearest neighbors (default is 12)
pnoise percent of added noise
emconv convergence tolerance for EM
bound value used to identify surges in variance caused by outliers wrongly included as
signal points (bound = 1.5 means a 50 percent increase)
extension whether or not to continue after reaching the last chi-square distance. The de-
default is to continue, which is indicated by setting extension = TRUE.
devsm when extension = TRUE, the algorithm stops if the relative difference in vari-
ance is less than devsm. (default is 0.01)

Value

A list with the following components:

cov covariance matrix
mu mean vector
postprob posterior probability
classification classification (0=noise otherwise 1) obtained by rounding postprob
innc list of initial nearest neighbor cleaning results (components are the covariance,
mean, posterior probability and classification)

Note

terms of use: GPL version 2 or newer.

References

Wang and Raftery (2002), Nearest neighbor variance estimation (NNVE): Robust covariance estima-
tion via nearest neighbor cleaning (with discussion), Journal of the American Statistical Association
97:994-1019

edu/www/research/reports

Examples

data(iris)
cov.nnve(iris[-5])
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