PACVIZ

A visualization package for R

Documentation Book

pacviz

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About this document

This is the documentation of the **pacviz** package. Examples in the book are generated under version 1.0.0.2.

Session info:

```
sessionInfo()
```

```
## R version 3.6.1 (2019-07-05)
## Platform: x86_64-pc-linux-gnu (64-bit)
## Running under: Linux Mint 20.1
##
## Matrix products: default
## BLAS:   /usr/local/lib/R/lib/libRblas.so
## LAPACK: /usr/local/lib/R/lib/libRlapack.so
##
## locale:
##  [1] LC_CTYPE=en_US.UTF-8       LC_NUMERIC=C
##  [3] LC_TIME=en_US.UTF-8        LC_COLLATE=en_US.UTF-8
##  [5] LC_MONETARY=en_US.UTF-8    LC_MESSAGES=en_US.UTF-8
##  [7] LC_PAPER=en_US.UTF-8       LC_NAME=C
##  [9] LC_ADDRESS=C               LC_TELEPHONE=C
## [11] LC_MEASUREMENT=en_US.UTF-8 LC_IDENTIFICATION=C
##
## attached base packages:
## [1] stats     graphics  grDevices utils     datasets  methods   base
##
## loaded via a namespace (and not attached):
##  [1] compiler_3.6.1  magrittr_2.0.1  bookdown_0.21   htmltools_0.5.0
##  [5] tools_3.6.1     yaml_2.2.1      stringi_1.5.3   rmarkdown_2.6
##  [9] knitr_1.30      stringr_1.4.0   digest_0.6.27   xfun_0.19
## [13] rlang_0.4.9     evaluate_0.14
```

The Author

The author and maintainer of this package is Spencer Riley.

Chapter 1

Introduction to the package

Provides a broad-view perspective on data via linear mapping of data onto a radial coordinate system. The package contains functions to visualize the residual values of linear regression and Cartesian data in the defined radial scheme. See the pacviz documentation page for more information: https://pharaohcola13.github.io/pacviz/book/.

The functions that are enclosed in this package include:

- `pac.plot`
- `pac.resid`
- `pac.lsvm` *(In development)*
- `svm.partition`

1.1 Installation Guide

For the most up-to-date version of the package, install it directly from GitHub.

```
devtools::install_github("PharaohCola13/pacviz")
```

Through CRAN (Not yet available)

```
install.package('pacviz')
```

1.2 Package Dependencies

R (>= 3.3.3)

Packages: circlize, e1071, graphics, plotrix, stats, utils

1.3 Recommendations

The discussions in this section will revolve around preferred color schemes and helpful character codes for UTF-8 symbols that can be used as units.

1.3.1 Color Scheme

Since one of the two colors in the visualization is white, the other is a user input with the default being `gold`. The following colors are predefined in R, with the whole list available here[1], and are a good fit in terms of contrast and readability.

- `lightskyblue`
- `lightsteelblue`
- `darksalmon`
- `palegreen`
- `gray86`
- `plum`

1.3.2 Characters

- Angstrom: `\uc5`
- More will be added

[1] http://www.stat.columbia.edu/ tzheng/files/Rcolor.pdf

Chapter 2

Pac-Man Plot

2.1 Description

2.2 Usage

The function is setup to implement an arbitrary regression model and supports residual standardization. As we have discussed above,

```
pac.plot(
  x,y,
  title,
  xaxislabel,
  yaxislabel,
  xunits,
  yunit,
  color1 = "gold",
)
```

2.3 Examples

For the following examples, the domain and range that will be processed by the function will be:

```
data("cars")
x <- cars$dist
y <- cars$speed

pac.plot(cars$speed,cars$dist, 'Example 1', c("Distance", "m"), c("Speed", "m/s"))
```

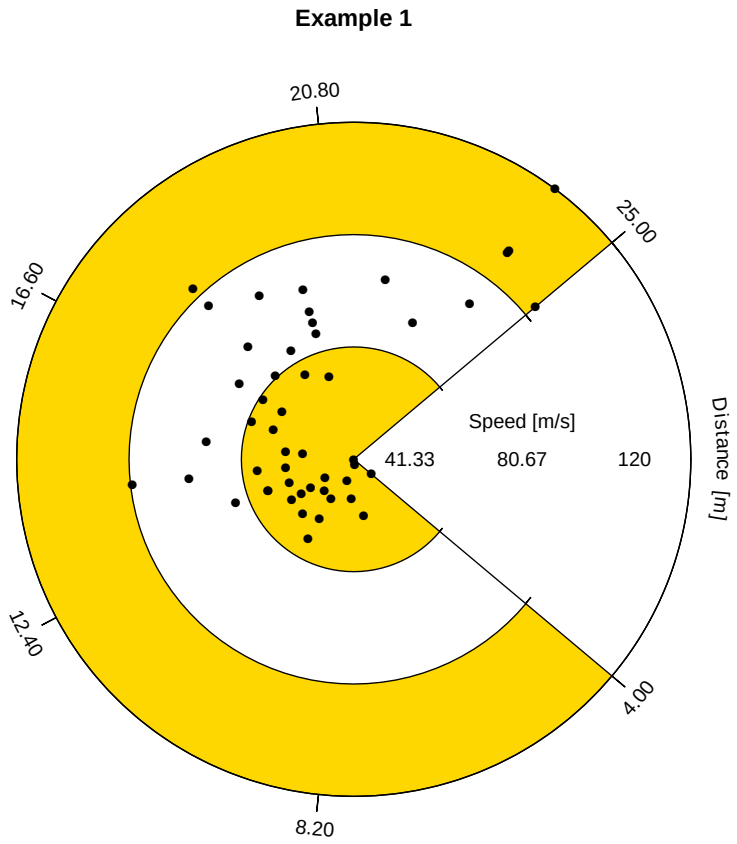

Figure 2.1: Graphical result of Example 1. A basic example of how the relationship between the speed and distance of the car can be visualized.

Chapter 3

Releases

V1.0 *Blinky*

This is the initial release of the `pacviz` R package.

Coming Soon