Package 'adaplots'

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Type Package

Title Ada-Plot and Uda-Plot for Assessing Distributional Attributes
and Normality

Version 0.1.0

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Description The centralized empirical cumulative average deviation function is utilized to develop
both Ada-plot and Uda-plot as alternatives to Ad-plot and Ud-plot introduced by the author.
Analogous to Ad-plot, Ada-plot can identify symmetry, skewness, and outliers of the data
distribution. The Uda-plot is as exceptional as Ud-plot in assessing normality. The d-value
that quantifies the degree of proximity between the Uda-plot and the graph of the estimated
normal density function helps guide to make decisions on confirmation of normality. Extreme
values in the data can be eliminated using the 1.5IQR rule to create its robust version if user
demands. Full description of the methodology can be found in the article by Wijesuriya (2025a)
<doi:10.1080/03610926.2025.2558108>. Further, the development of Ad-plot and Ud-plot is
contained in both article and the 'adplots' R package by Wijesuriya (2025b & 2025c)
<doi:10.1080/03610926.2024.2440583> and <doi:10.32614/CRAN.package.adplots>.

License GPL-3

Encoding UTF-8

Imports ggplot2

Suggests knitr, rmarkdown, testthat (>= 3.0.0)

Config/testthat/edition 3

VignetteBuilder knitr

RoxygenNote 7.3.2

NeedsCompilation no

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Repository CRAN

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adaplot	*Creates Ada-plot for the provided data.*

Description

Ada-plot identifies the characteristics of the distribution such as symmetry, skewness, and outliers of the data set.

Usage

```
adaplot(X, title = "Ada-plot", xlab = "x", lcol = "black", rcol = "grey60", ...)
```

Arguments

X	an n by 1 matrix, equivalently, a column vector of length n, where n is the number of observations.
title	title of the plot, *Ada-plot* by default.
xlab	x-axis label, x by default.
lcol	color of the points which correspond to data on or below the sample average, *black* by default.
rcol	color of the points which correspond to data above the sample average, *grey60* by default.
...	other graphical parameters.

Value

Ada-plot

References

Wijesuriya, U. A. (2025a). Ada-plot and Uda-plot as Alternatives for Ad-plot and Ud-plot. *Communications in Statistics-Theory and Methods*, doi:10.1080/03610926.2025.2558108.

Wijesuriya, U. A. (2025b). Ad-plot and Ud-plot for Determining Distributional Characteristics and Normality. *Communications in Statistics-Theory and Methods*, doi:10.1080/03610926.2024.2440583.

Wijesuriya, U. A. (2025c). adplots: Ad-plot and Ud-plot for Visualizing Distributional Properties and Normality. *R Package Version 0.1.0*, doi:10.32614/CRAN.package.adplots.

Examples

```
set.seed(0)
X1 <- matrix(rnorm(50, mean = 2, sd = 5))
adaplot(X1)

X2 <- matrix(rf(50, df1 = 10, df2 = 5))
adaplot(X2)
```

```
X3 <- matrix(rbeta(50, shape1 = 10, shape2 = 2))
adaplot(X3, title = "", lcol = "blue", rcol = "red")
```

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udaplot	*Creates Uda-plot for the provided data with and without the estimated normal density curve, excluding extreme values.*

Description

Uda-plot can be utilized to assess normality.

Usage

```
udaplot(X, excld = FALSE, npdf = FALSE, title = ifelse(npdf == FALSE, "Uda-plot",
    "Uda-plot & Normal Density Curve"), xlab = "x", lcol = "black", rcol = "grey60",
        pdfcol = "red",...)
```

Arguments

X	an n by 1 matrix, equivalently, a column vector of length n, where n is the number of observations.
excld	exclude extreme values in the data applying 1.5IQR rule, *FALSE* by default.
npdf	display of the estimated normal density curve in the Uda-plot, *FALSE* by default.
title	title of the plot, *Uda-plot* by default and *Uda-plot & Normal Density Curve* if npdf is *TRUE*.
xlab	x-axis label, x by default.
lcol	color of the points which correspond to data on or below the sample average, *black* by default.
rcol	color of the points which correspond to data above the sample average, *grey60* by default.
pdfcol	color of the estimated normal density curve, *red* by default.
...	other graphical parameters.

Value

Uda-plot

References

Wijesuriya, U. A. (2025a). Ada-plot and Uda-plot as Alternatives for Ad-plot and Ud-plot. *Communications in Statistics-Theory and Methods*, doi:10.1080/03610926.2025.2558108.

Wijesuriya, U. A. (2025b). Ad-plot and Ud-plot for Determining Distributional Characteristics and Normality. *Communications in Statistics-Theory and Methods*, doi:10.1080/03610926.2024.2440583.

Wijesuriya, U. A. (2025c). adplots: Ad-plot and Ud-plot for Visualizing Distributional Properties and Normality. *R Package Version 0.1.0*, doi:10.32614/CRAN.package.adplots.

Examples

```
set.seed(0)
X1 <- matrix(c(rnorm(50, mean = 2, sd = 5), runif(4, 17, 30)))
udaplot(X1)

X2 <- matrix(c(rnorm(50, mean = 2, sd = 5), runif(4, 17, 30)))
udaplot(X2, npdf = TRUE)

X3 <- matrix(c(rnorm(50, mean = 2, sd = 5), runif(4, 17, 30)))
udaplot(X3, excld = TRUE, npdf = TRUE)

X4 <- matrix(rnorm(500, mean = 2, sd = 5))
udaplot(X4, title = "", lcol = "blue", rcol = "red", pdfcol = "balck")
```

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