Package 'tourrGui'

Type Package

Title A Tour GUI using gWidgets

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Description The GUI allows user to control the tour by checkboxes for the variable selection, slider for the speed, and toggle boxes for pause.

Depends R (>= 2.14.0), tourr (>= 0.5.1), colorspace, RGtk2, gWidgets, Cairo

Suggests rggobi,TeachingDemos,ggplot2,ash

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LazyData true

Collate 'gui_andrews.r' 'gui_density.r' 'gui_faces.r' 'gui_image.r' 'gui_pcp.r' 'gui_scatmat.r' 'gui_stars.r' 'gui_stereo.r' 'gui_tour.r' 'gui_xy.r' 'tour_andrews.r' 'tour_density.r' 'tour_faces.r' 'tour_pcp.r' 'tour_scatmat.r' 'tour_stars.r' 'tour_stereo.r' 'tour_xy.r'

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NeedsCompilation no

R topics documented:

gui_andrews   *Andrews Tour GUI Displays an Andrews Tour GUI*

Description

This GUI allows users to control the andrews tour by simply moving and clicking their mouses. The Variable Selection checkboxes contains all the numeric variables, and at least three of them need to be checked to make the display work. All the categorical variables go to the Class Selection box. We should select the class variable by double clicking the variable names. The Tour Type radio buttons contains four different tour types. They are the Grand Tour, Little Tour, Local Tour and Guided Tour. We can only choose one type a time. For the Guided Tour, we need to choose an index from the droplist to specify which particular search type is desired. The default index would be holes. For tour type Guided(lda_pp) and Guided(pda_pp), we also need to specify class variable first, and the Guided(pda_pp) is also controlled by another parameter, lambda. Lambda ranges from 0 to 1, with default at 0.02. A value of 0 will make the tour operate like Guided(lda_pp). The Choose Dimension radio buttons allow us to choose the dimension number n to animate a nD tour path with Andrews' curves. Dimension n ranges from 2 to the total number of the numeric variables of this dataset, and the default dimension is 2. Andrews' curves are static methods for displaying 2 or more variables. Here Andrews' curves are used to display projections of the full data. See [andrews](#) The Speed slider can control the speed of the nD tour. Simply dragging the mouse along the slider, changes the speed from slow to fast. The Pause check box allow users to pause the dynamic nD tour and have a close examination on the details. The Apply button allows users to update the nD tour, when it doesn't automatically update. The Quit button allows users to close thie GUI window. The Help button provides information about the tour and also what this GUI can do. Tooltips will pop up when the mouse is moved over the GUI, which give hints about the functionality of the different GUI elements.

Usage

```
gui_andrews(data = flea, ...)
```

Arguments

data	matrix, or data frame containing numeric columns, defaults to flea dataset
...	other arguments passed on to [animate](#) and [display_xy](#)

Author(s)

Bei Huang<beihuang@iastate.edu>, Di Cook <dicook@iastate.edu>, and Hadley Wickham <hadley@rice.edu>

References

Bei Huang, Dianne Cook, Hadley Wickham (2012). tourrGui: A gWidgets GUI for the Tour to Explore High-Dimensional Data Using Low-Dimensional Projections. Journal of Statistical Software, 49(6), 1-12. http://www.jstatsoft.org/v49/i06/.

Examples

```
## Not run:
gui_andrews(flea)

## End(Not run)
```

---

gui_density   *Density Tour GUI Displays a Density Tour GUI*

Description

This GUI allows users to control the density tour by simply moving and clicking their mouses. The Variable Selection checkboxes contains all the numeric variables, and at least two of them need to be checked to make the display work. All the categorical variables go to the Class Selection box. We should select the class variable by double clicking the variable names. Color isn't implemented with the density tour yet. The Tour Type radio buttons contains four different tour types. They are the Grand Tour, Little Tour, Local Tour and Guided Tour. We can only choose one type a time. For the Guided Tour, we need to choose an index from the droplist to specify which particular search type is desired. The default index would be holes. For tour type Guided(lda_pp) and Guided(pda_pp), we also need to specify class variable first, and the Guided(pda_pp) is also controlled by another parameter, lambda. Lambda ranges from 0 to 1, with default at 0.02. A value of 0 will make the tour operate like Guided(lda_pp). For high-dimensional data a value closer to 1 would be advised. The Method Type radio buttons contains three different display methods. They are histogram, density plot and ash plot. The distribution of data projected into 1d can be displayed correspondingly as a histogram, kernel density estimate and average shifted histogram. The Axes Locations column contains two choices, TRUE and FALSE. TRUE means the tour will center at the middle of x-axes, FALSE means the tour will wander to the left and right. The default value is TRUE. The Speed slider can control the speed of the 1D tour. Simply dragging the mouse along the slider, changes the speed from slow to fast. The Pause check box allow users to pause the dynamic 1D tour and have a close examination on the details. The Apply button allows users to update the 1D tour, when it doesn't automatically update. The Quit button allows users to close thie GUI window. The Help button provides information about the tour and also what this GUI can do. Tooltips will pop up when the mouse is moved over the GUI, which give hints about the functionality of the different GUI elements.

Usage

```
gui_density(data = flea, ...)
```

Arguments

`data`	matrix, or data frame containing numeric columns, defaults to flea dataset
`...`	other arguments passed on to [animate](#) and [display_xy](#)

Author(s)

Bei Huang<beihuang@iastate.edu>, Di Cook <dicook@iastate.edu>, and Hadley Wickham <hadley@rice.edu>

References

Bei Huang, Dianne Cook, Hadley Wickham (2012). tourrGui: A gWidgets GUI for the Tour to Explore High-Dimensional Data Using Low-Dimensional Projections. Journal of Statistical Software, 49(6), 1-12. <http://www.jstatsoft.org/v49/i06/>.

Examples

```
## Not run:
gui_density(flea)

## End(Not run)
```

---

gui_faces   *Face Tour GUI Displays a Chernoff's Face Tour GUI*

Description

This GUI allows users to control the faces tour by simply moving and clicking their mouses. The Variable Selection checkboxes contains all the numeric variables, and at least three of them need to be checked to make the display work. All the categorical variables go to the Class Seclection box. We should select the class variable by double clicking the variable names. Color isn't implemented with the faces tour yet. The Tour Type radio buttons contains four different tour types. They are the Grand Tour, Little Tour, Local Tour and Guided Tour. We can only choose one type a time. For the Guided Tour, we need to choose an index from the droplist to specify which particular search type is desired. The default index would be holes. For tour type Guided(lda_pp) and Guided(pda_pp), we also need to specify class variable first, and the Guided(pda_pp) is also controlled by another parameter, lambda. Lambda ranges from 0 to 1, with default at 0.02. A value of 0 will make the tour operate like Guided(lda_pp). The Choose Dimension radio buttons allow us to choose the dimension number n to animate a nD tour path with Andrews' curves. Dimension n ranges from 2 to the total number of the numeric variables of this dataset. The maximum dimension is 18 because that is the limit of facial features to map to variables. The Choose Face Number slider allows users to specify how many faces to display. Face number ranges from 2 to the number of observations in this dataset. Default face number is 4. The Speed slider can control the speed of the nD tour. Simply dragging the mouse along the slider, changes the speed from slow to fast. The Pause check box allow users to pause the dynamic nD tour and have a close examination on the details. The Apply button allows users to update the nD tour, when it doesn't automatically update. The Quit button allows users to close thie GUI window. The Help button provides information about the tour

and also what this GUI can do. Tooltips will pop up when the mouse is moved over the GUI, which give hints about the functionality of the different GUI elements.

Usage

```
gui_faces(data = flea, ...)
```

Arguments

data	matrix, or data frame containing numeric columns, defaults to flea dataset
...	other arguments passed on to animate and display_xy

Author(s)

Bei Huang<beihuang@iastate.edu>, Di Cook <dicook@iastate.edu>, and Hadley Wickham <hadley@rice.edu>

References

Bei Huang, Dianne Cook, Hadley Wickham (2012). tourrGui: A gWidgets GUI for the Tour to Explore High-Dimensional Data Using Low-Dimensional Projections. Journal of Statistical Software, 49(6), 1-12. http://www.jstatsoft.org/v49/i06/.

Examples

```
## Not run:
gui_faces(flea)

## End(Not run)
```

---

gui_image   *Image Tour GUI Displays an Image Tour GUI*

Description

This GUI allows users to control an image tour plot by simply moving and clicking their mouses. The Tour Type radio buttons contains four different tour types. They are the Grand Tour, Little Tour, Local Tour and Guided Tour. We can only choose one type a time. For the Guided Tour, we need to choose an index from the droplist to specify which particular search type is desired. The default index would be holes. The Speed slider can control the speed of the 1D tour. Simply dragging the mouse along the slider, changes the speed from slow to fast. The Pause check box allow users to pause the dynamic 1D tour and have a close examination on the details. The Apply button allows users to update the 1D tour, when it doesn't automatically update. The Quit button allows users to close thie GUI window. The Help button provides information about the tour and also what this GUI can do. Tooltips will pop up when the mouse is moved over the GUI, which give hints about the functionality of the different GUI elements.

Usage

```
gui_image(data = ozone, ...)
```

Arguments

`data`	a 3d array, the first two dimensions are locations on a grid, and the 3rd dimension gives the observations to be mixed with the tour.defaults to ozone dataset
`...`	other arguments passed on to [animate](#) and [display_xy](#)

Author(s)

Bei Huang<beihuang@iastate.edu>, Di Cook <dicook@iastate.edu>, and Hadley Wickham <hadley@rice.edu>

References

Bei Huang, Dianne Cook, Hadley Wickham (2012). tourrGui: A gWidgets GUI for the Tour to Explore High-Dimensional Data Using Low-Dimensional Projections. Journal of Statistical Software, 49(6), 1-12. <http://www.jstatsoft.org/v49/i06/>.

Examples

```
## Not run:
gui_image(ozone)

## End(Not run)
```

---

gui_pcp	*PCP Tour GUI Displays an PCP Tour GUI*

Description

This GUI allows users to control the pcp tour by simply moving and clicking their mouses. The PCP tour is the animation of nD tour path with a parallel coordinates plot. The Variable Selection checkboxes contains all the numeric variables, and at least three of them need to be checked to make the display work. All the categorical variables go to the Class Seclection box. We should select the class variable by double clicking the variable names. Color isn't implemented with the pcp tour yet. The Tour Type radio buttons contains four different tour types. They are the Grand Tour, Little Tour, Local Tour and Guided Tour. We can only choose one type a time. For the Guided Tour, we need to choose an index from the droplist to specify which particular search type is desired. The default index would be holes. For tour type Guided(lda_pp) and Guided(pda_pp), we also need to specify class variable first, and the Guided(pda_pp) is also controlled by another parameter, lambda. Lambda ranges from 0 to 1, with default at 0.02. A value of 0 will make the tour operate like Guided(lda_pp). The Choose Dimension radio buttons allow us to choose the dimension number n to animate a nD pcp tour. Dimension number of pcp tour is the axes number of the parallel coordinates. The Speed slider can control the speed of the nD tour. Simply dragging the mouse along the slider, changes the speed from slow to fast. The Pause check box allow users

to pause the dynamic nD tour and have a close examination on the details. The Apply button allows users to update the nD tour, when it doesn't automatically update. The Quit button allows users to close thie GUI window. The Help button provides information about the tour and also what this GUI can do. Tooltips will pop up when the mouse is moved over the GUI, which give hints about the functionality of the different GUI elements.

Usage

```
gui_pcp(data = flea, ...)
```

Arguments

data   matrix, or data frame containing numeric columns, defaults to flea dataset

...   other arguments passed on to [animate](#) and [display_xy](#)

Author(s)

Bei Huang<beihuang@iastate.edu>, Di Cook <dicook@iastate.edu>, and Hadley Wickham <hadley@rice.edu>

References

Bei Huang, Dianne Cook, Hadley Wickham (2012). tourrGui: A gWidgets GUI for the Tour to Explore High-Dimensional Data Using Low-Dimensional Projections. Journal of Statistical Software, 49(6), 1-12. <http://www.jstatsoft.org/v49/i06/>.

Examples

```
## Not run:
gui_pcp(flea)

## End(Not run)
```

---

gui_scatmat   *Scatmat Tour GUI Displays an Scatmat Tour GUI*

Description

This GUI allows users to control the scatter matrix tour by simply moving and clicking their mouses. The Variable Selection checkboxes contains all the numeric variables, and at least three of them need to be checked to make the display work. All the categorical variables go to the Class Seclection box. We should select the class variable by double clicking the variable names. Color isn't implemented with the scatmat tour yet. The Tour Type radio buttons contains four different tour types. They are the Grand Tour, Little Tour, Local Tour and Guided Tour. We can only choose one type a time. For the Guided Tour, we need to choose an index from the droplist to specify which particular search type is desired. The default index would be holes. For tour type Guided(lda_pp) and Guided(pda_pp), we also need to specify class variable first, and the Guided(pda_pp) is also controlled by another parameter, lambda. Lambda ranges from 0 to 1, with default at 0.02. A value

of 0 will make the tour operate like Guided(lda_pp). The Projections Dimension radio buttons allow us to select pojection dimension for the nD tour. The Speed slider can control the speed of the nD tour. Simply dragging the mouse along the slider, changes the speed from slow to fast. The Pause check box allow users to pause the dynamic nD tour and have a close examination on the details. The Apply button allows users to update the nD tour, when it doesn't automatically update. The Quit button allows users to close thie GUI window. The Help button provides information about the tour and also what this GUI can do. Tooltips will pop up when the mouse is moved over the GUI, which give hints about the functionality of the different GUI elements.

Usage

```
gui_scatmat(data = flea, ...)
```

Arguments

data	matrix, or data frame containing numeric columns, defaults to flea dataset
...	other arguments passed on to [animate](#) and [display_xy](#)

Author(s)

Bei Huang<beihuang@iastate.edu>, Di Cook <dicook@iastate.edu>, and Hadley Wickham <hadley@rice.edu>

References

Bei Huang, Dianne Cook, Hadley Wickham (2012). tourrGui: A gWidgets GUI for the Tour to Explore High-Dimensional Data Using Low-Dimensional Projections. Journal of Statistical Software, 49(6), 1-12. <http://www.jstatsoft.org/v49/i06/>.

Examples

```
## Not run:
gui_scatmat(flea)

## End(Not run)
```

---

gui_stars   *Stars Tour GUI Displays an Stars Tour GUI*

Description

This GUI allows users to control the stars tour by simply moving and clicking their mouses. The Variable Selection checkboxes contains all the numeric variables, and at least three of them need to be checked to make the display work. All the categorical variables go to the Class Seclection box. We should select the class variable by double clicking the variable names. Color isn't implemented with the stars tour yet. The Tour Type radio buttons contains four different tour types. They are the Grand Tour, Little Tour, Local Tour and Guided Tour. We can only choose one type a time. For the Guided Tour, we need to choose an index from the droplist to specify which particular search type

is desired. The default index would be holes. For tour type Guided(lda_pp) and Guided(pda_pp), we also need to specify class variable first, and the Guided(pda_pp) is also controlled by another parameter, lambda. Lambda ranges from 0 to 1, with default at 0.02. A value of 0 will make the tour operate like Guided(lda_pp). The Choose Dimension radio buttons allow us to choose the dimension number n to animate a nD tour path with Andrews' curves. Dimension n ranges from 3 to the total number of the numeric variables of this dataset. The maximum dimension is 18. The Choose Star Number slider allows users to specify how many stars to display. The number ranges from 2 to the number of observations in this dataset. Default star number is 4. The Speed slider can control the speed of the nD tour. Simply dragging the mouse along the slider, changes the speed from slow to fast. The Pause check box allow users to pause the dynamic nD tour and have a close examination on the details. The Apply button allows users to update the nD tour, when it doesn't automatically update. The Quit button allows users to close thie GUI window. The Help button provides information about the tour and also what this GUI can do. Tooltips will pop up when the mouse is moved over the GUI, which give hints about the functionality of the different GUI elements.

Usage

```
gui_stars(data = flea, ...)
```

Arguments

data	matrix, or data frame containing numeric columns, defaults to flea dataset
...	other arguments passed on to animate and display_xy

Author(s)

Bei Huang<beihuang@iastate.edu>, Di Cook <dicook@iastate.edu>, and Hadley Wickham <hadley@rice.edu>

References

Bei Huang, Dianne Cook, Hadley Wickham (2012). tourrGui: A gWidgets GUI for the Tour to Explore High-Dimensional Data Using Low-Dimensional Projections. Journal of Statistical Software, 49(6), 1-12. http://www.jstatsoft.org/v49/i06/.

Examples

```
## Not run:
gui_stars(flea)

## End(Not run)
```

| gui_stereo | *Stereo Tour GUI Displays an Stereo Tour GUI* |

Description

This GUI allows users to control the Stereo tour by simply moving and clicking their mouses. The Variable Selection checkboxes contains all the numeric variables, and at least three of them need to be checked to make the display work. All the categorical variables go to the Class Seclection box. We should select the class variable by double clicking the variable names. The Tour Type radio buttons contains four different tour types. They are the Grand Tour, Little Tour, Local Tour and Guided Tour. We can only choose one type a time. For the Guided Tour, we need to choose an index from the droplist to specify which particular search type is desired. The default index would be holes. For tour type Guided(lda_pp) and Guided(pda_pp), we also need to specify class variable first, and the Guided(pda_pp) is also controlled by another parameter, lambda. Lambda ranges from 0 to 1, with default at 0.02. A value of 0 will make the tour operate like Guided(lda_pp). For high-dimensional data a value closer to 1 would be advised. The Speed slider can control the speed of the 3D tour. Simply dragging the mouse along the slider, changes the speed from slow to fast. The Pause check box allow users to pause the dynamic 3D tour and have a close examination on the details. The Apply button allows users to update the 3D tour, when it doesn't automatically update. The Quit button allows users to close thie GUI window. The Help button provides information about the tour and also what this GUI can do. Tooltips will pop up when the mouse is moved over the GUI, which give hints about the functionality of the different GUI elements.

Usage

```
gui_stereo(data = flea, ...)
```

Arguments

data	matrix, or data frame containing numeric columns, defaults to flea dataset
...	other arguments passed on to [animate](#) and [display_xy](#)

Author(s)

Bei Huang<beihuang@iastate.edu>, Di Cook <dicook@iastate.edu>, and Hadley Wickham <hadley@rice.edu>

References

Bei Huang, Dianne Cook, Hadley Wickham (2012). tourrGui: A gWidgets GUI for the Tour to Explore High-Dimensional Data Using Low-Dimensional Projections. Journal of Statistical Software, 49(6), 1-12. <http://www.jstatsoft.org/v49/i06/>.

Examples

```
## Not run:
gui_stereo(flea)

## End(Not run)
```

---

gui_tour   *Tour GUI Displays all types of Tour GUI in different tabs*

Description

Combines all of the tour gui's into one, putting a separate tab for each.

Usage

```
gui_tour(data = flea, ...)
```

Arguments

data	matrix, or data frame containing numeric columns, defaults to flea dataset
...	other arguments passed on to [animate](#) and [display_xy](#)

Author(s)

Bei Huang<beihuang@iastate.edu>, Di Cook <dicook@iastate.edu>, and Hadley Wickham <hadley@rice.edu>

References

Bei Huang, Dianne Cook, Hadley Wickham (2012). tourrGui: A gWidgets GUI for the Tour to Explore High-Dimensional Data Using Low-Dimensional Projections. Journal of Statistical Software, 49(6), 1-12. <http://www.jstatsoft.org/v49/i06/>.

Examples

```
## Not run:
gui_tour(flea)

## End(Not run)
```

---

gui_xy   *Scatterplot Tour GUI A graphical user interface enabling interactive*
                                control of a scatterplot tour.

Description

This GUI allows users to control the scatterplot tour by simply moving and clicking their mouses.
The Variable Selection checkboxes contains all the numeric variables, and at least three of them
need to be checked to make the display work. All the categorical variables go to the Class Selection
box. We should select the class variable by double clicking the variable names. If users don't specify
the class variable, the selected numeric variables will be considered as one class, and all points will
be black. After users specify the class variable, the points will be considered as different classes
according to this categorical variable, and these will appear as rainbow colors in the scatterplot tour.
The Tour Type radio buttons contains four different tour types. They are the Grand Tour, Little
Tour, Local Tour and Guided Tour. We can only choose one type a time. For the Guided Tour, we
need to choose an index from the droplist to specify which particular search type is desired. The
default index is holes. For tour type Guided(lda_pp) and Guided(pda_pp), we also need to specify
class variable first. The Guided(pda_pp) is also controlled by another parameter, lambda. Lambda
ranges from 0 to 1, with default at 0.02. A value of 0 will make the tour operate like Guided(lda_pp).
For very high-dimensional data a value closer to 1 would be advised. The Axes Locations column
contains three types. Users can specify where tour axes will be displayed. The choices are center,
bottomleft and off. The Speed slider can control the speed of the 2D tour. Simply dragging the
mouse along the slider, changes the speed from slow to fast. The Pause check box allow users to
pause the dynamic 2D tour and have a close examination on the details. The Apply button allows
users to update the 2D tour, when it doesn't automatically update. The Quit button allows users to
close thie GUI window. The Help button provides information about the tour and also what this
GUI can do. Tooltips will pop up when the mouse is moved over the GUI, which give hints about
the functionality of the different GUI elements.

Usage

```
gui_xy(data = flea, ...)
```

Arguments

data	matrix, or data frame containing numeric columns, defaults to flea dataset
...	other arguments passed on to [animate](#) and [display_xy](#)

Author(s)

Bei Huang<beihuang@iastate.edu>, Di Cook <dicook@iastate.edu>, and Hadley Wickham
<hadley@rice.edu>

References

Bei Huang, Dianne Cook, Hadley Wickham (2012). tourrGui: A gWidgets GUI for the Tour to Ex-
plore High-Dimensional Data Using Low-Dimensional Projections. Journal of Statistical Software,
49(6), 1-12. <http://www.jstatsoft.org/v49/i06/>.

Examples

```
## Not run:
gui_xy(flea)

## End(Not run)
```

Index