## Package ‘vistructions’

March 7, 2019

<table>
<thead>
<tr>
<th>Type</th>
<th>Package</th>
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<tr>
<td>Title</td>
<td>Visualize Probability Distributions</td>
</tr>
<tr>
<td>Version</td>
<td>0.1.1</td>
</tr>
<tr>
<td>Description</td>
<td>Visualize and compute percentiles/probabilities of normal, t, f, chi square and binomial distributions.</td>
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<tr>
<td>Depends</td>
<td>R(&gt;= 3.1)</td>
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<tr>
<td>Imports</td>
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<tr>
<td>Suggests</td>
<td>testthat, knitr, rmarkdown, shinyBS, shinyCSSloaders, shinythemes</td>
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<td>MIT + file LICENSE</td>
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<tr>
<td>BugReports</td>
<td><a href="https://github.com/rsquaredacademy/vistructions/issues">https://github.com/rsquaredacademy/vistructions/issues</a></td>
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<tr>
<td>Author</td>
<td>Aravind Hebbali [aut, cre]</td>
</tr>
<tr>
<td>Maintainer</td>
<td>Aravind Hebbali <a href="mailto:hebbali.aravind@gmail.com">hebbali.aravind@gmail.com</a></td>
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vdist_binom_plot

Description
Visualize how changes in number of trials and the probability of success affect the shape of the binomial distribution. Compute & visualize probability from a given quantile and quantiles out of given probability.

Usage
vdist_binom_plot(n, p)
vdist_binom_prob(n, p, s, type = c("lower", "upper", "exact", "interval"))
vdist_binom_perc(n, p, tp, type = c("lower", "upper"))

Arguments
n Number of trials.
p Aggregate probability.
s Number of success.
type Lower/upper/exact/interval.
tp Probability of success in a trial.

See Also
Binomial

Examples
# visualize binomial distribution
vdist_binom_plot(10, 0.3)

# visualize probability from a given quantile
vdist_binom_prob(10, 0.3, 4, type = 'exact')
vdist_binom_prob(10, 0.3, 4, type = 'lower')
vdist_binom_prob(10, 0.3, 4, type = 'upper')
vdist_binom_prob(10, 0.3, c(4, 6), type = 'interval')
Description

Visualize how changes in degrees of freedom affect the shape of the chi square distribution. Compute & visualize quantiles out of given probability and probability from a given quantile.

Usage

\begin{verbatim}
vdist_chisquare_plot(df = 3, normal = FALSE)
vdist_chisquare_perc(probs = 0.95, df = 3, type = c("lower", "upper"))
vdist_chisquare_prob(perc, df, type = c("lower", "upper"))
\end{verbatim}

Arguments

- \textbf{df} Degrees of freedom.
- \textbf{normal} If TRUE, normal curve with same mean and sd as the chi square distribution is drawn.
- \textbf{probs} Probability value.
- \textbf{type} Lower tail or upper tail.
- \textbf{perc} Quantile value.

See Also

Chisquare

Examples

\begin{verbatim}
# visualize chi square distribution
vdist_chisquare_plot()
vdist_chisquare_plot(df = 5)
vdist_chisquare_plot(df = 5, normal = TRUE)

# visualize quantiles out of given probability
vdist_chisquare_perc(0.165, 8, 'lower')
vdist_chisquare_perc(0.22, 13, 'upper')

# visualize probability from a given quantile.
\end{verbatim}
Description

Visualize how changes in degrees of freedom affect the shape of the F distribution. Compute & visualize quantiles out of given probability and probability from a given quantile.

Usage

```r
vdist_f_plot(num_df = 4, den_df = 30, normal = FALSE)
vdist_f_perc(probs = 0.95, num_df = 3, den_df = 30, type = c("lower", "upper"))
vdist_f_prob(perc, num_df, den_df, type = c("lower", "upper"))
```

Arguments

- `num_df`: Degrees of freedom associated with the numerator of f statistic.
- `den_df`: Degrees of freedom associated with the denominator of f statistic.
- `normal`: If TRUE, normal curve with same mean and sd as the F distribution is drawn.
- `probs`: Probability value.
- `type`: Lower tail or upper tail.
- `perc`: Quantile value.

See Also

`FDist`

Examples

```r
# visualize F distribution
vdist_f_plot()
vdist_f_plot(6, 10, normal = TRUE)

# visualize probability from a given quantile
vdist_f_perc(0.95, 3, 30, 'lower')
vdist_f_perc(0.125, 9, 35, 'upper')

# visualize quantiles out of given probability
vdist_f_prob(2.35, 5, 32)
vdist_f_prob(1.5222, 9, 35, type = "upper")
```
vdist_launch_app  
Launch shiny app

**Description**
Launches shiny app for visualizing distributions.

**Usage**
```r
vdist_launch_app()
```

**Examples**
```r
## Not run:
vdist_launch_app ()

## End(Not run)
```

vdist_normal_plot  
Visualize normal distribution

**Description**
Visualize how changes in mean and standard deviation affect the shape of the normal distribution. Compute & visualize quantiles out of given probability and probability from a given quantile.

**Usage**
```r
vdist_normal_plot(mean = 0, sd = 1)
vdist_normal_perc(probs = 0.95, mean = 0, sd = 1, type = c("lower", "upper", "both"))
vdist_normal_prob(perc, mean = 0, sd = 1, type = c("lower", "upper", "both"))
```

**Arguments**
- **mean**: Mean of the normal distribution.
- **sd**: Standard deviation of the normal distribution.
- **probs**: Probability value.
- **type**: Lower tail, upper tail or both.
- **perc**: Quantile value.
See Also

Normal

Examples

# visualize normal distribution
vdist_normal_plot()
vdist_normal_plot(mean = 2, sd = 0.6)

# visualize quantiles out of given probability
vdist_normal_perc(0.95, mean = 2, sd = 1.36)
vdist_normal_perc(0.3, mean = 2, sd = 1.36, type = 'upper')
vdist_normal_perc(0.95, mean = 2, sd = 1.36, type = 'both')

# visualize probability from a given quantile
vdist_normal_prob(3.78, mean = 2, sd = 1.36)
vdist_normal_prob(3.43, mean = 2, sd = 1.36, type = 'upper')
vdist_normal_prob(c(-1.74, 1.83), type = 'both')

vdist_t  Visualize t distribution

Description

Visualize how degrees of freedom affect the shape of t distribution, visualize quantiles out of given probability and probability from a given quantile.

Usage

vdist_t_plot(df = 3)

vdist_t_perc(probs = 0.95, df = 4, type = c("lower", "upper", "both"))

vdist_t_prob(perc, df, type = c("lower", "upper", "interval", "both"))

Arguments

df  Degrees of freedom.
probs  Probability value.
type  Lower tail, upper tail, interval or both.
perc  Quantile value.

See Also

TDist
vistributions

Examples

# visualize t distribution
vdist_t_plot()
vdist_t_plot(6)
vdist_t_plot(df = 8)

# visualize quantiles out of given probability
vdist_t_perc(probs = 0.95, df = 4, type = 'lower')
vdist_t_perc(probs = 0.35, df = 4, type = 'upper')
vdist_t_perc(probs = 0.69, df = 7, type = 'both')

# visualize probability from a given quantile
vdist_t_prob(2.045, 7, 'lower')
vdist_t_prob(0.945, 7, 'upper')
vdist_t_prob(1.445, 7, 'interval')
vdist_t_prob(1.6, 7, 'both')

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vistributions vistributions package

Description

Visualize probability distributions.
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