

# Package ‘adaplots’

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**Type** Package

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

**Version** 0.1.0

**Maintainer** Uditha Amarananda Wijesuriya <u.wijesuriya@usi.edu>

**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

**Author** Uditha Amarananda Wijesuriya [aut, cre]

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adaplot	<i>Creates Ada-plot for the provided data.</i>
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### 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

<code>X</code>	an $n$ by 1 matrix, equivalently, a column vector of length $n$ , where $n$ is the number of observations.
<code>title</code>	title of the plot, <i>Ada-plot</i> by default.
<code>xlab</code>	$x$ -axis label, $x$ by default.
<code>lcol</code>	color of the points which correspond to data on or below the sample average, <i>black</i> by default.
<code>rcol</code>	color of the points which correspond to data above the sample average, <i>grey60</i> by default.
<code>...</code>	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	<i>Creates Uda-plot for the provided data with and without the estimated normal density curve, excluding extreme values.</i>
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## 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

<code>X</code>	an $n$ by 1 matrix, equivalently, a column vector of length $n$ , where $n$ is the number of observations.
<code>excl</code>	exclude extreme values in the data applying 1.5IQR rule, <i>FALSE</i> by default.
<code>npdf</code>	display of the estimated normal density curve in the Uda-plot, <i>FALSE</i> by default.
<code>title</code>	title of the plot, <i>Uda-plot</i> by default and <i>Uda-plot &amp; Normal Density Curve</i> if <code>npdf</code> is <i>TRUE</i> .
<code>xlab</code>	$x$ -axis label, $x$ by default.
<code>lcol</code>	color of the points which correspond to data on or below the sample average, <i>black</i> by default.
<code>rcol</code>	color of the points which correspond to data above the sample average, <i>grey60</i> by default.
<code>pdfcol</code>	color of the estimated normal density curve, <i>red</i> by default.
<code>...</code>	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 = "black")
```

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