

Package ‘facetsviz’

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Type Package

Title Parse and Visualize Facets Output Files

Version 0.1.1

Description Utilities to parse output files from 'Facets' (a software widely used for multi-facet Rasch measurement) and build accurate visualizations from the measurement reports. For more details on the underlying measurement framework, see Linacre (1994, ISBN:0-941938-02-6) and Linacre (2023) <<https://www.winsteps.com/a/Facets-Manual.pdf>>.

URL <https://github.com/myprabowo/facetsviz>

BugReports <https://github.com/myprabowo/facetsviz/issues>

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Encoding UTF-8

Depends R (>= 4.1.0)

Imports ggrepel, ggplot2, rlang, scales, stats, tibble, tidyr, tools, utils

Suggests bslib, DT, knitr, rmarkdown, shiny, testthat

VignetteBuilder knitr

Config/testthat/edition 3

RoxygenNote 7.3.3

NeedsCompilation no

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facetsviz-package	<i>Parse and visualize FACETS output files</i>
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Description

The **facetsviz** package parses FACETS .out files and renders common multi-facet Rasch measurement plots, including Wright maps, severity distributions, criterion diagnostics, rating-scale diagnostics, and unexpected response summaries.

Core functions

- read_facets()
- render_facets_plots()
- render_facets_batch()
- run_app()

facets_theme	<i>Facets plotting theme</i>
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Description

Facets plotting theme

Usage

facets_theme(base_size = 11, base_family = "Helvetica")

Arguments

base_size	Base text size.
base_family	Base font family.

Value

A ggplot2 theme object.

plot_distribution	<i>Plot the distribution of measures for a facet</i>
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Description

Plot the distribution of measures for a facet

Usage

```
plot_distribution(x, facet_index = 2L, binwidth = 0.75)
```

Arguments

x	A 'facets_out' object or path to a FACETS '.out' file.
facet_index	Which measurement report to plot (default '2L').
binwidth	Histogram bin width in logits.

Value

A ggplot object.

plot_estimates	<i>Plot measure estimates with standard errors for a facet</i>
----------------	--

Description

Plot measure estimates with standard errors for a facet

Usage

```
plot_estimates(x, facet_index = 3L)
```

Arguments

x	A 'facets_out' object or path to a FACETS '.out' file.
facet_index	Which measurement report to plot (default '3L').

Value

A ggplot object.

plot_fairness	<i>Plot representative observed versus fair averages for a facet</i>
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Description

Plot representative observed versus fair averages for a facet

Usage

```
plot_fairness(x, facet_index = 1L, n = 8L)
```

Arguments

x	A ‘facets_out’ object or path to a FACETS ‘.out’ file.
facet_index	Which measurement report to plot (default ‘1L’).
n	Number of representative elements to show.

Value

A ggplot object.

plot_ogive	<i>Plot the expected-score ogive implied by Table 8.1 thresholds</i>
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Description

Plot the expected-score ogive implied by Table 8.1 thresholds

Usage

```
plot_ogive(x, theta = NULL)
```

Arguments

x	A ‘facets_out’ object or path to a FACETS ‘.out’ file.
theta	Optional vector of theta values.

Value

A ggplot object.

plot_probability	<i>Plot rating-scale category probability curves</i>
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Description

Plot rating-scale category probability curves

Usage

```
plot_probability(x, theta = NULL)
```

Arguments

x	A 'facets_out' object or path to a FACETS '.out' file.
theta	Optional vector of theta values.

Value

A ggplot object.

plot_structure	<i>Plot mode, median, and mean category regions from rating-scale thresholds</i>
----------------	--

Description

Plot mode, median, and mean category regions from rating-scale thresholds

Usage

```
plot_structure(x, theta = NULL)
```

Arguments

x	A 'facets_out' object or path to a FACETS '.out' file.
theta	Optional vector of theta values.

Value

A ggplot object.

plot_unexpected	<i>Plot the strongest unexpected responses from Table 4.1</i>
-----------------	---

Description

Plot the strongest unexpected responses from Table 4.1

Usage

```
plot_unexpected(x, top_n = 20L)
```

Arguments

x	A ‘facets_out’ object or path to a FACETS ‘.out’ file.
top_n	Number of rows to show.

Value

A ggplot object.

plot_usage	<i>Plot rating-scale category usage frequencies</i>
------------	---

Description

Plot rating-scale category usage frequencies

Usage

```
plot_usage(x)
```

Arguments

x	A ‘facets_out’ object or path to a FACETS ‘.out’ file.
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Value

A ggplot object.

plot_wright	<i>Plot a compact Wright map across available facets</i>
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Description

Plot a compact Wright map across available facets

Usage

```
plot_wright(x)
```

Arguments

x	A 'facets_out' object or path to a FACETS '.out' file.
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Value

A ggplot object.

read_facets	<i>Read a FACETS output file</i>
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Description

Reads a FACETS '.out' file and parses the main FACETS tables used by the package.

Usage

```
read_facets(path, encoding = "UTF-8")
```

Arguments

path	Path to a FACETS '.out' file.
encoding	Text encoding used when reading the file.

Value

An object of class 'facets_out'.

render_batch	<i>Render FACETS plots for multiple output files</i>
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Description

Render FACETS plots for multiple output files

Usage

```
render_batch(  
  paths = ".",  
  output_root,  
  recursive = TRUE,  
  include = c("wright_map", "observed_vs_fair", "measure_distribution", "estimates",  
    "category_usage", "probability_curves", "expected_score_ogive", "scale_structure",  
    "unexpected_responses"),  
  formats = c("png", "tiff"),  
  dpi = 600,  
  top_n_unexpected = 20L  
)
```

Arguments

paths	One or more FACETS ‘.out’ or ‘.txt’ files or directories containing them.
output_root	Root directory for rendered plot folders.
recursive	Whether to search directories recursively.
include	Plot names passed to [render_plots()].
formats	File formats passed to [render_plots()].
dpi	Image resolution.
top_n_unexpected	Number of unexpected responses to show.

Value

A tibble describing rendered outputs.

render_plots	<i>Render a standard set of FACETS visualizations to disk</i>
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Description

Render a standard set of FACETS visualizations to disk

Usage

```
render_plots(
  x,
  output_dir,
  include = c("wright_map", "observed_vs_fair", "measure_distribution", "estimates",
    "category_usage", "probability_curves", "expected_score_ogive", "scale_structure",
    "unexpected_responses"),
  formats = c("png", "tiff"),
  dpi = 600,
  top_n_unexpected = 20L
)
```

Arguments

x	A 'facets_out' object or path to a FACETS '.out' file.
output_dir	Output directory for image files.
include	Character vector of plot names to render.
formats	File formats to write, such as "png" or "tiff".
dpi	Image resolution.
top_n_unexpected	Number of unexpected responses to show when rendering that plot.

Value

Invisibly, a named list of generated file paths.

run_app	<i>Launch the facetsviz Shiny app</i>
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Description

Launch the facetsviz Shiny app

Usage

```
run_app(launch = TRUE, host = "127.0.0.1", port = NULL)
```

Arguments

<code>launch</code>	If 'TRUE', run the app immediately. If 'FALSE', return the app object.
<code>host</code>	Host passed to <code>[shiny::runApp()]</code> when launching.
<code>port</code>	Port passed to <code>[shiny::runApp()]</code> when launching.

Value

A shiny app object when 'launch = FALSE', otherwise the result of `[shiny::runApp()]`.

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