

Package ‘vistributions’

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Type Package

Title Visualize Probability Distributions

Version 0.1.2

Description Visualize and compute percentiles/probabilities of normal, t, f, chi square and binomial distributions.

Depends R(>= 3.2)

Imports ggplot2, magrittr, stats, utils

Suggests covr, knitr, rmarkdown, testthat, vdiff, xplorerr

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URL <https://github.com/rsquaredacademy/vistributions>,
<https://vistributions.rsquaredacademy.com>

BugReports <https://github.com/rsquaredacademy/vistributions/issues>

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|------------------|--|
| vdist_binom_plot | <i>Visualize binomial distribution</i> |
|------------------|--|

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 = 10, p = 0.3, print_plot = TRUE)
```

```
vdist_binom_prob(  
  n = 10,  
  p = 0.3,  
  s = 4,  
  type = c("lower", "upper", "exact", "interval"),  
  print_plot = TRUE  
)
```

```
vdist_binom_perc(  
  n = 10,  
  p = 0.5,  
  tp = 0.05,  
  type = c("lower", "upper"),  
  print_plot = TRUE  
)
```

Arguments

| | |
|------------|---|
| n | Number of trials. |
| p | Aggregate probability. |
| print_plot | logical; if TRUE, prints the plot else returns a plot object. |
| 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')

# visualize quantiles out of given probability
vdist_binom_perc(10, 0.5, 0.05)
vdist_binom_perc(10, 0.5, 0.05, "upper")
```

vdist_chisquare_plot *Visualize chi square distribution*

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

```
vdist_chisquare_plot(
  df = 3,
  normal = FALSE,
  xaxis_range = 25,
  print_plot = TRUE
)

vdist_chisquare_perc(
  probs = 0.95,
  df = 3,
  type = c("lower", "upper"),
  print_plot = TRUE
)

vdist_chisquare_prob(
  perc = 13,
  df = 11,
  type = c("lower", "upper"),
  print_plot = TRUE
)
```

Arguments

| | |
|-------------|--|
| df | Degrees of freedom. |
| normal | If TRUE, normal curve with same mean and sd as the chi square distribution is drawn. |
| xaxis_range | The upper range of the X axis. |
| print_plot | logical; if TRUE, prints the plot else returns a plot object. |
| probs | Probability value. |
| type | Lower tail or upper tail. |
| perc | Quantile value. |

See Also

[Chisquare](#)

Examples

```
# 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.
vdist_chisquare_prob(13.58, 11, 'lower')
vdist_chisquare_prob(15.72, 13, 'upper')
```

vdist_f_plot

Visualize f distribution

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

```
vdist_f_plot(num_df = 4, den_df = 30, normal = FALSE, print_plot = TRUE)

vdist_f_perc(
  probs = 0.95,
  num_df = 3,
  den_df = 30,
```

```
    type = c("lower", "upper"),
    print_plot = TRUE
  )

vdist_f_prob(
  perc = 2.35,
  num_df = 5,
  den_df = 32,
  type = c("lower", "upper"),
  print_plot = TRUE
)
```

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. |
| print_plot | logical; if TRUE, prints the plot else returns a plot object. |
| probs | Probability value. |
| type | Lower tail or upper tail. |
| perc | Quantile value. |

See Also

[FDist](#)

Examples

```
# 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

```
vdist_launch_app()
```

Examples

```
## 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

```
vdist_normal_plot(mean = 0, sd = 1, print_plot = TRUE)
```

```
vdist_normal_perc(  
  probs = 0.95,  
  mean = 0,  
  sd = 1,  
  type = c("lower", "upper", "both"),  
  print_plot = TRUE  
)
```

```
vdist_normal_prob(  
  perc = 3,  
  mean = 0,  
  sd = 1,  
  type = c("lower", "upper", "both"),  
  print_plot = TRUE  
)
```

Arguments

| | |
|------------|---|
| mean | Mean of the normal distribution. |
| sd | Standard deviation of the normal distribution. |
| print_plot | logical; if TRUE, prints the plot else returns a plot object. |
| 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 | <i>Visualize t distribution</i> |
|---------|---------------------------------|

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, print_plot = TRUE)

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

```
)  
  
vdist_t_prob(  
  perc = 1.6,  
  df = 7,  
  type = c("lower", "upper", "interval", "both"),  
  print_plot = TRUE  
)
```

Arguments

| | |
|------------|---|
| df | Degrees of freedom. |
| print_plot | logical; if TRUE, prints the plot else returns a plot object. |
| probs | Probability value. |
| type | Lower tail, upper tail, interval or both. |
| perc | Quantile value. |

See Also

[TDist](#)

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')
```

vistributions

vistributions *package*

Description

Visualize probability distributions.

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