Package ‘archetypes’

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Type Package
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Description The main function archetypes implements a framework for archetypal analysis supporting arbitrary problem solving mechanisms for the different conceptual parts of the algorithm.
License GPL (>= 2)
Collate 'archetypes-barplot.R' 'generics.R' 'archetypes-class.R'
 'archetypes-kit-blocks.R' 'archetypes-kit.R' 'archetypes-map.R'
 'archetypes-movie.R' 'archetypes-panorama.R' 'pcplot.R'
 'archetypes-pcplot.R' 'archetypes-robust.R'
 'archetypes-screeplot.R' 'archetypes-step.R'
 'archetypes-weighted.R' 'archetypes-xyplot.R' 'memento.R'
 'simplex-pot.R' 'skeletonplot.R'
Author Manuel J. A. Eugster [aut, cre],
Friedrich Leisch [aut],
Sohan Seth [ctb]
Maintainer Manuel J. A. Eugster <manuel@mjae.net>
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R topics documented:

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archetypes

Perform archetypal analysis on a data matrix.

Description

Perform archetypal analysis on a data matrix.


Usage

\[
\text{archetypes}(\text{data}, k, \text{weights} = \text{NULL}, \text{maxIterations} = 100, \\
\text{minImprovement} = \sqrt{\text{.Machine}\$\text{double}\_\text{eps}}, \text{maxKappa} = 1000, \\
\text{verbose} = \text{FALSE}, \text{saveHistory} = \text{TRUE}, \\
\text{family} = \text{archetypesFamily}(\text{"original"}), \ldots)
\]

Arguments

- **data**: A numeric \(n \times m\) data matrix.
- **k**: The number of archetypes.
- **weights**: Data weights matrix or vector (used as elements of the diagonal weights matrix).
- **maxIterations**: The maximum number of iterations.
- **minImprovement**: The minimal value of improvement between two iterations.
- **maxKappa**: The limit of kappa to report an ill-ness warning.
- **verbose**: Print some details during execution.
- **saveHistory**: Save each execution step in an environment for further analyses.
- **family**: Blocks defining the underlying problem solving mechanisms; see \texttt{archetypesFamily}.
- **...**: Additional arguments for family blocks.

Value

An object of class \texttt{archetypes}, see \texttt{as.archetypes}.

References


See Also

Other archetypes: \texttt{archetypesFamily}; \texttt{as.archetypes}; \texttt{robustArchetypes}; \texttt{weightedArchetypes}

Examples

\[
\text{data(toy)} \\
\text{a} <- \text{archetypes(toy, 3)}
\]
### archetypesFamily

**Archetypes family constructor**

**Description**

This function returns a problem solving block for each of the different conceptual parts of the algorithm.

**Usage**

```r
archetypesFamily(which = c("original", "weighted", "robust"), ...)
```

**Arguments**

- `which`
  - The kind of archetypes family.
- `...`
  - Exchange predefined family blocks with self-defined functions.

**Value**

A list containing a function for each of the different parts.

**See Also**

Other archetypes: [archetypes](#archetypes); [as.archetypes](#as.archetypes); [robustArchetypes](#robustArchetypes); [weightedArchetypes](#weightedArchetypes)

---

### archmap

**Archetypal maps**

**Description**

Two-dimensional projection of the observations based on the alpha coefficients into a space spanned by the (projected) archetypes.

**Usage**

```r
archmap(object, projection = simplex_projection, projection_args = list(),
rotate = 0, cex = 1.5, col = 1, pch = 1, xlab = "", ylab = "",
axes = FALSE, asp = TRUE, ...)
```
Arguments

- **object**: An `archetypes` object
- **projection**: Projection function; see `archmap_projections`
- **projection_args**: Arguments passed to the projection function; see `archmap_projections`
- **rotate**: Rotation angle to rotate the projection
- **cex**: Character expansion of archetypes
- **col**: Color of observations
- **pch**: Point character of observations
- **xlab**: A label for the x-axis
- **ylab**: A label for the y-axis
- **axes**: Logical value to draw axes or not
- **asp**: The y/x aspect ratio
- **...**: Arguments passed to the underlying plot function

Value

Invisible matrix with the projected archetypes

See Also

Other archmap: `archmap_projections, atypes_projection, simplex_projection, tspsimplex_projection`

Examples

```r
## Not run:
data("skel", package = "archetypes")
skel2 <- subset(skel, select = ~Gender)

set.seed(1981)
a <- archetypes(skel2, k = 5)

## Simplex projection:
archmap(a, col = skel$Gender)

## Simplex projection with archetypes arranged according to their ## distances:
archmap(a, col = skel$Gender,  
        projection = tspsimplex_projection)
archmap(a, col = skel$Gender,  
        projection = tspsimplex_projection,  
        projection_args = list(equidist = TRUE))

## MDS projection:
archmap(a, col = skel$Gender,  
        projection = atypes_projection)
```

## End(Not run)
as.archetypes  
Archetypes object constructor

Description

Archetypes object constructor

Usage

as.archetypes(object, k, alphas, rss, iters = NULL, call = NULL, 
  history = NULL, kappas = NULL, betas = NULL, zas = NULL, 
  family = NULL, familyArgs = NULL, residuals = NULL, weights = NULL, 
  reweights = NULL, scaling = NULL)

Arguments

object  The archetypes; a $p \times m$ matrix, see parameters.
k  The number of archetypes;
alphas  The coefficients; a $n \times p$ matrix, see coef.
rss  The residual sum of squares; see rss.archetypes.
iters  The number of iterations to the convergence.
call  The call of the archetypes function.
history  If saveHistory set then an environment with the archetypes object for each 
  execution step;
kappas  The kappas for each system of linear equations.
betas  The data coefficients; a $p \times n$ matrix.
zas  The temporary archetypes.
family  The archetypes family.
familyArgs  Additional arguments for family blocks.
residuals  The residuals.
weights  The data weights.
reweights  The data reweights.
scaling  The scaling parameters of the data.

Value

A list with an element for each parameter and class attribute archetypes.

See Also

Other archetypes: archetypesFamily; archetypes; robustArchetypes; weightedArchetypes
Description

Barplot of archetypes.

Usage

```r
## S3 method for class 'archetypes'
barplot(height, data, which = c("below", "beside"),
       which.beside = c("atypes", "variables"), which.below = c("compressed",
       "default"), percentiles = FALSE, below.compressed.height = 0.1,
       below.compressed.srt = 0, col.atypes = NULL, ...)
```

Arguments

- `height`: An `archetypes` object.
- `data`: The original data matrix.
- `which`: `below` creates a barplot for each archetype, `beside` creates one barplot with bars side by side.
- `which.beside`: Barplot according to `atypes` or `variables`.
- `which.below`: `compressed` plots the labels only once.
- `percentiles`: Show real values or percentile profiles.
- `below.compressed.height`: Height of additional tail subplot.
- `below.compressed.srt`: Rotations of the x-labels.
- `col.atypes`: Color of archetypes; only used in `below.compressed`.
- `...`: Passed to the underlying `barplot` call.

Value

Undefined.
### bestModel.stepArchetypes

*Return best model*

---

**Description**

Return best model

**Usage**

```r
## S3 method for class 'stepArchetypes'
bestModel(object, ...)
```

```r
## S3 method for class 'repArchetypes'
bestModel(object, ...)
```

**Arguments**

- `object` An archetypes object.
- `...` Ignored

---

**body**

*Exploring relationships in body dimensions*

---

**Description**

Body girth measurements and skeletal diameter measurements, as well as age, weight, height and gender, are given for 507 physically active individuals - 247 men and 260 women.

**Usage**

`body`

**Format**

A data.frame containing 507 observations of 25 variables.

**References**


**See Also**

`skel`
### coef.archetypes

**Description**
Return coefficients

**Usage**
```r
## S3 method for class 'archetypes'
coef(object, type = c("alphas", "betas"), ...)
```

**Arguments**
- `object`: An archetypes object.
- `type`: Return alpha or beta coefficients.
- `...`: Ignored.

**Value**
Coefficient matrix.

### fitted.archetypes

**Description**
Returns the approximated data.

**Usage**
```r
## S3 method for class 'archetypes'
fitted(object, ...)
```

**Arguments**
- `object`: An archetypes object.
- `...`: Ignored.

**Value**
Matrix with approximated data.
kappa.archetypes

Return kappa

Description

Return kappa

Usage

## S3 method for class 'archetypes'
kappa(z, ...)

Arguments

z An archetypes object.

... Ignored.

Value

A vector of kappas.

lines.pcpplot

Add lines to an existing parallel coordinates plot.

Description

Add lines to an existing parallel coordinates plot.

Usage

## S3 method for class 'pcplot'
lines(x, data, col = 1, lty = 1, ...)

Arguments

x A matrix or data frame containing the additional data.
data The data of the existing parallel coordinates plot.
col Line colors.
lty Line types.
... Passed to underlying matlines.

Value

Undefined.
**movieplot**  
Archetypes movies.

**Description**

Archetypes movies.
Shows the intermediate steps of the algorithm;
Archetypes parallel coordinates plot movie.

**Usage**

```
movieplot(zs, data, show = c("atypes", "adata", "rwdata"), ssleep = 0,
          bsleep = 0, postfn = function(iter) { }, rwdata.col1 = gray(0.7),
          rwdata.col2 = 2, ...)

movieplot2(zs, data, show = "atypes", ssleep = 0, bsleep = 0,
          zas.col = 2, zas.pch = 13, old.col = rgb(1, 0.5, 0.5), ...)

moviepcplot(zs, data, show = c("atypes", "adata"), ssleep = 0, bsleep = 0,
             ...)
```

**Arguments**

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>zs</td>
<td>An archetypes object.</td>
</tr>
<tr>
<td>data</td>
<td>The data matrix.</td>
</tr>
<tr>
<td>show</td>
<td>Show archetypes or approximated data.</td>
</tr>
<tr>
<td>ssleep</td>
<td>Seconds to sleep before start.</td>
</tr>
<tr>
<td>bsleep</td>
<td>Seconds to sleep between each plot.</td>
</tr>
<tr>
<td>postfn</td>
<td>Post plot function; is called in each iteration after the plot call.</td>
</tr>
<tr>
<td>rwdata.col1</td>
<td>If show = 'rwdata': color of base data set.</td>
</tr>
<tr>
<td>rwdata.col2</td>
<td>If show = 'rwdata': color of weighted data set.</td>
</tr>
<tr>
<td>...</td>
<td>Passed to underlying plot functions.</td>
</tr>
<tr>
<td>zas.col</td>
<td>Color of the intermediate archetypes.</td>
</tr>
<tr>
<td>zas.pch</td>
<td>Type of the intermediate archetypes points.</td>
</tr>
<tr>
<td>old.col</td>
<td>Color of the archetypes on step further.</td>
</tr>
</tbody>
</table>

**Value**

Undefined.
Undefined.
Undefined.
nparameters.archetypes

*Return number of archetypes*

**Description**

Return number of archetypes

**Usage**

```r
## S3 method for class 'archetypes'
nparameters(object, ...)

## S3 method for class 'stepArchetypes'
nparameters(object, ...)

## S3 method for class 'repArchetypes'
nparameters(object, ...)
```

**Arguments**

- `object`: An archetypes object.
- `...`: Ignored.

**Value**

Number of archetypes.

---

panorama.archetypes

*Panorama plot for archetypes.*

**Description**

Panorama plot for archetypes.

**Usage**

```r
## S3 method for class 'archetypes'
panorama(object, data, distfn = distEuclidean,
         xlab = "Index", ylab = "Distance", order = TRUE, col = 1, pch = 1,
         cex = 1, atypes.col = (seq(length = nparameters(object)) + 1),
         atypes.pch = rep(19, nparameters(object)), atypes.cex = rep(1,
         nparameters(object)), ylim = NULL, ...)
```
Arguments

- **object**: An `archetypes`-related object.
- **data**: A matrix or data frame.
- **distfn**: Distance function.
- **xlab**: Label of xaxis.
- **ylab**: Label of yaxis.
- **order**: Order the distances.
- **col**: Color of distances.
- **pch**: Plot character of distances.
- **cex**: Magnification of the distances.
- **atypes.col**: Color of archetype distances.
- **atypes.pch**: Plot character of archetype distances.
- **atypes.cex**: Magnification of the archetype distances.
- **ylim**: The y limits of the plot.
- **...**: Passed to the underlying `plot` call.

Examples

```r
## Not run:
data(Htoy)
a <- archetypes(Htoy, 3)
panorama(a, Htoy)

## See demo(robust-ozone).

## End(Not run)
```

Description

Return fitted archetypes

Usage

```r
## S4 method for signature 'archetypes'
parameters(object, ...)

## S4 method for signature 'stepArchetypes'
parameters(object, ...)

## S4 method for signature 'repArchetypes'
parameters(object, ...)
```
Arguments

object  An archetypes object.
...    Ignored.

Value

Matrix with $k$ archetypes.

---

pcplot.archetypes  *Parallel coordinates of data and archetypes.*

Description

Parallel coordinates of data and archetypes.

Usage

```r
## S3 method for class 'archetypes'
pcplot(x, data, data.col = gray(0.7), data.lwd = 1,
atypes.col = 2, atypes.lwd = 2, atypes.lty = 1, chull = NULL,
chull.col = 1, chull.lwd = 2, chull.lty = 1, ...)
```

Arguments

- **x**  An `archetypes` object.
- **data**  A matrix or data frame.
- **data.col**  Color of data lines.
- **data.lwd**  Width of data lines.
- **atypes.col**  Color of archetypes lines.
- **atypes.lwd**  Width of archetypes lines.
- **atypes.lty**  Type of archetypes lines.
- **chull**  An integer vector giving the indices of the points from `data` lying on the convex hull.
- **chull.col**  Color of convex hull lines.
- **chull.lwd**  Width of convex hull lines.
- **chull.lty**  Type of convex hull lines.
- ...  Passed to `pcplot` and `lines.pcplot`.

Value

Undefined.
pcplot.default  

**Default parallel coordinates plot.**

**Description**

Code copied from function `parcoord` of package MASS to simply play around with the visualization of archetypes. At a later date, when it is clear which visualisation is the best, the functionality is probably merged with the original function or it is possible with parallel coordinate plots which are available et all.

**Usage**

```r
## default S3 method:
pcplot(x, col = gray(0.7), lty = 1, var.label = TRUE,
       rx = NULL, ...)
```

**Arguments**

- `x`  
  A $n \times m$ matrix or data frame who columns represent variables. Missing values are allowed.
- `col`  
  Line color.
- `lty`  
  Line type.
- `var.label`  
  Axes labels.
- `rx`  
  A $2 \times m$ matrix with ranges for each dimension.
- `...`  
  Passed to the underlying `matplot` function.

**Value**

Undefined.

**predict.archetypes**  

*Predict method for archetypal analysis fits*

**Description**

This method produces predicted alpha coefficients for new data.

**Usage**

```r
## S3 method for class 'archetypes'
predict(object, newdata, ...)```
Arguments

object          An archetypes object; currently only original-family objects.
newdata         A data frame with data for which to predict the alpha coefficients.
...             Ignored.

Value

The predict alpha coefficients.

residuals.archetypes  Return residuals

Description

Return residuals

Usage

## S3 method for class 'archetypes'
residuals(object, ...)

Arguments

object          An archetypes object.
...             Ignored.

Value

Matrix with residuals.

robustArchetypes  Robust archetypes

Description

Robust archetypes

Usage

robustArchetypes(data, k, familyBlocks = list(), ...)
Arguments

- **familyBlocks**: Exchange predefined family blocks; see `archetypesFamily`.
- **data**: A numeric $n \times m$ data matrix.
- **k**: The number of archetypes.
- **...**: Additional arguments for family blocks.

Value

An object of class `robustArchetypes` and `as.archetypes`.

See Also

Other archetypes: `archetypesFamily`; `archetypes`; `as.archetypes`; `weightedArchetypes`
rss.archetypes  

Return residual sum of squares

Description

Return residual sum of squares

Usage

## S3 method for class 'archetypes'
rss(object, type = c("scaled", "single", "global"), ...)

## S3 method for class 'stepArchetypes'
rss(object, ...)

## S3 method for class 'repArchetypes'
rss(object, ...)

Arguments

- object: An archetypes object.
- type: Return scaled, single or global RSS.
- ...: Ignored.

Value

Residual sum of squares.

screeplot.stepArchetypes

Screeplot of stepArchetypes.

Description

Screeplot draws the residual sum of square curve based on the best model of each step.

Usage

## S3 method for class 'stepArchetypes'
screeplot(x, type = c("lines", "barplot"), ...)

Arguments

- x: A stepArchetypes object.
- type: Draw lines or a barplot.
- ...: Passed to underlying plot functions.
simplexplot

Value

Undefined.

simplexplot  Simplex visualization

Description

The stochastic nature of the alpha coefficients implies that they exist on a standard (K-1)-simplex with the K archetypes Z as the corners, and the coefficients as the coordinate with respect to these corners. A standard simplex can be projected to two dimensions via a skew orthogonal projection, where all the vertices of the simplex are shown on a circle connected by edges. The individual alpha coefficients can be then projected into this circle.

Usage

simplexplot(object, radius = 10, order = NULL, labels_cex = 1, labels = NULL, show_labels = TRUE, points_col = "#00000044", points_pch = 19, points_cex = 1, projection = simplex_projection, show_points = TRUE, show_circle = TRUE, circle_col = "lightgray", show_edges = TRUE, edges_col = "lightgray", show_direction = FALSE, direction_length = 1, directions_col = points_col, ...) 

Arguments

- object: An archetypes object
- radius: Radius of the projection
- order: Order of the archetypes
- labels_cex: Label expansion
- labels: Labels
- show_labels: Show labels
- points_col: Color of the points
- points_pch: Plot character of the points
- points_cex: Character expansion of the points
- projection: Projection function; see archmap_projections
- show_points: Show the points
- show_circle: Show the circle
- circle_col: Color of the circle
- show_edges: Show the edges
- edges_col: Color of the edges
- direction_length: Expansion of the direction pointers
- directions_col: Color of the direction pointers
- show_direction: Show direction pointers
- ...: Additional arguments; currently ignored
simplex_projection

Value

Invisible list of all computed components needed for the simplex visualization.

References


Examples

```r
### This example reproduces parts of the Figure 7 shown in
### "Probabilistic Archetypal Analysis" by Seth and Eugster (2014)

data("toy", package = "archetypes")

suppressWarnings(RNGversion("3.5.0"))
set.seed(1234); a3 <- archetypes(toy, k = 3)
set.seed(1237); a4 <- archetypes(toy, k = 4)
set.seed(1238); a5 <- archetypes(toy, k = 5)

simplexplot(a3)
simplexplot(a3, show_direction = TRUE, show_points = FALSE)
simplexplot(a4, projection = tspsimplex_projection)
simplexplot(a5, show_direction = TRUE, show_points = FALSE,
  direction_length = 2, directions_col = "black")
```

simplex_projection      Archetypal map projections

Description

Archetypal map projections

Usage

```r
simplex_projection(x, r = 10)
tpsimplex_projection(x, r = 10, equidist = FALSE, ...)
atypes_projection(x)
```

Arguments

- **x**: Archetypes matrix
- **r**: Radius of the simplex projection
- **equidist**: Arrange archetypes equidistantly or in relation to their distance
- **...**: Parameters for the `solve_TSP` function
Value

Matrix with the projected archetypes

See Also

Other archmap: archmap

---

skel

*Exploring relationships in body dimensions, skeletal measurements*

Description

Skeletal diameter measurements, as well as height and gender, are given for 507 physically active individuals - 247 men and 260 women.

This is a subset of the body data set.

Usage

skel

Format

A data.frame containing 507 observations of 11 variables.

References


See Also

body

---

skeletonplot

*Skeleton plot.*

Description

Displays a schematic representation of skeleton data as available in dataset skel.

Displays a generic skeleton with annotations explaining the measurements available in data set skel.
Usage

skeletonplot(x, skel.width = 100, skel.height = 200, ylab = "Height (cm)",
base.radius = 2, xlab = "", xlim = (nrow(x) * c(0, skel.width)),
ylim = c(0, skel.height), col = NULL, mtext = TRUE, skel.lwd = 1, ...)

jd()

Arguments

x
Matrix or data.frame of skeleton data.
skel.width
Reference width for instance calculation.
skel.height
Reference height for instance calculation.
based.radius
Base radius for points.
xlab
The x label of the plot.
ylab
The y label of the plot.
xlim
Numeric of length 2 giving the x limits for the plot.
ylim
Numeric of length 2 giving the y limits for the plot.
col
Color of the different parts of the skeleton.
mtext
Label archetypes.
skel.lwd
Line width of skeleton.
...
Passed to underlying canvas plot function.

Value

List of skeleton instances.
Generic skeleton instance.

See Also

skel

stepArchetypes

Run archetypes algorithm repeatedly

Description

Run archetypes algorithm repeatedly

Usage

stepArchetypes(..., k, nrep = 3, method = archetypes, verbose = TRUE)
Arguments

... Passed to the specific archetype function.

k A vector of integers passed in turn to the k argument of archetypes.

nrep For each value of k run archetypes nrep times.

method Archetypes function to use, typically archetypes, weightedArchetypes or robustArchetypes.

verbose Show progress during execution.

Value

A list with k elements and class attribute stepArchetypes. Each element is a list of class repArchetypes with nrep elements; only for internal usage.

See Also

archetypes

Examples

```r
## not run:
data(skel)
skel2 <- subset(skel, select=-Gender)
as <- stepArchetypes(skel2, k=1:5, verbose=FALSE)

## residual sum of squares curve:
screepplot(as)

## Select three archetypes and from that the best
## recurrence:
a3 <- bestModel(as[[3]])

## End(Not run)
```
weightedArchetypes

Arguments

object A stepArchetypes object.

... Ignored.

Value

Undefined.

toy Toy data set

Description

A simple artificial two-dimensional data set.

Usage

toy

Format

A data.frame containing 250 observations of 2 variables.

weightedArchetypes Weighted archetypes

Description

Weighted archetypes

Usage

weightedArchetypes(data, k, weights = NULL, familyBlocks = list(), ...)

Arguments

weights Data weights matrix.

familyBlocks Exchange predefined family blocks; see archetypesFamily.

data A numeric $n \times m$ data matrix.

k The number of archetypes.

... Additional arguments for family blocks.

Value

An object of class weightedArchetypes and as.archetypes.
weights.archetypes

See Also
Other archetypes: archetypesFamily; archetypes; as.archetypes; robustArchetypes

weights.archetypes  Return weights

Description
Return weights

Usage
## S3 method for class 'archetypes'
weights(object, type = c("weights", "reweight"), ...)

Arguments
- object: An archetypes object.
- type: Return global weights (weighted archetypes) or weights calculated during the
  iterations (robust archetypes).
- ...: Ignored.

Value
Vector of weights.

xyplot  Two-dimensional plot.

Description
Two-dimensional plot.

Usage
xyplot(x, ...)

Arguments
- x: An object.
- ...: Further arguments.

Value
Undefined.
xyplot.archetypes  

Plot of two-dimensional data and archetypes.

Description

Plot of two-dimensional data and archetypes.

Usage

```r
## S3 method for class 'archetypes'
xyplot(x, y, data.col = 1, data.pch = 19,
data.bg = NULL, atypes.col = 2, atypes.pch = 19, ahull.show = TRUE,
ahull.col = atypes.col, chull = NULL, chull.col = gray(0.7),
chull.pch = 19, adata.show = FALSE, adata.col = 3, adata.pch = 13,
link.col = data.col, link.lty = 1, ...)
```

Arguments

- `x`: An `archetypes` object.
- `y`: A matrix or data frame.
- `data.col`: Color of data points.
- `data.pch`: Type of data points.
- `data.bg`: Background of data points.
- `atypes.col`: Color of archetypes points.
- `atypes.pch`: Type of archetypes points.
- `ahull.show`: Show approximated convex hull.
- `ahull.col`: Color of approximated convex hull line.
- `chull`: An integer vector giving the indices of the points from data lying on the convex hull.
- `chull.col`: Color of convex hull points.
- `chull.pch`: Type of convex hull points.
- `adata.show`: Show approximated data with link to the original data.
- `adata.col`: Color of approximated data points.
- `adata.pch`: Type of approximated data points.
- `link.col`: Color of link between approximated and original data points.
- `link.lty`: Line type of link between approximated and original data points.
- `...`: Passed to the underlying plot functions.

Value

Undefined.
Note

The link between approximated and original data is based on an idea and Matlab source code of Bernard Pailthorpe.

xyplot.robustArchetypes

Plot of two-dimensional data and robust archetypes.

Description

Plot of two-dimensional data and robust archetypes.

Usage

## S3 method for class 'robustArchetypes'
xyplot(x, y, ...)

Arguments

x An archetypes object.
y A matrix or data frame.
... Arguments of xyplot.weightedArchetypes and xyplot.robustArchetypes

xyplot.stepArchetypes

Plot of two-dimensional data and stepArchetypes.

Description

Plot of two-dimensional data and stepArchetypes.

Usage

## S3 method for class 'stepArchetypes'
xyplot(x, y, data.col = gray(0.7), data.pch = 19,
       atypes.col = (seq_len(length(x) * length(x[[1]])) + 1), atypes.pch = 19,
       ahull.show = TRUE, ahull.col = atypes.col, ...
Arguments

x  An stepArchetypes object.
y  A matrix or data frame.
data.col  Color of data points.
data.pch  Type of data points.
atypes.col  Color of archetypes points.
atypes.pch  Type of archetypes points.
ahull.show  Show approximated convex hull.
ahull.col  Color of approximated convex hull line.
...  Passed to the underlying plot functions.

Value

Undefined.

xyplot.weightedArchetypes

Plot of two-dimensional data and weighted archetypes.

Description

Plot of two-dimensional data and weighted archetypes.

Usage

## S3 method for class 'weightedArchetypes'
xyplot(x, y, data.col = 1, data.pch = 21,
data.bg = gray, link.col = NULL, link.lty = NULL,
weights.type = "weights", ...)

Arguments

x  An archetypes object.
y  A matrix or data frame.
data.col  Color of data points.
data.pch  Type of data points.
data.bg  Background of data points.
link.col  Color of link between approximated and original data points.
link.lty  Line type of link between approximated and original data points.
weights.type  Weights to display; see weights.archetypes.
...  Arguments of xyplot.archetypes.
Description

An extraction on a stepArchetypes object returns again a stepArchetypes object.

Usage

```r
## S3 method for class 'stepArchetypes'
x[i]
```

Arguments

- `x` A stepArchetypes object.
- `i` The indices to extract.

Value

A stepArchetypes object containing only the parts defined in `i`. 
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