

Package: ggsketch (via r-universe)

July 17, 2026

Title Grammar-Native Hand-Drawn Geoms for 'ggplot2'

Version 2.0.0

Description Provides 'ggplot2' geoms that render with a hand-drawn, sketchy aesthetic: roughened strokes, double-pass lines, and hachure, cross-hatch, zigzag, and dots fill patterns. Implemented as pure-R 'grid' grobs wrapped in 'ggproto' geoms, composable with aes(), stats, scales, and faceting. Works on every R graphics device (PDF, PNG, SVG, screen) with no browser dependency. Algorithms are reimplemented from the published 'rough.js' algorithm description (Shih, 2020, <<https://shih.ca/posts/2020/roughjs-algorithms/>>) and Wood and others (2012, <[doi:10.1109/TVCG.2012.262](https://doi.org/10.1109/TVCG.2012.262)>); see the NOTICE file in the package sources for attribution.

License MIT + file LICENSE

URL <https://github.com/orijitghosh/ggsketch>,
<https://orijitghosh.github.io/ggsketch/>

BugReports <https://github.com/orijitghosh/ggsketch/issues>

Depends R (>= 4.1.0)

Imports cli (>= 3.4.0), ggplot2 (>= 3.5.0), grDevices, grid, rlang (>= 1.0.0), scales (>= 1.2.0), withr (>= 2.5.0)

Suggests gganimate, gifski, hexbin, igraph, knitr, magick, MASS, patchwork, quantreg, ragg, rmarkdown, sf, svglite, systemfonts, testthat (>= 3.0.0), vdiff (>= 1.0.0)

VignetteBuilder knitr

Config/testthat/edition 3

Encoding UTF-8

Language en-US

NeedsCompilation no

Config/roxygen2/version 8.0.0

Author Arijit Ghosh [aut, cre]

Maintainer Arijit Ghosh <arijitghosh2009@gmail.com>

Repository <https://cran.r-universe.dev>

Date/Publication 2026-07-17 14:00:07 UTC

RemoteUrl <https://github.com/cran/ggsketch>

RemoteRef HEAD

RemoteSha 5f9223df868c6ede724d42eb10123a7ba1ee1808

Contents

animate_sketch	5
annotate_sketch	6
annotate_sketch_arrow	8
annotate_sketch_callout	9
annotate_sketch_highlight	11
arrowhead	13
boil_gganimate	14
CoordSketch	15
CoordSketchPolar	17
curve_fill	18
element_sketch_line	19
element_sketch_paper	20
engrave_fill	21
engrave_ladder	22
force_layout	23
geom_sketch_alluvial	24
geom_sketch_arc_diagram	26
geom_sketch_bin2d	28
geom_sketch_bump	30
geom_sketch_chord	32
geom_sketch_contour	34
geom_sketch_count	35
geom_sketch_dendrogram	37
geom_sketch_density	39
geom_sketch_density2d	40
geom_sketch_ecdf	42
geom_sketch_function	44
geom_sketch_histogram	46
geom_sketch_jitter	48
geom_sketch_marimekko	50
geom_sketch_mosaic	52
geom_sketch_parallel	53
geom_sketch_qq	55
geom_sketch_quantile	57
geom_sketch_rose	59
geom_sketch_sunburst	61
geom_sketch_text	63

GeomSketchAbline	65
GeomSketchArrow	67
GeomSketchBoxplot	69
GeomSketchBracket	71
GeomSketchCallout	73
GeomSketchChicklet	76
GeomSketchCol	78
GeomSketchContourFilled	80
GeomSketchCurve	83
GeomSketchDotplot	85
GeomSketchDumbbell	87
GeomSketchEdge	89
GeomSketchEllipse	91
GeomSketchEngrave	93
GeomSketchGantt	96
GeomSketchHex	98
GeomSketchLine	100
GeomSketchLinerange	102
GeomSketchLollipop	105
GeomSketchMarkCircle	107
GeomSketchMarkHull	110
GeomSketchPath	112
GeomSketchPoint	114
GeomSketchPolygon	116
GeomSketchRect	117
GeomSketchRibbon	120
GeomSketchRug	122
GeomSketchSegment	124
GeomSketchSfPolygon	126
GeomSketchSlope	128
GeomSketchSmooth	129
GeomSketchSpoke	131
GeomSketchTextRepel	133
GeomSketchViolin	135
ggsketch_check_fonts	137
ggsketch_save	138
hachure_fill	139
hachure_fill_multi	140
leader_path	141
paper_grain	142
paper_primitives	142
paper_spec	143
register_sketch_font	144
repel_layout	145
rough_arc	146
rough_bezier	147
rough_ellipse	148
roughen_polyline	149

scale_medium_discrete	149
scale_pressure_continuous	150
scale_roughness_continuous	152
scale_sketch	153
scale_tone_continuous	154
sketch_arrow_grob	155
sketch_arrowheads	156
sketch_band_grob	157
sketch_callout_grob	158
sketch_dotplot_grob	160
sketch_ellipse_grob	161
sketch_engrave_grob	162
sketch_fill	163
sketch_fill_multi	164
sketch_graph	165
sketch_media	167
sketch_palette	167
sketch_papers	168
sketch_path_grob	169
sketch_polygon_grob	170
sketch_repel_grob	171
sketch_spray_grob	172
sketch_stroke_grob	173
sketch_style	175
sketch_styles	176
sketch_wedge_grob	176
spray_scatter	177
StatSketchBeeswarm	178
StatSketchCalendar	180
StatSketchDensityRidges	182
StatSketchFunnel	184
StatSketchPie	186
StatSketchPyramid	188
StatSketchRadar	190
StatSketchStream	192
StatSketchTreemap	194
StatSketchWaffle	196
StatSketchWaterfall	198
stroke_profile	200
stroke_ribbon	201
theme_sketch	202
treemap_layout	204
wash_bleed	205
watercolor_wash	206
watercolor_wash_multi	207

animate_sketch

Animate a sketch plot by "boiling" its lines

Description

Renders a ggplot built with ggsketch geoms `nframes` times, shifting every roughening seed by a per-frame amount, so the whole drawing shimmers and re-draws itself like a hand-animated cel (the "boiling line" effect). Because the shift is added to *every* resolved seed – whether a layer set its own seed or inherited the global one – a plot boils without any change to its code. Frame 1 reproduces the static plot exactly.

Usage

```
animate_sketch(
  plot,
  nframes = 12L,
  fps = 10,
  type = c("boil", "draw_on"),
  direction = c("lr", "rl", "bt", "tb", "diag", "radial"),
  easing = c("linear", "ease_in", "ease_out", "ease_in_out"),
  file = NULL,
  width = 7,
  height = 5,
  units = "in",
  res = 120,
  background = "white",
  device = NULL,
  seed = NULL,
  renderer = c("auto", "gifski", "magick", "none"),
  loop = TRUE
)
```

Arguments

<code>plot</code>	A ggplot object using ggsketch geoms.
<code>nframes</code>	Number of frames. Default 12.
<code>fps</code>	Frames per second in the output GIF. Default 10.
<code>type</code>	Motion type: "boil" (re-seed the wobble each frame so the whole drawing shimmers) or "draw_on" (progressively reveal the finished drawing behind a moving wipe, as if a hand were drawing it).
<code>direction</code>	For type = "draw_on", how the drawing is revealed: a straight wipe "lr" (left-to-right, default), "rl", "bt" (bottom-to-top) or "tb"; a diagonal wipe "diag" (top-left to bottom-right); or "radial" (a circular iris opening from the centre).
<code>easing</code>	For type = "draw_on", the pacing of the reveal across frames: "linear" (constant speed, default), "ease_in" (start slow), "ease_out" (end slow), or "ease_in_out" (slow at both ends).

file	Output GIF path. If NULL (default), no GIF is written and the frame paths are returned invisibly.
width, height, units, res	Frame size and resolution, passed to the graphics device (units one of "in", "cm", "mm", "px").
background	Frame background colour. Default "white".
device	Graphics device: "ragg" (default when installed) or "png".
seed	Base seed (NULL uses <code>getOption("ggsketch.seed", 1L)</code>).
renderer	GIF backend: "auto" (default), "gifski", "magick", or "none" (always return frame paths).
loop	Loop the GIF forever? Default TRUE.

Details

Frames are stitched into a GIF when **gifski** or **magick** is installed (neither is a hard dependency); otherwise the frame image paths are returned so you can assemble them yourself. Everything is reproducible: the same seed yields the same animation.

Value

Invisibly, the GIF path (when written) or a character vector of frame image paths.

Examples

```
library(ggplot2)
p <- ggplot(mpg, aes(class)) +
  geom_sketch_bar(fill = "#7BAFD4", seed = 1L) +
  theme_sketch()
# Write a GIF if gifski/magick is available, else get frame paths back:
gif <- animate_sketch(p, nframes = 8, file = tempfile(fileext = ".gif"))
```

annotate_sketch

Sketchy annotations

Description

The sketch analogue of `ggplot2::annotate()`. Creates a one-off layer of fixed, hand-drawn marks that do not inherit the plot's aesthetics - useful for highlighting, callouts, and reference shapes.

Usage

```
annotate_sketch(
  geom,
  x = NULL,
  y = NULL,
  xmin = NULL,
  xmax = NULL,
  ymin = NULL,
  ymax = NULL,
  xend = NULL,
  yend = NULL,
  r = NULL,
  a = NULL,
  b = NULL,
  seed = NULL,
  na.rm = FALSE,
  ...
)
```

Arguments

geom	Name of the sketch geom to draw. One of "point", "line", "path", "segment", "rect", "polygon", "circle", "ellipse".
x, y, xmin, xmax, ymin, ymax, xend, yend	Positioning aesthetics (numeric vectors, recycled to a common length). Supply the ones the chosen geom needs (e.g. xmin/xmax/ymin/ymax for "rect", xend/yend for "segment").
r, a, b	Radius ("circle") or semi-axes ("ellipse").
seed	Integer seed for reproducible wobble.
na.rm	If FALSE (default), missing values trigger a warning.
...	Other arguments passed to the underlying geom_sketch_*() layer (e.g. colour, fill, roughness, fill_style).

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#),

```
StatSketchPie, StatSketchPyramid, StatSketchRadar, StatSketchStream, StatSketchTreemap,
StatSketchWaffle, StatSketchWaterfall, annotate_sketch_arrow(), annotate_sketch_callout(),
annotate_sketch_highlight(), geom_sketch_alluvial(), geom_sketch_arc_diagram(), geom_sketch_bin2d(),
geom_sketch_bump(), geom_sketch_chord(), geom_sketch_contour(), geom_sketch_count(),
geom_sketch_dendrogram(), geom_sketch_density(), geom_sketch_density2d(), geom_sketch_ecdf(),
geom_sketch_function(), geom_sketch_histogram(), geom_sketch_jitter(), geom_sketch_marimekko(),
geom_sketch_mosaic(), geom_sketch_parallel(), geom_sketch_qq(), geom_sketch_quantile(),
geom_sketch_rose(), geom_sketch_sunburst(), geom_sketch_text(), sketch_graph()
```

Examples

```
library(ggplot2)
ggplot(mtcars, aes(wt, mpg)) +
  geom_sketch_point(seed = 1L) +
  annotate_sketch("rect", xmin = 3, xmax = 4, ymin = 15, ymax = 22,
    fill = NA, colour = "red", seed = 2L) +
  annotate_sketch("segment", x = 2, y = 30, xend = 3.5, yend = 20,
    colour = "blue", seed = 3L) +
  theme_sketch()
```

annotate_sketch_arrow *Add a one-off sketchy arrow annotation*

Description

The easiest way to point at something: a single hand-drawn arrow (with an optional handwriting label) that does not inherit the plot's aesthetics. A thin wrapper around `geom_sketch_arrow()` in the spirit of `ggplot2::annotate()`.

Usage

```
annotate_sketch_arrow(
  x,
  y,
  xend,
  yend,
  label = NULL,
  curvature = "auto",
  roughness = 1,
  arrow_type = "open",
  seed = NULL,
  ...
)
```

Arguments

<code>x, y</code>	Source point (where the label sits). Numeric, recycled.
<code>xend, yend</code>	Target point (where the arrow points). Numeric, recycled.

label Optional text shown at the source. NULL draws a bare arrow.
 curvature, roughness, arrow_type, seed
 Passed to [geom_sketch_arrow\(\)](#).
 ... Other arguments passed on to [geom_sketch_arrow\(\)](#) (e.g. colour, linewidth,
 arrow_length, family).

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
ggplot(faithful, aes(eruptions, waiting)) +
  geom_sketch_point(seed = 1L) +
  annotate_sketch_arrow(x = 2.2, y = 90, xend = 1.9, yend = 75,
    label = "short bursts", colour = "#C0392B",
    seed = 3L) +
  theme_sketch()
```

annotate_sketch_callout

Add a one-off sketchy callout annotation

Description

The easiest way to add a boxed note: a single hand-drawn callout (with an optional leader arrow) that does not inherit the plot's aesthetics. A thin wrapper around [geom_sketch_callout\(\)](#) in the spirit of [ggplot2::annotate\(\)](#).

Usage

```

annotate_sketch_callout(
  x,
  y,
  label,
  xend = NULL,
  yend = NULL,
  seed = NULL,
  ...
)

```

Arguments

<code>x, y</code>	Box position. Numeric, recycled.
<code>label</code>	Label text.
<code>xend, yend</code>	Optional target the leader points at. NULL (default) draws a boxed label with no leader.
<code>seed</code>	Passed to geom_sketch_callout() .
<code>...</code>	Other arguments passed on to geom_sketch_callout() (e.g. colour, fill, roughness, corner_radius, family).

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```

library(ggplot2)
ggplot(faithful, aes(eruptions, waiting)) +

```

```
geom_sketch_point(seed = 1L) +
  annotate_sketch_callout(x = 2.2, y = 95, label = "short waits",
                        xend = 1.9, yend = 75, seed = 3L) +
  theme_sketch()
```

annotate_sketch_highlight

Highlighter swipes and hand-drawn underlines

Description

Two one-off emphasis annotations (constant positions, `inherit.aes = FALSE`):

Usage

```
annotate_sketch_highlight(
  x,
  y,
  xend,
  yend,
  colour = "#f7e017",
  linewidth = 8,
  seed = NULL,
  ...
)

annotate_sketch_underline(
  x,
  y,
  xend,
  colour = "grey15",
  linewidth = 0.7,
  strokes = 1L,
  roughness = 1.6,
  bowing = 0.4,
  seed = NULL,
  ...
)
```

Arguments

<code>x, y, xend, yend</code>	Endpoint positions in data units (vectors recycle). <code>annotate_sketch_underline()</code> is horizontal: <code>yend</code> defaults to <code>y</code> .
<code>colour</code>	Ink colour. Highlight defaults to fluorescent yellow.
<code>linewidth</code>	Stroke width. The highlighter medium multiplies it into a wide band; the underline stays a line.
<code>seed</code>	Integer seed for reproducible wobble.

...	Other arguments passed to <code>geom_sketch_segment()</code> .
strokes	Number of overlapped underline strokes. Default 1.
roughness	Wobble amount. Underlines default a little shakier.
bowing	Bow of the underline stroke (kept low so repeated strokes stay together). Default 0.4.

Details

- `annotate_sketch_highlight()` lays a wide, translucent chisel-tip band (the "highlighter" medium) from (x, y) to (xend, yend) – swipe it over a line, a label or a region of interest like a fluorescent marker.
- `annotate_sketch_underline()` draws a quick wobbly stroke from (x, y) to (xend, y) – an underline for a data point or a piece of text. `strokes > 1` re-draws it with fresh wobble for an emphatic scrawl.

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: `GeomSketchAblin`, `GeomSketchArrow`, `GeomSketchBoxplot`, `GeomSketchBracket`, `GeomSketchCallout`, `GeomSketchChicklet`, `GeomSketchCol`, `GeomSketchContourFilled`, `GeomSketchCurve`, `GeomSketchDotplot`, `GeomSketchDumbbell`, `GeomSketchEdge`, `GeomSketchEllipse`, `GeomSketchEngrave`, `GeomSketchGantt`, `GeomSketchHex`, `GeomSketchLine`, `GeomSketchLinerange`, `GeomSketchLollipop`, `GeomSketchMarkCircle`, `GeomSketchMarkHull`, `GeomSketchPath`, `GeomSketchPoint`, `GeomSketchPolygon`, `GeomSketchRect`, `GeomSketchRibbon`, `GeomSketchRug`, `GeomSketchSegment`, `GeomSketchSfPolygon`, `GeomSketchSlope`, `GeomSketchSmooth`, `GeomSketchSpoke`, `GeomSketchTextRepel`, `GeomSketchViolin`, `StatSketchBeeswarm`, `StatSketchCalendar`, `StatSketchDensityRidges`, `StatSketchFunnel`, `StatSketchPie`, `StatSketchPyramid`, `StatSketchRadar`, `StatSketchStream`, `StatSketchTreemap`, `StatSketchWaffle`, `StatSketchWaterfall`, `annotate_sketch()`, `annotate_sketch_arrow()`, `annotate_sketch_callout()`, `geom_sketch_alluvial()`, `geom_sketch_arc_diagram()`, `geom_sketch_bin2d()`, `geom_sketch_bump()`, `geom_sketch_chord()`, `geom_sketch_contour()`, `geom_sketch_count()`, `geom_sketch_dendrogram()`, `geom_sketch_density()`, `geom_sketch_density2d()`, `geom_sketch_ecdf()`, `geom_sketch_function()`, `geom_sketch_histogram()`, `geom_sketch_jitter()`, `geom_sketch_marimekko()`, `geom_sketch_mosaic()`, `geom_sketch_parallel()`, `geom_sketch_qq()`, `geom_sketch_quantile()`, `geom_sketch_rose()`, `geom_sketch_sunburst()`, `geom_sketch_text()`, `sketch_graph()`

Examples

```
library(ggplot2)
ggplot(economics[1:60, ], aes(date, unemploy)) +
  geom_sketch_line(seed = 1L) +
  annotate_sketch_highlight(
    x = as.Date("1969-01-01"), y = 2800,
    xend = as.Date("1970-06-01"), yend = 2800
  ) +
  theme_sketch()
```

arrowhead

Build the ideal paths for one arrowhead

Description

Returns the un-roughened geometry of an arrowhead whose tip is at (*tipx*, *tipy*) and which points along *angle*. The grob layer roughens and paints it, so this stays pure geometry and reproduces on every device. Styles: "triangle_open" (a two-stroke V), "triangle_filled" (a solid triangle), "barb" (swept-back harpoon barbs), "fishtail" (a forked swallowtail), "dot" (a blob at the tip) and "bar" (a perpendicular tick).

Usage

```
arrowhead(
  tipx,
  tipy,
  angle,
  length,
  half_angle = 25 * pi/180,
  style = "triangle_open"
)
```

Arguments

<i>tipx</i> , <i>tipy</i>	Tip position (inch space).
<i>angle</i>	Direction the arrow points, in radians (the end tangent).
<i>length</i>	Head length in inches.
<i>half_angle</i>	Half-angle of the wings, in radians. Default ~25 degrees.
<i>style</i>	One of sketch_arrowheads() .

Value

A list with strokes (a list of 2-column (*x*, *y*) polylines to stroke), polygons (a list of (*x*, *y*) rings to fill) and dots (*list(x, y, r)* or NULL).

See Also

Other sketch-core: [curve_fill\(\)](#), [engrave_fill\(\)](#), [engrave_ladder\(\)](#), [hachure_fill\(\)](#), [hachure_fill_multi\(\)](#), [leader_path\(\)](#), [repel_layout\(\)](#), [rough_arc\(\)](#), [rough_bezier\(\)](#), [rough_ellipse\(\)](#), [roughen_polyline\(\)](#), [sketch_arrowheads\(\)](#), [sketch_fill\(\)](#), [sketch_fill_multi\(\)](#), [spray_scatter\(\)](#), [stroke_profile\(\)](#), [stroke_ribbon\(\)](#), [treemap_layout\(\)](#), [wash_bleed\(\)](#), [watercolor_wash\(\)](#), [watercolor_wash_multi\(\)](#)

Examples

```
arrowhead(1, 1, angle = 0, length = 0.2, style = "barb")
```

boil_gganimate

Boil a gganimate animation (sketch wobble + data transitions)

Description

Render a **gganimate** animation - any plot built with ggsketch geoms plus a `transition_*`() - so that, on top of gganimate's data tweening, the hand-drawn lines *boil*: every roughening seed is shifted once per frame, so the drawing shimmers and re-draws itself like a hand-animated cel while the bars grow, points fly, or a line draws itself along x. It is the moving-data companion to [animate_sketch\(\)](#), which boils a static plot.

Usage

```
boil_gganimate(
  animation,
  nframes = 100L,
  fps = 10,
  intensity = 1,
  detail = 1L,
  file = NULL,
  width = 7,
  height = 5,
  units = "in",
  res = 120,
  background = "white",
  device = NULL,
  seed = NULL,
  renderer = c("auto", "gifski", "magick", "none"),
  loop = TRUE
)
```

Arguments

animation	A gganimate animation: a ggplot using ggsketch geoms with a <code>transition_*</code> () added (class <code>gganim</code>).
nframes	Number of frames. Default 100 (gganimate's default).
fps	Frames per second in the output. Default 10.
intensity	Boil strength: scales how far the seed jitter steps each frame. 1 (default) matches animate_sketch() ; higher shimmers more.
detail	Tween sub-frames per frame, passed through to gganimate's prerender for smoother motion (rendered frames are sampled back down to nframes). Default 1.
file	Output path (e.g. a .gif). If NULL (default), no file is written and the frame paths are returned invisibly.
width, height, units, res	Frame size and resolution. units one of "in", "cm", "mm", "px".

background	Frame background colour. Default "white".
device	Graphics device: NULL (default; "ragg" when installed, else "png"), "ragg"/"png", or any device string gganimate accepts ("ragg_png", "svglite", ...).
seed	Integer offset for the boil sequence (NULL = 0, so frame 1 is un-boiled). Change it to vary the shimmer without touching the plot.
renderer	GIF backend: "auto" (default), "gifski", "magick", or "none" (always return frame paths).
loop	Loop the output forever? Default TRUE.

Details

The boil rides on the global `ggsketch.seed_jitter` option (the same lever `animate_sketch()` uses), advanced by a per-frame counter so frame 1 is the un-boiled drawing and the whole animation is reproducible. Frames are stitched with the same backend as `animate_sketch()` (`gifski` or `magick`); if neither is installed the frame paths are returned. `gganimate` itself is an optional dependency.

Value

Invisibly, the output path (when written) or a character vector of frame image paths.

See Also

`animate_sketch()` for boiling or drawing-on a static plot.

Examples

```
library(ggplot2)
library(gganimate)
p <- ggplot(mpg, aes(class, fill = drv)) +
  geom_sketch_bar(position = "dodge", seed = 1L) +
  scale_fill_sketch() +
  theme_sketch() +
  transition_states(drv, transition_length = 2, state_length = 1)
boil_gganimate(p, nframes = 30, file = tempfile(fileext = ".gif"))
```

Description

A drop-in replacement for `ggplot2::coord_cartesian()` that draws the *frame* hand-drawn: the panel gridlines and axis ticks are rendered as roughened sketch grobs, so the frame matches the marks – under any theme, not only `theme_sketch()`. It reuses `ggplot2`'s own gridline and axis layout and only swaps how those elements are drawn, so limits, expansion, and clipping behave exactly like `coord_cartesian()`.

Usage

```
coord_sketch(
  xlim = NULL,
  ylim = NULL,
  expand = TRUE,
  default = FALSE,
  clip = "on",
  roughness = 0.5,
  bowing = 0.5,
  n_passes = 2L,
  seed = NULL,
  rough_grid = TRUE,
  rough_ticks = TRUE
)
```

Arguments

<code>xlim, ylim</code>	Limits for the x and y axes (as in ggplot2::coord_cartesian()).
<code>expand</code>	If TRUE (default), add the standard expansion around the data.
<code>default</code>	Is this the default coordinate system? Default FALSE.
<code>clip</code>	Should drawing be clipped to the panel ("on", default) or not ("off")?
<code>roughness, bowing, n_passes</code>	Sketch parameters for the frame. Gentle defaults suited to gridlines (0.5, 0.5, 2).
<code>seed</code>	Integer seed for reproducible wobble. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
<code>rough_grid, rough_ticks</code>	Roughen the gridlines / axis ticks? Both default TRUE; set one to FALSE to leave that element crisp.

Details

The panel *border* is a plot-level theme element (not part of the coordinate system), so to roughen it as well, combine `coord_sketch()` with `theme_sketch(rough_frame = TRUE)` or set `panel.border = element_sketch_rect(...)`.

Value

A ggproto Coord object to add to a plot.

See Also

Other sketch-theme: [CoordSketchPolar](#), [element_sketch_line\(\)](#), [ggsketch_check_fonts\(\)](#), [ggsketch_save\(\)](#), [register_sketch_font\(\)](#), [scale_pressure_continuous\(\)](#), [scale_roughness_continuous\(\)](#), [scale_sketch](#), [scale_tone_continuous\(\)](#), [sketch_palette\(\)](#), [theme_sketch\(\)](#)

Examples

```
library(ggplot2)
# A rough frame under a plain (non-sketch) theme:
ggplot(mtcars, aes(wt, mpg)) +
  geom_sketch_point(seed = 1L) +
  coord_sketch(seed = 1L)
```

CoordSketchPolar

A hand-drawn polar coordinate system

Description

The polar companion to `coord_sketch()`: a drop-in replacement for `ggplot2::coord_polar()` that draws the circular grid hand-drawn. The radial and angular gridlines are rendered as roughened sketch grobs, so pie/rose charts and circular bar plots get a frame that matches the marks – under any theme. It reuses all of `ggplot2`'s polar layout and only swaps how the grid is drawn.

Usage

```
coord_sketch_polar(
  theta = "x",
  start = 0,
  direction = 1,
  clip = "on",
  roughness = 0.5,
  bowing = 0.5,
  n_passes = 2L,
  seed = NULL,
  rough_grid = TRUE
)
```

Arguments

<code>theta</code>	Variable mapped to angle ("x" or "y"). Default "x".
<code>start</code>	Offset of the starting point, in radians. Default 0.
<code>direction</code>	1 clockwise, -1 anticlockwise. Default 1.
<code>clip</code>	Should drawing be clipped to the panel ("on", default) or not ("off")?
<code>roughness, bowing, n_passes</code>	Sketch parameters for the grid. Gentle defaults suited to gridlines (0.5, 0.5, 2).
<code>seed</code>	Integer seed for reproducible wobble. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
<code>rough_grid</code>	Roughen the gridlines? Default TRUE.

Value

A ggproto Coord object to add to a plot.

See Also

Other sketch-theme: `CoordSketch`, `element_sketch_line()`, `ggsketch_check_fonts()`, `ggsketch_save()`, `register_sketch_font()`, `scale_pressure_continuous()`, `scale_roughness_continuous()`, `scale_sketch`, `scale_tone_continuous()`, `sketch_palette()`, `theme_sketch()`

Examples

```
library(ggplot2)
df <- data.frame(g = c("a", "b", "c", "d"), v = c(3, 5, 2, 4))
# A hand-drawn circular bar (rose) chart:
ggplot(df, aes(g, v, fill = g)) +
  geom_sketch_col(seed = 1L) +
  coord_sketch_polar(seed = 1L) +
  theme_sketch()
```

curve_fill

Flatten a closed Bezier boundary to a polygon, then fill

Description

For area/ribbon/density geoms: converts a curved boundary (list of Bezier control-point sets) into a polygon approximation, then applies `sketch_fill`.

Usage

```
curve_fill(bezier_list, tol = 0.001, rdp_eps = 1e-04, ...)
```

Arguments

<code>bezier_list</code>	List of 4-element lists, each with P0, P1, P2, P3 (each a length-2 c(x,y) vector in inch space). The list describes a closed path.
<code>tol</code>	Flatness tolerance for flattening. Default 1e-3.
<code>rdp_eps</code>	RDP epsilon. Default 1e-4.
<code>...</code>	Passed to <code>sketch_fill</code> .

Value

List of fill-line segments (same structure as `sketch_fill`).

See Also

Other sketch-core: `arrowhead()`, `engrave_fill()`, `engrave_ladder()`, `hachure_fill()`, `hachure_fill_multi()`, `leader_path()`, `repel_layout()`, `rough_arc()`, `rough_bezier()`, `rough_ellipse()`, `roughen_polyline()`, `sketch_arrowheads()`, `sketch_fill()`, `sketch_fill_multi()`, `spray_scatter()`, `stroke_profile()`, `stroke_ribbon()`, `treemap_layout()`, `wash_bleed()`, `watercolor_wash()`, `watercolor_wash_multi()`

element_sketch_line	<i>Hand-drawn theme elements</i>
---------------------	----------------------------------

Description

Sketch counterparts of `ggplot2::element_line()` and `ggplot2::element_rect()`. Use them in `ggplot2::theme()` (or via `theme_sketch(rough_frame = TRUE)`) to render gridlines, panel borders, and axis ticks with the same wobbly, double-stroke look as the geoms. They accept the usual element arguments plus the shared sketch parameters (`roughness`, `bowing`, `n_passes`, `seed`).

Usage

```
element_sketch_line(  
  colour = NULL,  
  linewidth = NULL,  
  linetype = NULL,  
  lineend = NULL,  
  color = NULL,  
  roughness = 0.5,  
  bowing = 0.5,  
  n_passes = 2L,  
  seed = NULL,  
  ...  
)  
  
element_sketch_rect(  
  fill = NULL,  
  colour = NULL,  
  linewidth = NULL,  
  linetype = NULL,  
  color = NULL,  
  roughness = 0.6,  
  bowing = 0.4,  
  n_passes = 2L,  
  seed = NULL,  
  ...  
)
```

Arguments

<code>colour, color</code>	Line/border colour.
<code>linewidth</code>	Line width.
<code>linetype</code>	Line type.
<code>lineend</code>	Line end style.
<code>roughness, bowing, n_passes, seed</code>	Sketch parameters (see <code>geom_sketch_path()</code>). Defaults are gentle, suited to a frame.

...	Passed to the underlying ggplot2 element constructor.
fill	Fill colour (element_sketch_rect() only). NA draws the outline only - the usual choice for a panel border.

Value

A ggplot2 theme element carrying an element_sketch_* subclass.

See Also

Other sketch-theme: [CoordSketch](#), [CoordSketchPolar](#), [ggskech_check_fonts\(\)](#), [ggskech_save\(\)](#), [register_sketch_font\(\)](#), [scale_pressure_continuous\(\)](#), [scale_roughness_continuous\(\)](#), [scale_sketch](#), [scale_tone_continuous\(\)](#), [sketch_palette\(\)](#), [theme_sketch\(\)](#)

Examples

```
library(ggplot2)
ggplot(mtcars, aes(wt, mpg)) +
  geom_sketch_point(seed = 1L) +
  theme_sketch() +
  theme(panel.grid.major = element_sketch_line(colour = "grey80", seed = 7L))
```

element_sketch_paper	<i>Paper-ground theme element</i>
----------------------	-----------------------------------

Description

A panel-background element that paints a simulated paper texture behind the data: ruled notebook lines, a graph grid, a dot grid, aged blotches, or a blueprint / chalkboard / kraft ground. Use it as panel.background in [ggplot2::theme\(\)](#), or – more simply – via [theme_sketch\(paper = \)](#). Everything is drawn as vector primitives, so it reproduces on every device.

Usage

```
element_sketch_paper(kind = "notebook", ground = NULL, seed = NULL, ...)
```

Arguments

kind	A paper from sketch_papers() .
ground	Optional override for the ground (fill) colour.
seed	Integer seed for the aged blotches.
...	Passed to ggplot2::element_rect() .

Value

A ggplot2 theme element carrying an element_sketch_paper subclass.

See Also

Other sketch-paper: [paper_grain\(\)](#), [paper_primitives\(\)](#), [paper_spec\(\)](#), [sketch_papers\(\)](#)

Examples

```
library(ggplot2)
ggplot(mtcars, aes(wt, mpg)) +
  geom_sketch_point(seed = 1L) +
  theme_sketch() +
  theme(panel.background = element_sketch_paper("graph"))
```

engrave_fill	<i>Fill a region with tonal engraving (line density follows a tone field)</i>
--------------	---

Description

The engraving counterpart of [hachure_fill_multi\(\)](#): instead of one uniform hatch, it lays down a [engrave_ladder\(\)](#) of hatch layers and keeps each layer only where the field tone reaches that layer's threshold, so line density (and cross-hatching) tracks the tone continuously across the region. Holes are handled exactly as in [hachure_fill_multi\(\)](#) (shared even-odd scan-line).

Usage

```
engrave_fill(
  rings,
  field,
  ladder = NULL,
  roughness = 0.5,
  bowing = 0,
  sample_step = NULL,
  seed = NULL,
  ...
)
```

Arguments

rings	A list of rings, each <code>list(x, y)</code> of vertex coordinates in inch/data space (see hachure_fill_multi()).
field	A vectorised tone function <code>function(x, y)</code> returning a value in $[0, 1]$ per point (0 = lightest/paper, 1 = darkest/solid).
ladder	A hatch ladder from engrave_ladder() ; if NULL, a default ladder is built from <code>....</code>
roughness, bowing	Sketch params applied to each surviving stroke. Defaults 0.5 and 0.
sample_step	Tone-sampling step along each scan line (inches). NULL (default) uses a fraction of the finest ladder pitch.
seed	Integer seed.
...	Passed to engrave_ladder() when ladder is NULL.

Value

A list of 2-column (x, y) stroke matrices (same structure as `hachure_fill_multi()`), densest where the field is darkest.

See Also

Other sketch-core: `arrowhead()`, `curve_fill()`, `engrave_ladder()`, `hachure_fill()`, `hachure_fill_multi()`, `leader_path()`, `repel_layout()`, `rough_arc()`, `rough_bezier()`, `rough_ellipse()`, `roughen_polyline()`, `sketch_arrowheads()`, `sketch_fill()`, `sketch_fill_multi()`, `spray_scatter()`, `stroke_profile()`, `stroke_ribbon()`, `treemap_layout()`, `wash_bleed()`, `watercolor_wash()`, `watercolor_wash_multi()`

engrave_ladder

Build a tonal hatch ladder for engraving fills

Description

An engraving ladder is an ordered list of hatch layers; each is applied only where the tone field is at least its threshold, so darker regions accumulate more (and finer, cross-hatched) layers. Defaults trace the classic etching progression: a sparse base layer, then denser same-angle lines, then a second angle (cross-hatch), then the fine angles that read as black.

Usage

```
engrave_ladder(
  n_levels = 5L,
  base_gap = 0.1,
  gap_ratio = 0.62,
  base_angle = 45,
  cross_after = 3L,
  cross_angle = 90,
  tone_floor = 0.12,
  tone_ceiling = 0.92
)
```

Arguments

<code>n_levels</code>	Number of hatch layers. Default 5.
<code>base_gap</code>	Pitch (inches) of the sparsest layer. Each subsequent layer tightens geometrically toward $\text{base_gap} * \text{gap_ratio}^{(n_levels - 1)}$. Default 0.10.
<code>gap_ratio</code>	Multiplicative pitch shrink per layer ($0 < r \leq 1$; smaller = faster densening). Default 0.62.
<code>base_angle</code>	Angle (degrees) of the first layer. Default 45.
<code>cross_after</code>	Layer index (1-based) at which cross-hatching begins; from this layer on, angles alternate by <code>cross_angle</code> . Default 3.
<code>cross_angle</code>	Angular offset (degrees) of the cross direction. Default 90.

tone_floor, tone_ceiling

Tone thresholds of the first and last layers; the layers' thresholds are spread evenly between them. A region with tone below tone_floor is left blank (paper); tone at or above tone_ceiling gets every layer. Defaults 0.12 and 0.92.

Value

A list of layers, each `list(gap, angle, threshold)`.

See Also

Other sketch-core: [arrowhead\(\)](#), [curve_fill\(\)](#), [engrave_fill\(\)](#), [hachure_fill\(\)](#), [hachure_fill_multi\(\)](#), [leader_path\(\)](#), [repel_layout\(\)](#), [rough_arc\(\)](#), [rough_bezier\(\)](#), [rough_ellipse\(\)](#), [roughen_polyline\(\)](#), [sketch_arrowheads\(\)](#), [sketch_fill\(\)](#), [sketch_fill_multi\(\)](#), [spray_scatter\(\)](#), [stroke_profile\(\)](#), [stroke_ribbon\(\)](#), [treemap_layout\(\)](#), [wash_bleed\(\)](#), [watercolor_wash\(\)](#), [watercolor_wash_multi\(\)](#)

force_layout

Force-directed graph layout (Fruchterman-Reingold)

Description

A pure-R implementation of the Fruchterman-Reingold force-directed layout, so [geom_sketch_node\(\)](#) / [geom_sketch_edge\(\)](#) can place a network with no external graph dependency. Repulsive forces push every node apart; attractive forces pull edge-connected nodes together; a cooling schedule settles the system. Coordinates are returned rescaled to roughly `[-1, 1]` on both axes.

Usage

```
force_layout(edges, n_nodes = NULL, niter = 500L, seed = NULL)
```

Arguments

edges	A two-column matrix or data frame of 1-based integer node indices , one row per edge (from, to). May have zero rows (an edgeless graph, laid out on a circle).
n_nodes	Number of nodes. Defaults to the largest index in edges (so isolated high-index nodes need this set explicitly).
niter	Number of iterations. Default 500.
seed	Integer seed for the initial placement. NULL uses <code>getOption("ggsketch.seed", 1L)</code> . The layout is otherwise deterministic.

Value

A data frame with columns `x` and `y`, one row per node in index order.

Examples

```
# A small ring of five nodes
e <- cbind(1:5, c(2:5, 1))
force_layout(e, seed = 1L)
```

geom_sketch_alluvial *Sketchy alluvial / Sankey diagram*

Description

Draws a hand-drawn alluvial diagram: two or more categorical axes, each a stack of strata (boxes), connected by flows (ribbons) whose thickness is the frequency of each category combination. Like [geom_sketch_chord\(\)](#) it is a constructor that returns a list of ordinary sketch layers (roughened strata, roughened flow ribbons with smooth S-curved edges, and stratum labels), so it composes with `+` and any fill scale. It draws in ordinary x/y space; pair it with `theme_void()` or `theme_sketch()`. No new dependencies (cf. `ggalluvial`, `ggsankey`).

Usage

```
geom_sketch_alluvial(
  data,
  axes,
  value = NULL,
  fill = NULL,
  ...,
  box_width = 0.18,
  stratum_gap = 0.02,
  fill_style = "solid",
  alpha = 0.7,
  strata_fill = "grey85",
  label = TRUE,
  label_size = 3.5,
  label_colour = "grey20",
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL
)
```

Arguments

<code>data</code>	A wide data frame: one column per axis, one row per observation (or per group, with a value weight).
<code>axes</code>	Character vector of column names to use as axes, in order (at least two).
<code>value</code>	Optional column name giving each row's weight (NULL = 1 each).

fill	Optional column name whose category colours each flow (NULL = the first axis). Add scale_fill_sketch() or any fill scale to style it.
...	Other arguments passed on to the flow layer.
box_width	Width of the stratum boxes in x units. Default 0.18.
stratum_gap	Vertical gap between adjacent strata, as a fraction of the axis total. Default 0.02; 0 stacks them flush.
fill_style	Flow fill style; see geom_sketch_polygon() . Default "solid".
alpha	Flow opacity. Default 0.7.
strata_fill	Fill colour of the stratum boxes. Default "grey85".
label	Draw stratum labels? Default TRUE.
label_size, label_colour	Label text controls.
roughness, bowing, n_passes, seed	Sketch parameters.

Value

A list of ggplot2 layers.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
df <- as.data.frame(Titanic)
ggplot() +
  geom_sketch_alluvial(df, axes = c("Class", "Sex", "Survived"),
    value = "Freq", seed = 1L) +
  scale_fill_sketch() +
  theme_void()
```

 geom_sketch_arc_diagram

Sketchy arc diagram

Description

Draws a hand-drawn arc diagram: nodes are placed along a horizontal line and every weighted relation is a roughened semicircle arching over (or under) the axis between its two endpoints. Like [geom_sketch_chord\(\)](#) but linear, it is a constructor that returns a list of ordinary sketch layers (arcs, node points and handwriting labels), so it composes with `+`; pair it with `theme_void()` or `theme_sketch()`. Edges are coloured by their source node; add [scale_colour_sketch\(\)](#) (or any colour scale). No new dependencies.

Usage

```
geom_sketch_arc_diagram(
  data,
  from,
  to,
  value,
  ...,
  nodes = NULL,
  side = c("top", "bottom"),
  node_size = 3,
  node_colour = "grey25",
  max_linewidth = 2,
  alpha = 0.7,
  label = TRUE,
  label_size = 3.5,
  label_colour = "grey20",
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL
)
```

Arguments

<code>data</code>	A data frame of weighted edges (one row per relation).
<code>from, to</code>	Unquoted column names giving the two endpoints of each edge.
<code>value</code>	Unquoted column name giving the edge weight. Default: every edge counts as 1 (and node size is the edge count).
<code>...</code>	Other arguments passed on to the arc layer.
<code>nodes</code>	Optional character vector fixing the node order along the axis (default: sorted unique endpoints).

side Which way the arcs bow: "top" (default) or "bottom".

node_size, node_colour Node-point size (scaled by incident weight) and colour.

max_linewidth Arc stroke width at the heaviest edge (lighter edges scale down). Default 2.

alpha Arc opacity. Default 0.7.

label Draw node labels? Default TRUE.

label_size, label_colour Label text controls.

roughness, bowing, n_passes, seed Sketch parameters.

Value

A list of ggplot2 layers.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
rel <- data.frame(
  from = c("A", "A", "B", "C", "C", "D"),
  to   = c("B", "C", "C", "D", "E", "E"),
  value = c(3, 1, 2, 4, 2, 1)
)
ggplot() +
  geom_sketch_arc_diagram(rel, from, to, value, seed = 1L) +
  scale_colour_sketch() +
  theme_void()
```

geom_sketch_bin2d	<i>Sketchy 2-D bin heatmap</i>
-------------------	--------------------------------

Description

Bins data into a rectangular grid and draws each cell as a hand-drawn rectangle shaded by count - the sketch analogue of `ggplot2::geom_bin_2d()` / `ggplot2::stat_bin_2d()`. `geom_sketch_bin2d()` and `geom_sketch_bin_2d()` are aliases.

Usage

```
geom_sketch_bin2d(  
  mapping = NULL,  
  data = NULL,  
  stat = "bin2d",  
  position = "identity",  
  ...,  
  bins = 30,  
  binwidth = NULL,  
  roughness = 1,  
  bowing = 1,  
  n_passes = 2L,  
  seed = NULL,  
  fill_style = "hachure",  
  hachure_angle = 45,  
  hachure_gap = NULL,  
  fill_weight = 0.5,  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

```
geom_sketch_bin_2d(  
  mapping = NULL,  
  data = NULL,  
  stat = "bin2d",  
  position = "identity",  
  ...,  
  bins = 30,  
  binwidth = NULL,  
  roughness = 1,  
  bowing = 1,  
  n_passes = 2L,  
  seed = NULL,  
  fill_style = "hachure",  
  hachure_angle = 45,  
  hachure_gap = NULL,
```

```

    fill_weight = 0.5,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

```

Arguments

mapping	Set of aesthetic mappings created by ggplot2::aes() .
data	Data to display.
stat	Statistical transformation. Default "identity" for geom_sketch_col() ; "count" for geom_sketch_bar() .
position	Position adjustment. Default "stack".
...	Other arguments passed on to the layer.
bins	Number of bins in each direction. Default 30.
binwidth	Bin width(s); overrides bins when supplied.
roughness	Non-negative roughness (0 = straight lines). A mappable aesthetic (default 1): pass a constant, or map it per bar with aes(roughness =) (rescaled by scale_roughness_continuous()).
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses getOption("ggsketch.seed", 1L) .
fill_style	One of "hachure", "cross_hatch", "zigzag", "zigzag_line", "scribble", "dots", "dashed", "stipple", "pencil_shade", or "solid". Default "hachure".
hachure_angle	Fill line angle in degrees. Default 45.
hachure_gap	Fill line gap in device inches (NULL = 15% of the bar's smaller drawn side, clamped to [0.04, 0.4] inches).
fill_weight	Stroke weight for fill lines. Default 0.5.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A [ggplot2](#) layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#),

GeomSketchSlope, GeomSketchSmooth, GeomSketchSpoke, GeomSketchTextRepel, GeomSketchViolin, StatSketchBeeswarm, StatSketchCalendar, StatSketchDensityRidges, StatSketchFunnel, StatSketchPie, StatSketchPyramid, StatSketchRadar, StatSketchStream, StatSketchTreemap, StatSketchWaffle, StatSketchWaterfall, annotate_sketch(), annotate_sketch_arrow(), annotate_sketch_callout(), annotate_sketch_highlight(), geom_sketch_alluvial(), geom_sketch_arc_diagram(), geom_sketch_bump(), geom_sketch_chord(), geom_sketch_contour(), geom_sketch_count(), geom_sketch_dendrogram(), geom_sketch_density(), geom_sketch_density2d(), geom_sketch_ecdf(), geom_sketch_function(), geom_sketch_histogram(), geom_sketch_jitter(), geom_sketch_marimekko(), geom_sketch_mosaic(), geom_sketch_parallel(), geom_sketch_qq(), geom_sketch_quantile(), geom_sketch_rose(), geom_sketch_sunburst(), geom_sketch_text(), sketch_graph()

Examples

```
library(ggplot2)
ggplot(faithful, aes(eruptions, waiting)) +
  geom_sketch_bin2d(bins = 12, seed = 1L) +
  theme_sketch()
```

geom_sketch_bump	<i>Sketchy bump (ranking) chart</i>
------------------	-------------------------------------

Description

Draws a hand-drawn bump chart: each series' rank at every time point, joined across adjacent times by smooth roughened curves so a crossing reads as one series overtaking another. Like [geom_sketch_alluvial\(\)](#) it is a constructor returning a list of ordinary sketch layers (connector ribbons, rank points and end labels), so it composes with `+`; map a colour scale over the series and pair with `theme_void()` or `theme_sketch()`. No new dependencies (cf. `ggbump`).

Usage

```
geom_sketch_bump(
  data,
  x,
  group,
  value,
  ...,
  direction = c("desc", "asc"),
  point_size = 3,
  line_width = 1.2,
  alpha = 0.9,
  label = TRUE,
  label_size = 3.5,
  label_colour = "grey20",
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL
)
```

Arguments

<code>data</code>	A long data frame (one row per series per time point).
<code>x, group, value</code>	Unquoted column names: the (ordinal) time, the series, and the value ranked within each time.
<code>...</code>	Other arguments passed on to the connector layer.
<code>direction</code>	"desc" (default) ranks the highest value as rank 1, drawn at the top; "asc" flips it.
<code>point_size</code>	Size of the rank points. Default 3.
<code>line_width</code>	Connector line width. Default 1.2.
<code>alpha</code>	Connector opacity. Default 0.9.
<code>label</code>	Draw series labels at the first and last time point? Default TRUE.
<code>label_size, label_colour</code>	Label text controls.
<code>roughness, bowing, n_passes, seed</code>	Sketch parameters.

Value

A list of ggplot2 layers.

See Also

Other sketch-geoms: [GeomSketchAbline](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
df <- data.frame(
  year = rep(2018:2021, each = 4),
  team = rep(c("A", "B", "C", "D"), times = 4),
  pts = c(10, 8, 6, 4, 6, 10, 8, 4, 8, 6, 10, 5, 4, 8, 6, 12)
)
```

```
ggplot() +
  geom_sketch_bump(df, year, team, pts, seed = 1L) +
  scale_colour_sketch() +
  theme_void()
```

geom_sketch_chord	<i>Sketchy chord diagram</i>
-------------------	------------------------------

Description

Draws a hand-drawn chord diagram: nodes are placed on a circle, each given an arc proportional to its total flow, and every weighted relation becomes a ribbon whose ends are sub-arcs on the two nodes, joined by curves through the centre. Like `geom_sketch_sf()`, this is a constructor that returns a list of ordinary sketch layers (roughened ribbons, rim segments and handwriting labels), so it composes with `+`; pair it with `coord_equal()` and `theme_void()`. No new dependencies (cf. `circlize::chordDiagram()`).

Usage

```
geom_sketch_chord(
  data,
  from,
  to,
  value,
  ...,
  gap = 0.04,
  rim_width = 0.1,
  fill_style = "solid",
  alpha = 0.65,
  label = TRUE,
  label_size = 4,
  label_colour = "grey20",
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL
)
```

Arguments

<code>data</code>	A data frame of weighted edges (one row per relation).
<code>from, to</code>	Unquoted column names giving the two endpoints of each edge.
<code>value</code>	Unquoted column name giving the edge weight. Default: every edge counts as 1.
<code>...</code>	Other arguments passed on to the ribbon layer.
<code>gap</code>	Angular gap between adjacent nodes, in radians. Default 0.04.

rim_width	Width of the node rim, as a fraction of the radius. Default 0.1.
fill_style	Ribbon fill style; see geom_sketch_polygon() . Default "solid".
alpha	Ribbon fill opacity. Default 0.65.
label	Draw node labels? Default TRUE.
label_size, label_colour	Label text controls.
roughness, bowing, n_passes, seed	Sketch parameters.

Details

Supply an edge table as data and name the from, to and value columns (unquoted). Ribbons are coloured by their source node; add [scale_fill_sketch\(\)](#) (or any fill scale) to control the palette.

Value

A list of ggplot2 layers.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
trade <- data.frame(
  from = c("A", "A", "B", "C", "C", "D"),
  to   = c("B", "C", "C", "D", "A", "B"),
  value = c(5, 3, 2, 4, 1, 6)
)
ggplot() +
  geom_sketch_chord(trade, from, to, value, seed = 1L) +
  scale_fill_sketch() +
  coord_equal() +
  theme_void()
```

geom_sketch_contour *Sketchy contour lines*

Description

geom_sketch_contour() draws contour lines of a 3-D surface with a hand-drawn stroke (the sketch analogue of `ggplot2::geom_contour()` / `ggplot2::stat_contour()`); it needs x, y, and z aesthetics. Each contour piece becomes one roughened path.

Usage

```
geom_sketch_contour(
  mapping = NULL,
  data = NULL,
  stat = "contour",
  position = "identity",
  ...,
  bins = NULL,
  binwidth = NULL,
  breaks = NULL,
  roughness = 0.7,
  bowing = 0.5,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

Arguments

mapping	Set of aesthetic mappings created by <code>ggplot2::aes()</code> .
data	Data to display.
stat	Statistical transformation (default "identity").
position	Position adjustment (default "identity").
...	Other arguments passed on to the layer.
bins	Number of contour bins. Overridden by binwidth or breaks.
binwidth	Distance between contour bins.
breaks	Explicit numeric contour breaks; overrides bins/binwidth.
roughness	Non-negative roughness parameter (0 = straight). Default 1.
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes for the double-stroke effect. Default 2.
seed	Integer seed for reproducibility. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .

<code>na.rm</code>	If FALSE (default), missing values are removed with a warning.
<code>show.legend</code>	Logical. Should this layer be included in the legend?
<code>inherit.aes</code>	If FALSE, override the default aesthetics.

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAbline](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
ggplot(faithfuld, aes(waiting, eruptions, z = density)) +
  geom_sketch_contour(colour = "#2E4053", seed = 1L) +
  theme_sketch()
```

<code>geom_sketch_count</code>	<i>Sketchy count geom</i>
--------------------------------	---------------------------

Description

Like [ggplot2::geom_count\(\)](#): draws a sketch point at each (x, y) location sized by the number of observations there, via [ggplot2::stat_sum\(\)](#). Pair with [ggplot2::scale_size_area\(\)](#) for honest area scaling.

Usage

```
geom_sketch_count(
  mapping = NULL,
  data = NULL,
  stat = "sum",
  position = "identity",
  ...,
  roughness = NULL,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

Arguments

mapping	Set of aesthetic mappings. Supports x, y, colour, size, alpha, and roughness.
data	Data to display.
stat	Statistical transformation (default "identity").
position	Position adjustment (default "identity").
...	Other arguments passed on to the layer.
roughness	Non-negative roughness parameter (0 = straight). Default 1.
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes for the double-stroke effect. Default 2.
seed	Integer seed for reproducibility. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
na.rm	If FALSE (default), missing values are removed with a warning.
show.legend	Logical. Should this layer be included in the legend?
inherit.aes	If FALSE, override the default aesthetics.

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAbline](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#),

```

StatSketchPie, StatSketchPyramid, StatSketchRadar, StatSketchStream, StatSketchTreemap,
StatSketchWaffle, StatSketchWaterfall, annotate_sketch(), annotate_sketch_arrow(),
annotate_sketch_callout(), annotate_sketch_highlight(), geom_sketch_alluvial(), geom_sketch_arc_diagram(),
geom_sketch_bin2d(), geom_sketch_bump(), geom_sketch_chord(), geom_sketch_contour(),
geom_sketch_dendrogram(), geom_sketch_density(), geom_sketch_density2d(), geom_sketch_ecdf(),
geom_sketch_function(), geom_sketch_histogram(), geom_sketch_jitter(), geom_sketch_marimekko(),
geom_sketch_mosaic(), geom_sketch_parallel(), geom_sketch_qq(), geom_sketch_quantile(),
geom_sketch_rose(), geom_sketch_sunburst(), geom_sketch_text(), sketch_graph()

```

Examples

```

library(ggplot2)
ggplot(mpg, aes(cty, hwy)) +
  geom_sketch_count(colour = "#7BAFD4", seed = 1L) +
  theme_sketch()

```

```
geom_sketch_dendrogram
```

Sketchy dendrogram (hierarchical-clustering tree)

Description

Draws a hand-drawn dendrogram: leaves along one axis and each merge bracketed at its cluster height, with the right-angle elbows roughened into a hand-drawn wobble. Pass either a ready `stats::hclust()` object or a numeric data frame / matrix (a tree is then computed via `stats::hclust(stats::dist(x))`). Like `geom_sketch_chord()` it is a constructor returning a list of ordinary sketch layers (elbow paths + leaf labels), so it composes with `+`; pair it with `theme_void()` or `theme_sketch()`. Pure base stats; no new dependencies (cf. `ggdendro`).

Usage

```

geom_sketch_dendrogram(
  data,
  ...,
  orientation = c("up", "down", "left", "right"),
  method = "complete",
  distance = "euclidean",
  line_colour = "grey25",
  line_width = 0.8,
  label = TRUE,
  label_size = 3,
  label_colour = "grey20",
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL
)

```

Arguments

data	An <code>stats::hclust()</code> object, or a numeric data frame / matrix to cluster (non-numeric columns are dropped; row names become leaf labels).
...	Other arguments passed on to the connector layer.
orientation	Tree direction: "up" (default, root at top), "down", "left", or "right".
method, distance	Linkage method and distance metric, used only when data is not already an <code>hclust</code> (passed to <code>stats::hclust()</code> and <code>stats::dist()</code>). Defaults "complete" / "euclidean".
line_colour, line_width	Connector colour and width.
label	Draw leaf labels? Default TRUE.
label_size, label_colour	Label text controls.
roughness, bowing, n_passes, seed	Sketch parameters.

Value

A list of ggplot2 layers.

See Also

Other sketch-geoms: `GeomSketchAblin`, `GeomSketchArrow`, `GeomSketchBoxplot`, `GeomSketchBracket`, `GeomSketchCallout`, `GeomSketchChicklet`, `GeomSketchCol`, `GeomSketchContourFilled`, `GeomSketchCurve`, `GeomSketchDotplot`, `GeomSketchDumbbell`, `GeomSketchEdge`, `GeomSketchEllipse`, `GeomSketchEngrave`, `GeomSketchGantt`, `GeomSketchHex`, `GeomSketchLine`, `GeomSketchLinerange`, `GeomSketchLollipop`, `GeomSketchMarkCircle`, `GeomSketchMarkHull`, `GeomSketchPath`, `GeomSketchPoint`, `GeomSketchPolygon`, `GeomSketchRect`, `GeomSketchRibbon`, `GeomSketchRug`, `GeomSketchSegment`, `GeomSketchSfPolygon`, `GeomSketchSlope`, `GeomSketchSmooth`, `GeomSketchSpoke`, `GeomSketchTextRepel`, `GeomSketchViolin`, `StatSketchBeeswarm`, `StatSketchCalendar`, `StatSketchDensityRidges`, `StatSketchFunnel`, `StatSketchPie`, `StatSketchPyramid`, `StatSketchRadar`, `StatSketchStream`, `StatSketchTreemap`, `StatSketchWaffle`, `StatSketchWaterfall`, `annotate_sketch()`, `annotate_sketch_arrow()`, `annotate_sketch_callout()`, `annotate_sketch_highlight()`, `geom_sketch_alluvial()`, `geom_sketch_arc_diagram`, `geom_sketch_bin2d()`, `geom_sketch_bump()`, `geom_sketch_chord()`, `geom_sketch_contour()`, `geom_sketch_count()`, `geom_sketch_density()`, `geom_sketch_density2d()`, `geom_sketch_ecdf()`, `geom_sketch_function()`, `geom_sketch_histogram()`, `geom_sketch_jitter()`, `geom_sketch_marimekko()`, `geom_sketch_mosaic()`, `geom_sketch_parallel()`, `geom_sketch_qq()`, `geom_sketch_quantile()`, `geom_sketch_rose()`, `geom_sketch_sunburst()`, `geom_sketch_text()`, `sketch_graph()`

Examples

```
library(ggplot2)
ggplot() +
  geom_sketch_dendrogram(mtcars[1:8, c("mpg", "wt", "hp")], seed = 1L) +
  theme_void()
```

geom_sketch_density *Sketchy density geom*

Description

Draws a kernel density estimate as a hand-drawn filled area - the sketch analogue of `ggplot2::geom_density()`. Drawing is delegated to [GeomSketchArea](#); the kernel density is computed by `ggplot2::stat_density()`.

Usage

```
geom_sketch_density(
  mapping = NULL,
  data = NULL,
  stat = "density",
  position = "identity",
  ...,
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  fill_style = "hachure",
  hachure_angle = 45,
  hachure_gap = NULL,
  fill_weight = 0.5,
  outline.type = "full",
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

Arguments

mapping	Set of aesthetic mappings created by <code>ggplot2::aes()</code> .
data	Data to display.
stat	Statistical transformation. Default "identity".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
roughness	Non-negative roughness (0 = straight). Default 1.
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggskech.seed", 1L)</code> .
fill_style	One of "hachure", "cross_hatch", "zigzag", "zigzag_line", "scribble", "dots", "dashed", "stipple", "pencil_shade", or "solid". Default "hachure".
hachure_angle	Fill line angle in degrees. Default 45.

<code>hachure_gap</code>	Fill line gap in npc units (NULL = 6% of diagonal).
<code>fill_weight</code>	Stroke weight for fill lines. Default 0.5.
<code>outline.type</code>	Kept for signature parity with <code>ggplot2::geom_density()</code> ; ignored (the rough outline always traces the full band).
<code>na.rm</code>	Remove missing values silently? Default FALSE.
<code>show.legend</code>	Logical; include in legend?
<code>inherit.aes</code>	Override default aesthetics?

Value

A ggplot2 layer (a `LayerInstance` object) that can be added to a plot with `+`.

See Also

Other sketch-geoms: `GeomSketchAblin`, `GeomSketchArrow`, `GeomSketchBoxplot`, `GeomSketchBracket`, `GeomSketchCallout`, `GeomSketchChicklet`, `GeomSketchCol`, `GeomSketchContourFilled`, `GeomSketchCurve`, `GeomSketchDotplot`, `GeomSketchDumbbell`, `GeomSketchEdge`, `GeomSketchEllipse`, `GeomSketchEngrave`, `GeomSketchGantt`, `GeomSketchHex`, `GeomSketchLine`, `GeomSketchLinerange`, `GeomSketchLollipop`, `GeomSketchMarkCircle`, `GeomSketchMarkHull`, `GeomSketchPath`, `GeomSketchPoint`, `GeomSketchPolygon`, `GeomSketchRect`, `GeomSketchRibbon`, `GeomSketchRug`, `GeomSketchSegment`, `GeomSketchSfPolygon`, `GeomSketchSlope`, `GeomSketchSmooth`, `GeomSketchSpoke`, `GeomSketchTextRepel`, `GeomSketchViolin`, `StatSketchBeeswarm`, `StatSketchCalendar`, `StatSketchDensityRidges`, `StatSketchFunnel`, `StatSketchPie`, `StatSketchPyramid`, `StatSketchRadar`, `StatSketchStream`, `StatSketchTreemap`, `StatSketchWaffle`, `StatSketchWaterfall`, `annotate_sketch()`, `annotate_sketch_arrow()`, `annotate_sketch_callout()`, `annotate_sketch_highlight()`, `geom_sketch_alluvial()`, `geom_sketch_arc_diagram`, `geom_sketch_bin2d()`, `geom_sketch_bump()`, `geom_sketch_chord()`, `geom_sketch_contour()`, `geom_sketch_count()`, `geom_sketch_dendrogram()`, `geom_sketch_density2d()`, `geom_sketch_ecdf()`, `geom_sketch_function()`, `geom_sketch_histogram()`, `geom_sketch_jitter()`, `geom_sketch_marimekko()`, `geom_sketch_mosaic()`, `geom_sketch_parallel()`, `geom_sketch_qq()`, `geom_sketch_quantile()`, `geom_sketch_rose()`, `geom_sketch_sunburst()`, `geom_sketch_text()`, `sketch_graph()`

Examples

```
library(ggplot2)
ggplot(faithful, aes(eruptions)) +
  geom_sketch_density(fill = "khaki", seed = 1L) +
  theme_sketch()
```

`geom_sketch_density2d` *Sketchy 2-D density contours*

Description

`geom_sketch_density2d()` (alias `geom_sketch_density_2d()`) draws contour lines of a 2-D kernel density estimate with a hand-drawn stroke - the sketch analogue of `ggplot2::geom_density2d()` / `ggplot2::stat_density_2d()`. Needs `x` and `y` aesthetics. Uses **MASS** (pulled in by `ggplot2`).

Usage

```
geom_sketch_density2d(
  mapping = NULL,
  data = NULL,
  stat = "density_2d",
  position = "identity",
  ...,
  roughness = 0.7,
  bowing = 0.5,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

```
geom_sketch_density_2d(
  mapping = NULL,
  data = NULL,
  stat = "density_2d",
  position = "identity",
  ...,
  roughness = 0.7,
  bowing = 0.5,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

Arguments

mapping	Set of aesthetic mappings created by <code>ggplot2::aes()</code> .
data	Data to display.
stat	Statistical transformation (default "identity").
position	Position adjustment (default "identity").
...	Other arguments passed on to the layer.
roughness	Non-negative roughness parameter (0 = straight). Default 1.
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes for the double-stroke effect. Default 2.
seed	Integer seed for reproducibility. NULL uses <code>getOption("ggskech.seed", 1L)</code> .
na.rm	If FALSE (default), missing values are removed with a warning.
show.legend	Logical. Should this layer be included in the legend?
inherit.aes	If FALSE, override the default aesthetics.

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
ggplot(faithful, aes(eruptions, waiting)) +
  geom_sketch_point(colour = "grey60", seed = 1L) +
  geom_sketch_density2d(colour = "#884EA0", seed = 2L) +
  theme_sketch()
```

geom_sketch_ecdf

Sketchy empirical cumulative distribution

Description

`geom_sketch_ecdf()` draws the empirical CDF of a continuous variable as a hand-drawn staircase - the sketch analogue of `ggplot2::stat_ecdf()` / `geom_step(stat = "ecdf")`. Needs an x aesthetic; each group gets its own curve.

Usage

```
geom_sketch_ecdf(
  mapping = NULL,
  data = NULL,
  stat = "ecdf",
  position = "identity",
```

```

    ...,
    n = NULL,
    pad = FALSE,
    roughness = 0.8,
    bowing = 0.5,
    n_passes = 2L,
    seed = NULL,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

```

Arguments

mapping	Set of aesthetic mappings created by ggplot2::aes() .
data	Data to display.
stat	Statistical transformation. Default "identity".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
n	If NULL (default), the ECDF jumps at each observed value; otherwise the curve is evaluated at n evenly spaced points (passed to ggplot2::stat_ecdf()).
pad	If TRUE, add -Inf/Inf plateaus at the ends. Default FALSE (the roughened line spans the data range only, avoiding infinite coordinates).
roughness	Non-negative roughness (0 = straight). Default 1. For <code>geom_sketch_segment()</code> this is a mappable aesthetic (map it per segment with <code>aes(roughness =)</code> , rescaled by scale_roughness_continuous() ; for <code>geom_sketch_step()</code> it is a layer parameter (one path per group).
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAbline](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#),

GeomSketchRect, GeomSketchRibbon, GeomSketchRug, GeomSketchSegment, GeomSketchSfPolygon, GeomSketchSlope, GeomSketchSmooth, GeomSketchSpoke, GeomSketchTextRepel, GeomSketchViolin, StatSketchBeeswarm, StatSketchCalendar, StatSketchDensityRidges, StatSketchFunnel, StatSketchPie, StatSketchPyramid, StatSketchRadar, StatSketchStream, StatSketchTreemap, StatSketchWaffle, StatSketchWaterfall, annotate_sketch(), annotate_sketch_arrow(), annotate_sketch_callout(), annotate_sketch_highlight(), geom_sketch_alluvial(), geom_sketch_arc_diagram(), geom_sketch_bin2d(), geom_sketch_bump(), geom_sketch_chord(), geom_sketch_contour(), geom_sketch_count(), geom_sketch_dendrogram(), geom_sketch_density(), geom_sketch_density2d(), geom_sketch_function(), geom_sketch_histogram(), geom_sketch_jitter(), geom_sketch_marimekko(), geom_sketch_mosaic(), geom_sketch_parallel(), geom_sketch_qq(), geom_sketch_quantile(), geom_sketch_rose(), geom_sketch_sunburst(), geom_sketch_text(), sketch_graph()

Examples

```
library(ggplot2)
ggplot(mtcars, aes(mpg)) +
  geom_sketch_ecdf(colour = "#2E86C1", seed = 1L) +
  theme_sketch()
```

geom_sketch_function *Sketchy function curve*

Description

Draws the curve of a function $y = \text{fun}(x)$ with a hand-drawn stroke - the sketch analogue of `ggplot2::geom_function()`, built on `ggplot2::stat_function()`.

Usage

```
geom_sketch_function(
  mapping = NULL,
  data = NULL,
  stat = "function",
  position = "identity",
  ...,
  fun = NULL,
  xlim = NULL,
  n = 101,
  args = list(),
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = FALSE
)
```

Arguments

mapping	Set of aesthetic mappings created by <code>ggplot2::aes()</code> .
data	Data to display.
stat	Statistical transformation (default "identity").
position	Position adjustment (default "identity").
...	Other arguments passed on to the layer.
fun	Function to evaluate, or its name as a string.
xlim	Optional numeric range over which to evaluate fun; defaults to the panel x range.
n	Number of points to sample along the curve. Default 101.
args	List of extra arguments passed to fun.
roughness	Non-negative roughness parameter (0 = straight). Default 1.
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes for the double-stroke effect. Default 2.
seed	Integer seed for reproducibility. NULL uses <code>getOption("ggskech.seed", 1L)</code> .
na.rm	If FALSE (default), missing values are removed with a warning.
show.legend	Logical. Should this layer be included in the legend?
inherit.aes	If FALSE, override the default aesthetics.

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
ggplot(data.frame(x = c(-3, 3)), aes(x)) +
  geom_sketch_function(fun = dnorm, colour = "#7BAFD4", seed = 1L) +
  theme_sketch()
```

geom_sketch_histogram *Sketchy histogram and frequency polygon*

Description

geom_sketch_histogram() bins a continuous variable and draws hand-drawn bars (the sketch analogue of `ggplot2::geom_histogram()`). geom_sketch_freqpoly() draws the same bin counts as a roughened line (`ggplot2::geom_freqpoly()`).

Usage

```
geom_sketch_histogram(
  mapping = NULL,
  data = NULL,
  stat = "bin",
  position = "stack",
  ...,
  bins = 30,
  binwidth = NULL,
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  fill_style = "hachure",
  hachure_angle = 45,
  hachure_gap = NULL,
  fill_weight = 0.5,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

```
geom_sketch_freqpoly(
  mapping = NULL,
  data = NULL,
  stat = "bin",
  position = "identity",
  ...,
  bins = 30,
  binwidth = NULL,
  roughness = 1,
```

```

    bowing = 1,
    n_passes = 2L,
    seed = NULL,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

```

Arguments

mapping	Set of aesthetic mappings created by ggplot2::aes() .
data	Data to display.
stat	Statistical transformation. Default "identity" for geom_sketch_col() ; "count" for geom_sketch_bar() .
position	Position adjustment. Default "stack".
...	Other arguments passed on to the layer.
bins	Number of bins (passed to ggplot2::stat_bin()). Default 30.
binwidth	Bin width; overrides bins when supplied.
roughness	Non-negative roughness (0 = straight lines). A mappable aesthetic (default 1): pass a constant, or map it per bar with aes(roughness =) (rescaled by scale_roughness_continuous()).
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
fill_style	One of "hachure", "cross_hatch", "zigzag", "zigzag_line", "scribble", "dots", "dashed", "stipple", "pencil_shade", or "solid". Default "hachure".
hachure_angle	Fill line angle in degrees. Default 45.
hachure_gap	Fill line gap in device inches (NULL = 15% of the bar's smaller drawn side, clamped to [0.04, 0.4] inches).
fill_weight	Stroke weight for fill lines. Default 0.5.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A [ggplot2](#) layer object.

See Also

Other sketch-geoms: [GeomSketchAbline](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#),

GeomSketchMarkCircle, GeomSketchMarkHull, GeomSketchPath, GeomSketchPoint, GeomSketchPolygon, GeomSketchRect, GeomSketchRibbon, GeomSketchRug, GeomSketchSegment, GeomSketchSfPolygon, GeomSketchSlope, GeomSketchSmooth, GeomSketchSpoke, GeomSketchTextRepel, GeomSketchViolin, StatSketchBeeswarm, StatSketchCalendar, StatSketchDensityRidges, StatSketchFunnel, StatSketchPie, StatSketchPyramid, StatSketchRadar, StatSketchStream, StatSketchTreemap, StatSketchWaffle, StatSketchWaterfall, annotate_sketch(), annotate_sketch_arrow(), annotate_sketch_callout(), annotate_sketch_highlight(), geom_sketch_alluvial(), geom_sketch_arc_diagram(), geom_sketch_bin2d(), geom_sketch_bump(), geom_sketch_chord(), geom_sketch_contour(), geom_sketch_count(), geom_sketch_dendrogram(), geom_sketch_density(), geom_sketch_density2d(), geom_sketch_ecdf(), geom_sketch_function(), geom_sketch_jitter(), geom_sketch_marimekko(), geom_sketch_mosaic(), geom_sketch_parallel(), geom_sketch_qq(), geom_sketch_quantile(), geom_sketch_rose(), geom_sketch_sunburst(), geom_sketch_text(), sketch_graph()

Examples

```
library(ggplot2)
ggplot(faithful, aes(eruptions)) +
  geom_sketch_histogram(fill = "#7BAFD4", bins = 20, seed = 1L) +
  theme_sketch()
```

geom_sketch_jitter	<i>Sketchy jittered points</i>
--------------------	--------------------------------

Description

A convenience wrapper around `geom_sketch_point()` that adds a small amount of random position noise to reduce overplotting - the sketch analogue of `ggplot2::geom_jitter()`.

Usage

```
geom_sketch_jitter(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = NULL,
  ...,
  width = NULL,
  height = NULL,
  roughness = NULL,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

Arguments

mapping	Set of aesthetic mappings. Supports x, y, colour, size, alpha, and roughness.
data	Data to display.
stat	Statistical transformation (default "identity").
position	Position adjustment (default "identity").
...	Other arguments passed on to the layer.
width, height	Amount of horizontal/vertical jitter (passed to <code>ggplot2::position_jitter()</code>). NULL uses 40% of the data resolution.
roughness	Non-negative roughness parameter (0 = straight). Default 1.
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes for the double-stroke effect. Default 2.
seed	Integer seed for reproducibility. NULL uses <code>getOption("ggskech.seed", 1L)</code> .
na.rm	If FALSE (default), missing values are removed with a warning.
show.legend	Logical. Should this layer be included in the legend?
inherit.aes	If FALSE, override the default aesthetics.

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAbline](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
ggplot(mpg, aes(class, hwy)) +
  geom_sketch_jitter(width = 0.25, seed = 1L) +
  theme_sketch()
```

geom_sketch_marimekko *Sketchy Marimekko (variable-width stacked bar) chart*

Description

Draws a hand-drawn Marimekko / Mekko chart: each column's *width* is one category's (x) share of the total, and within a column the stacked segments are a second category's (fill) shares, so every roughened tile's *area* is the joint value. It is the value-weighted, segment-coloured cousin of [geom_sketch_mosaic\(\)](#) (and reuses its layout). Like [geom_sketch_chord\(\)](#) it is a constructor returning a list of ordinary sketch layers (tiles coloured by fill, column labels, and optional width-percent labels), so it composes with + and any fill scale; pair it with [theme_void\(\)](#) or [theme_sketch\(\)](#).

Usage

```
geom_sketch_marimekko(
  data,
  x,
  fill,
  value,
  ...,
  gap = 0.008,
  fill_style = "solid",
  alpha = 1,
  colour = "grey30",
  label = TRUE,
  width_labels = TRUE,
  label_size = 3.2,
  label_colour = "grey20",
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL
)
```

Arguments

data	A data frame.
x	Unquoted column name of the category that sets column widths.
fill	Unquoted column name of the category stacked within each column.
value	Unquoted column name giving the weight. Default: every row counts as 1.
...	Other arguments passed on to the tile layer.
gap	Gap between columns / segments, as a fraction of the unit square. Default 0.008 (Marimekko charts sit closer than mosaics).
fill_style	Tile fill style; see geom_sketch_rect() . Default "solid".

alpha	Tile fill opacity. Default 1.
colour	Tile outline colour. Default "grey30".
label	Draw column (x) labels under the chart? Default TRUE.
width_labels	Draw each column's width percentage on top? Default TRUE.
label_size, label_colour	Label text controls.
roughness, bowing, n_passes, seed	Sketch parameters.

Value

A list of ggplot2 layers.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
sales <- data.frame(
  region = rep(c("North", "South", "East"), each = 3),
  product = rep(c("A", "B", "C"), times = 3),
  revenue = c(40, 30, 10, 25, 25, 30, 15, 20, 5)
)
ggplot() +
  geom_sketch_marimekko(sales, region, product, revenue, seed = 1L) +
  scale_fill_sketch() +
  theme_void()
```

geom_sketch_mosaic	<i>Sketchy mosaic plot</i>
--------------------	----------------------------

Description

Draws a hand-drawn mosaic plot of two categorical variables: the width of each column is the marginal frequency of *x*, and the height of each tile within a column is the conditional frequency of *y*, so every tile's *area* is the joint frequency. Like [geom_sketch_chord\(\)](#) it is a constructor that returns a list of ordinary sketch layers (roughened tiles coloured by *y*, plus column labels), so it composes with `+` and any fill scale; pair it with `theme_void()` or `theme_sketch()`. No new dependencies (cf. `graphics::mosaicplot()`, `ggmosaic`).

Usage

```
geom_sketch_mosaic(
  data,
  x,
  y,
  value = NULL,
  ...,
  fill_by = c("y", "x"),
  gap = 0.012,
  fill_style = "solid",
  alpha = 1,
  label = TRUE,
  label_size = 3.5,
  label_colour = "grey20",
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL
)
```

Arguments

<code>data</code>	A data frame.
<code>x, y</code>	Unquoted column names: <i>x</i> splits the columns, <i>y</i> splits each column vertically.
<code>value</code>	Optional column name giving each row's weight (NULL = 1 each).
<code>...</code>	Other arguments passed on to the tile layer.
<code>fill_by</code>	Which variable colours the tiles: "y" (default) or "x".
<code>gap</code>	Gap between columns and rows, in unit-square fractions. Default 0.012.
<code>fill_style</code>	Tile fill style; see geom_sketch_rect() . Default "solid".
<code>alpha</code>	Tile opacity. Default 1.
<code>label</code>	Draw column labels? Default TRUE.

label_size, label_colour
 Label text controls.
 roughness, bowing, n_passes, seed
 Sketch parameters.

Value

A list of ggplot2 layers.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
df <- as.data.frame(Titanic)
ggplot() +
  geom_sketch_mosaic(df, x = Class, y = Survived, value = Freq, seed = 1L) +
  scale_fill_sketch() +
  theme_void()
```

`geom_sketch_parallel` *Sketchy parallel-coordinates plot*

Description

Draws a hand-drawn parallel-coordinates plot: each numeric column in axes becomes a vertical axis, and every observation becomes a roughened polyline crossing the axes at its values. Axes are scaled independently to a common height by default. Like [geom_sketch_chord\(\)](#) it is a constructor returning a list of ordinary sketch layers, so it composes with `+`; map colour to a column (add [scale_colour_sketch\(\)](#) or any colour scale) and pair with `theme_void()` or `theme_sketch()`. No new dependencies (cf. `GGally::ggparcoord()`, `MASS::parcoord()`).

Usage

```
geom_sketch_parallel(
  data,
  axes,
  colour = NULL,
  ...,
  scale = "minmax",
  line_colour = "#1F618D",
  alpha = 0.7,
  axis_colour = "grey60",
  label = TRUE,
  label_size = 3.5,
  label_colour = "grey20",
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL
)
```

Arguments

<code>data</code>	A data frame.
<code>axes</code>	Character vector of numeric column names to use as axes, in order (at least two).
<code>colour</code>	Optional column name to colour the lines by (NULL = one colour). Add a colour scale to style it.
<code>...</code>	Other arguments passed on to the line layer.
<code>scale</code>	Per-axis scaling: "minmax" (default, each axis to [0, 1]) or "none" (raw values; only sensible when the axes share units).
<code>line_colour</code>	Colour used when <code>colour</code> is NULL. Default "#1F618D".
<code>alpha</code>	Line opacity. Default 0.7.
<code>axis_colour</code>	Colour of the vertical axes. Default "grey60".
<code>label</code>	Draw axis labels? Default TRUE.
<code>label_size, label_colour</code>	Axis-label text controls.
<code>roughness, bowing, n_passes, seed</code>	Sketch parameters.

Value

A list of ggplot2 layers.

See Also

Other sketch-geoms: [GeomSketchAbline](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#),

GeomSketchGantt, GeomSketchHex, GeomSketchLine, GeomSketchLinerange, GeomSketchLollipop, GeomSketchMarkCircle, GeomSketchMarkHull, GeomSketchPath, GeomSketchPoint, GeomSketchPolygon, GeomSketchRect, GeomSketchRibbon, GeomSketchRug, GeomSketchSegment, GeomSketchSfPolygon, GeomSketchSlope, GeomSketchSmooth, GeomSketchSpoke, GeomSketchTextRepel, GeomSketchViolin, StatSketchBeeswarm, StatSketchCalendar, StatSketchDensityRidges, StatSketchFunnel, StatSketchPie, StatSketchPyramid, StatSketchRadar, StatSketchStream, StatSketchTreemap, StatSketchWaffle, StatSketchWaterfall, annotate_sketch(), annotate_sketch_arrow(), annotate_sketch_callout(), annotate_sketch_highlight(), geom_sketch_alluvial(), geom_sketch_arc_diagram(), geom_sketch_bin2d(), geom_sketch_bump(), geom_sketch_chord(), geom_sketch_contour(), geom_sketch_count(), geom_sketch_dendrogram(), geom_sketch_density(), geom_sketch_density2d(), geom_sketch_ecdf(), geom_sketch_function(), geom_sketch_histogram(), geom_sketch_jitter(), geom_sketch_marimekko(), geom_sketch_mosaic(), geom_sketch_qq(), geom_sketch_quantile(), geom_sketch_rose(), geom_sketch_sunburst(), geom_sketch_text(), sketch_graph()

Examples

```
library(ggplot2)
ggplot() +
  geom_sketch_parallel(iris,
    axes = c("Sepal.Length", "Sepal.Width", "Petal.Length", "Petal.Width"),
    colour = "Species", seed = 1L) +
  scale_colour_sketch() +
  theme_void()
```

geom_sketch_qq	<i>Sketchy quantile-quantile plot</i>
----------------	---------------------------------------

Description

geom_sketch_qq() draws Q-Q points (the sketch analogue of `ggplot2::geom_qq()` / `ggplot2::stat_qq()`);
 geom_sketch_qq_line() adds the reference line (`ggplot2::geom_qq_line()`). Map the data to
 the sample aesthetic.

Usage

```
geom_sketch_qq(
  mapping = NULL,
  data = NULL,
  stat = "qq",
  position = "identity",
  ...,
  distribution = stats::qnorm,
  dparams = list(),
  roughness = 0.5,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
```

```

    show.legend = NA,
    inherit.aes = TRUE
  )

  geom_sketch_qq_line(
    mapping = NULL,
    data = NULL,
    stat = "qq_line",
    position = "identity",
    ...,
    distribution = stats::qnorm,
    dparams = list(),
    roughness = 0.6,
    bowing = 0.5,
    n_passes = 2L,
    seed = NULL,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

```

Arguments

mapping	Set of aesthetic mappings. Supports x, y, colour, size, alpha, and roughness.
data	Data to display.
stat	Statistical transformation (default "identity").
position	Position adjustment (default "identity").
...	Other arguments passed on to the layer.
distribution	Quantile function for the theoretical distribution. Default stats::qnorm .
dparams	List of parameters for distribution.
roughness	Non-negative roughness parameter (0 = straight). Default 1.
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes for the double-stroke effect. Default 2.
seed	Integer seed for reproducibility. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
na.rm	If FALSE (default), missing values are removed with a warning.
show.legend	Logical. Should this layer be included in the legend?
inherit.aes	If FALSE, override the default aesthetics.

Value

A `ggplot2` layer object.

See Also

Other sketch-geoms: [GeomSketchAbline](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
ggplot(mtcars, aes(sample = mpg)) +
  geom_sketch_qq(seed = 1L) +
  geom_sketch_qq_line(colour = "#C8553D", seed = 2L) +
  theme_sketch()
```

`geom_sketch_quantile` *Sketchy quantile regression lines*

Description

Fits and draws quantile regression lines with a hand-drawn stroke - the sketch analogue of `ggplot2::geom_quantile()` / `ggplot2::stat_quantile()`. Requires the optional **quantreg** package.

Usage

```
geom_sketch_quantile(
  mapping = NULL,
  data = NULL,
  stat = "quantile",
  position = "identity",
  ...,
  quantiles = c(0.25, 0.5, 0.75),
  formula = NULL,
  method = "rq",
  roughness = 0.7,
  bowing = 0.5,
```

```

    n_passes = 2L,
    seed = NULL,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

```

Arguments

mapping	Set of aesthetic mappings created by ggplot2::aes() .
data	Data to display.
stat	Statistical transformation (default "identity").
position	Position adjustment (default "identity").
...	Other arguments passed on to the layer.
quantiles	Numeric vector of quantiles to fit. Default <code>c(0.25, 0.5, 0.75)</code> .
formula	Model formula passed to quantreg::rq() . Default <code>y ~ x</code> .
method	Fitting method passed to ggplot2::stat_quantile() . Default "rq".
roughness	Non-negative roughness parameter (0 = straight). Default 1.
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes for the double-stroke effect. Default 2.
seed	Integer seed for reproducibility. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
na.rm	If FALSE (default), missing values are removed with a warning.
show.legend	Logical. Should this layer be included in the legend?
inherit.aes	If FALSE, override the default aesthetics.

Value

A `ggplot2` layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
if (requireNamespace("quantreg", quietly = TRUE)) {
  ggplot(mtcars, aes(wt, mpg)) +
    geom_sketch_point(seed = 1L) +
    geom_sketch_quantile(seed = 2L) +
    theme_sketch()
}
```

geom_sketch_rose	<i>Sketchy coxcomb / Nightingale rose chart</i>
------------------	---

Description

Draws a hand-drawn coxcomb (polar area) chart: each category of *x* occupies an equal angular wedge and its value sets the radius, so the wedges fan out like a rose. With `area_true = TRUE` the sector *area* (not radius) encodes value, as in Florence Nightingale's original mortality roses. An optional fill category stacks radially within each wedge. Like `geom_sketch_chord()` it is a constructor returning a list of ordinary sketch layers (roughened annular sectors + labels), so it composes with `+`; pair it with `coord_equal()` and `theme_void()`, and add `scale_fill_sketch()`.

Usage

```
geom_sketch_rose(
  data,
  x,
  value,
  fill = NULL,
  ...,
  area_true = FALSE,
  fill_style = "solid",
  alpha = 0.9,
  colour = "grey30",
  label = TRUE,
  label_size = 3.2,
  label_colour = "grey20",
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL
)
```

Arguments

<code>data</code>	A data frame.
<code>x</code>	Unquoted column name of the category that sets the angular wedges.
<code>value</code>	Unquoted column name giving the magnitude (radius / area).

fill	Optional unquoted column name of a second category to stack radially within each wedge (NULL = one segment per wedge, coloured by x).
...	Other arguments passed on to the sector layer.
area_true	If TRUE, sector area is proportional to value (radius is the square root) - Nightingale's convention. Default FALSE (radius is proportional to value).
fill_style	Sector fill style; see geom_sketch_polygon() . Default "solid".
alpha	Sector opacity. Default 0.9.
colour	Sector outline colour. Default "grey30".
label	Draw category labels around the rim? Default TRUE.
label_size, label_colour	Label text controls.
roughness, bowing, n_passes, seed	Sketch parameters.

Value

A list of ggplot2 layers.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
deaths <- data.frame(
  month = month.abb,
  n     = c(12, 18, 25, 30, 22, 15, 10, 14, 20, 28, 24, 16)
)
ggplot() +
  geom_sketch_rose(deaths, month, n, area_true = TRUE, seed = 1L) +
  scale_fill_sketch() +
  coord_equal() +
  theme_void()
```

 geom_sketch_sunburst *Sketchy sunburst (hierarchy) chart*

Description

Draws a hand-drawn sunburst: a hierarchy rendered as nested rings of annular sectors. The columns named in `levels` define the hierarchy outermost-to- innermost (`levels[1]` is the inner root ring); each deeper ring splits its parent's angular span by the children's summed value, so a child always nests inside its parent. Like `geom_sketch_chord()` it is a constructor returning a list of ordinary sketch layers (roughened annular sectors plus optional labels), so it composes with `+`; pair it with `coord_equal()` and `theme_void()`, and add `scale_fill_sketch()` (or any fill scale) to colour it. Reuses no new dependencies (cf. `sunburstR`, `plotly`).

Usage

```
geom_sketch_sunburst(
  data,
  levels,
  value = NULL,
  ...,
  r0 = 0.15,
  ring_width = NULL,
  fill_by = c("root", "self", "depth"),
  fill_style = "solid",
  alpha = 0.9,
  colour = "grey30",
  label = FALSE,
  label_size = 3,
  label_colour = "grey20",
  min_label_angle = 0.15,
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL
)
```

Arguments

<code>data</code>	A data frame, one row per observation (or per leaf).
<code>levels</code>	Character vector of column names giving the hierarchy, from the inner root ring outward (at least one).
<code>value</code>	Optional column name giving the leaf weight (NULL = every row counts as 1).
<code>...</code>	Other arguments passed on to the sector layer.
<code>r0</code>	Radius of the central hole, in the unit circle. Default 0.15.
<code>ring_width</code>	Radial width of each ring. NULL (default) divides the space $r0 \dots 1$ evenly across the levels.

fill_by	What the sector fill encodes: "root" (default, the top-level ancestor - the classic sunburst look), "self" (each node's own label), or "depth" (the ring number).
fill_style	Sector fill style; see geom_sketch_polygon() . Default "solid".
alpha	Sector fill opacity. Default 0.9.
colour	Sector outline colour. Default "grey30".
label	Draw a label on each sector? Default FALSE (sunbursts get busy; only sectors with a wide enough angle are labelled).
label_size, label_colour	Label text controls.
min_label_angle	Minimum angular span (radians) a sector needs before it is labelled. Default 0.15.
roughness, bowing, n_passes, seed	Sketch parameters.

Value

A list of ggplot2 layers.

See Also

Other sketch-geoms: [GeomSketchAbline](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
df <- data.frame(
  region = c("West", "West", "West", "East", "East", "East"),
  dept   = c("Sales", "Sales", "Eng", "Sales", "Eng", "Eng"),
  team   = c("A", "B", "C", "D", "E", "F"),
  n      = c(4, 2, 6, 3, 5, 1)
)
ggplot() +
```

```
geom_sketch_sunburst(df, levels = c("region", "dept", "team"),
                     value = "n", seed = 1L) +
scale_fill_sketch() +
coord_equal() +
theme_void()
```

geom_sketch_text

Sketchy text and labels

Description

`geom_sketch_text()` and `geom_sketch_label()` add text in a handwriting font, the sketch counterparts of `ggplot2::geom_text()` and `ggplot2::geom_label()`. Unlike the other geoms the strokes are not geometrically roughened - the hand-drawn feel comes from the font (see `ggsketch_check_fonts()` for which faces are available). If no handwriting font is installed they render with the device default family.

Usage

```
geom_sketch_text(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  family = NULL,
  nudge_x = 0,
  nudge_y = 0,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

```
geom_sketch_label(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  family = NULL,
  nudge_x = 0,
  nudge_y = 0,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```



```
# `family = ""` uses the device default, so this runs on any device.
ggplot(df, aes(x, y, label = lab)) +
  geom_sketch_text(size = 6, family = "") +
  theme_sketch()

# With no `family`, the first installed handwriting font is used instead (see
# `ggsketch_check_fonts()`). That requires a font-capable device (ragg,
# svglite, cairo); pass `family = ""` (above) for fully portable output on any
# device, including the base pdf() / postscript().
```

GeomSketchAbline	<i>Sketchy reference lines</i>
------------------	--------------------------------

Description

Hand-drawn abline / hline / vline reference lines that span the panel - the sketch analogues of `ggplot2::geom_abline()`, `ggplot2::geom_hline()`, and `ggplot2::geom_vline()`. As with `ggplot2`, you usually pass the intercepts as arguments rather than mapping them.

Usage

GeomSketchAbline

GeomSketchHline

GeomSketchVline

```
geom_sketch_abline(
  mapping = NULL,
  data = NULL,
  ...,
  slope,
  intercept,
  roughness = 0.6,
  bowing = 0.5,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
  show.legend = NA
)
```

```
geom_sketch_hline(
  mapping = NULL,
  data = NULL,
  ...,
  yintercept,
  roughness = 0.6,
  bowing = 0.5,
```

```

    n_passes = 2L,
    seed = NULL,
    na.rm = FALSE,
    show.legend = NA
  )

  geom_sketch_vline(
    mapping = NULL,
    data = NULL,
    ...,
    xintercept,
    roughness = 0.6,
    bowing = 0.5,
    n_passes = 2L,
    seed = NULL,
    na.rm = FALSE,
    show.legend = NA
  )

```

Arguments

mapping, data, ...
 Standard layer arguments. Usually omitted in favour of the intercept arguments below.

slope, intercept
 For `geom_sketch_abline()`.

roughness, bowing, n_passes, seed
 Sketch parameters. Reference lines default to a gentle roughness = 0.6.

na.rm, show.legend
 Standard layer arguments.

yintercept
 For `geom_sketch_hline()`.

xintercept
 For `geom_sketch_vline()`.

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#),

```

annotate_sketch(), annotate_sketch_arrow(), annotate_sketch_callout(), annotate_sketch_highlight(),
geom_sketch_alluvial(), geom_sketch_arc_diagram(), geom_sketch_bin2d(), geom_sketch_bump(),
geom_sketch_chord(), geom_sketch_contour(), geom_sketch_count(), geom_sketch_dendrogram(),
geom_sketch_density(), geom_sketch_density2d(), geom_sketch_ecdf(), geom_sketch_function(),
geom_sketch_histogram(), geom_sketch_jitter(), geom_sketch_marimekko(), geom_sketch_mosaic(),
geom_sketch_parallel(), geom_sketch_qq(), geom_sketch_quantile(), geom_sketch_rose(),
geom_sketch_sunburst(), geom_sketch_text(), sketch_graph()

```

Examples

```

library(ggplot2)
ggplot(mtcars, aes(wt, mpg)) +
  geom_sketch_point(seed = 1L) +
  geom_sketch_hline(yintercept = 20, colour = "red", seed = 2L) +
  geom_sketch_vline(xintercept = 3, colour = "blue", seed = 3L) +
  theme_sketch()

```

GeomSketchArrow	<i>Sketchy content-aware arrows</i>
-----------------	-------------------------------------

Description

Draws a hand-drawn arrow from (x, y) to (xend, yend), with an optional handwriting label at the source. It is "content-aware" in three ways:

Usage

GeomSketchArrow

```

geom_sketch_arrow(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  curvature = "auto",
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  arrow_length = NULL,
  arrow_angle = 25,
  arrow_type = "open",
  arrow_head = NULL,
  ends = "last",
  family = NULL,
  label_gap = 0.012,
  na.rm = FALSE,

```

```

    show.legend = FALSE,
    inherit.aes = TRUE
  )

```

Arguments

mapping	Aesthetic mappings created by <code>ggplot2::aes()</code> . Requires x, y, xend, yend; label is optional.
data	Data with one row per arrow.
stat	Statistical transformation. Default "identity".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
curvature	Shaft bend. "auto" (default) picks a gentle bow; a number sets it explicitly (0 straight, positive/negative bow to either side).
roughness	Non-negative roughness (0 = clean). Default 1.
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
arrow_length	Arrowhead length in inches. NULL (default) adapts it to the shaft length.
arrow_angle	Half-angle of the arrowhead in degrees. Default 25.
arrow_type	"open" (default) draws a two-stroke V; "closed" draws a filled rough triangle. Superseded by <code>arrow_head</code> ; kept for back-compat.
arrow_head	Arrowhead style, one of <code>sketch_arrowheads()</code> : "triangle_open", "triangle_filled", "barb" (swept harpoon barbs), "fishtail" (forked swallowtail), "dot" (a blob) or "bar" (a perpendicular tick). NULL (default) derives it from <code>arrow_type</code> .
ends	Which end(s) carry a head: "last" (default), "first" or "both" (a double-headed arrow).
family	Font family for the label. Defaults to the same family as <code>theme_sketch()</code> (<code>getOption("ggsketch.base_family", "")</code>), i.e. the device default, so the label matches the plot's other text; set <code>options(ggsketch.base_family = "auto")</code> for a handwriting face, or pass an explicit family here.
label_gap	Gap between the label anchor and the source point, in npc. Default 0.012.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend? Default FALSE.
inherit.aes	Inherit aesthetics from the plot? Default TRUE.

Details

- the shaft curvature defaults to an automatic, pleasing bow whose side follows the direction of travel (`curvature = "auto"`);
- the arrowhead is roughened and oriented to the curve's *end tangent*, so it always points at the target however the shaft bends;
- the label justifies itself away from the target, so it never sits under the shaft.

For one-off annotations, `annotate_sketch_arrow()` is the easiest entry point.

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
ggplot(mtcars, aes(wt, mpg)) +
  geom_sketch_point(seed = 1L) +
  annotate_sketch_arrow(x = 4.5, y = 30, xend = 5.25, yend = 18,
    label = "heavy & thirsty", seed = 2L) +
  theme_sketch()
```

GeomSketchBoxplot

Sketchy boxplot

Description

A hand-drawn box-and-whisker plot: a roughened IQR box, a thick median line, rough whiskers, and sketchy outlier points. Uses `ggplot2::stat_boxplot()` for the five-number summary - the sketch analogue of `ggplot2::geom_boxplot()`.

Usage

```
GeomSketchBoxplot
```

```
geom_sketch_boxplot(
  mapping = NULL,
  data = NULL,
```

```

stat = "boxplot",
position = "dodge2",
...,
roughness = 0.8,
bowing = 1,
n_passes = 2L,
seed = NULL,
fill_style = "solid",
hachure_angle = 45,
hachure_gap = NULL,
fill_weight = 0.5,
outliers = TRUE,
na.rm = FALSE,
show.legend = NA,
inherit.aes = TRUE
)

```

Arguments

mapping	Set of aesthetic mappings created by <code>ggplot2::aes()</code> .
data	Data to display.
stat	Statistical transformation. Default "boxplot".
position	Position adjustment. Default "dodge2".
...	Other arguments passed on to the layer.
roughness	Non-negative roughness. Default 0.8 (boxes read cleaner).
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
fill_style	Box fill style. Default "solid". The box is outline-only until you give it a fill (the default fill is NA); set fill for a solid box, or use e.g. <code>fill_style = "hachure"</code> with a fill for shaded boxes.
hachure_angle, hachure_gap, fill_weight	Fill parameters.
outliers	Draw outlier points? Default TRUE.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A `ggplot2` layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
ggplot(mpg, aes(class, hwy)) +
  geom_sketch_boxplot(seed = 1L) +
  theme_sketch()
```

GeomSketchBracket

Sketchy significance / comparison brackets

Description

Draws a hand-drawn bracket spanning `xmin` to `xmax` at height `y`, with short tips dropping toward the data and an optional label (e.g. a p-value or "n.s.") centred above. It is the sketch counterpart of a `ggsignif` bracket: useful for marking pairwise comparisons on boxplots, bars, or violins.

Usage

GeomSketchBracket

```
geom_sketch_bracket(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  tip_length = 0.02,
  family = NULL,
  label_vjust = -0.35,
```

```

    roughness = 0.8,
    bowing = 0.4,
    n_passes = 2L,
    seed = NULL,
    na.rm = FALSE,
    show.legend = FALSE,
    inherit.aes = FALSE
  )

```

Arguments

mapping	Aesthetic mappings created by <code>ggplot2::aes()</code> . Requires <code>xmin</code> , <code>xmax</code> , and <code>y</code> ; <code>label</code> is optional.
data	Data with one row per bracket.
stat	Statistical transformation. Default "identity".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
tip_length	Length of the downward end tips, as a fraction of panel height. Default 0.02. Use 0 for a plain bar.
family	Font family for the label. Defaults to the same family as <code>theme_sketch()</code> (<code>getOption("ggsketch.base_family", "")</code>), i.e. the device default, so the label matches the plot's other text; set <code>options(ggsketch.base_family = "auto")</code> for a handwriting face, or pass an explicit family here.
label_vjust	Vertical justification of the label relative to the bar (negative nudges it above). Default -0.35.
roughness	Non-negative roughness (0 = straight). Default 0.8.
bowing	Non-negative bowing multiplier. Default 0.4 (kept low so the bar stays readable).
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend? Default FALSE.
inherit.aes	Inherit aesthetics from the plot? Default FALSE.

Details

Brackets are usually one-off annotations, so supply them with their own data and `inherit.aes = FALSE` rather than inheriting the plot's mapping.

Value

A `ggplot2` layer object.

See Also

Other sketch-geoms: [GeomSketchAbline](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
brackets <- data.frame(xmin = 1, xmax = 2, y = 45, label = "p = 0.01")
ggplot(mpg, aes(drv, hwy)) +
  geom_sketch_boxplot(seed = 1L) +
  geom_sketch_bracket(
    data = brackets,
    aes(xmin = xmin, xmax = xmax, y = y, label = label),
    family = "", seed = 2L
  ) +
  theme_sketch()
```

GeomSketchCallout

Sketchy callouts (boxed labels with a leader arrow)

Description

Draws a handwriting label inside a roughened rounded box, optionally with a hand-drawn leader arrow pointing from the box to a target (xend, yend). The box auto-sizes to the label, and the leader leaves from the box edge nearest the target. The sketch take on a speech-bubble / callout annotation.

Usage

```
GeomSketchCallout
```

```
geom_sketch_callout(
  mapping = NULL,
```

```

data = NULL,
stat = "identity",
position = "identity",
...,
roughness = 1,
bowing = 0.6,
n_passes = 2L,
seed = NULL,
padding = 0.06,
corner_radius = 0.3,
arrow_length = NULL,
arrow_angle = 25,
arrow_head = NULL,
leader = "straight",
curvature = 0.3,
family = NULL,
na.rm = FALSE,
show.legend = FALSE,
inherit.aes = TRUE
)

```

Arguments

mapping	Aesthetic mappings created by <code>ggplot2::aes()</code> . Requires x, y, and label; map xend/yend to add a leader arrow to a target.
data	Data with one row per callout.
stat	Statistical transformation. Default "identity".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
roughness	Non-negative roughness (0 = clean). Default 1.
bowing	Non-negative bowing multiplier. Default 0.6.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
padding	Box padding around the label, in inches. Default 0.06.
corner_radius	Box corner rounding (fraction of half-side). Default 0.3.
arrow_length	Leader arrowhead length in inches. NULL (default) adapts it to the leader length.
arrow_angle	Half-angle of the leader arrowhead in degrees. Default 25.
arrow_head	Leader head style, one of <code>sketch_arrowheads()</code> . NULL (default) draws the open V.
leader	Leader routing: "straight" (default), "elbow" (horizontal then vertical, flowchart style) or "curved" (a bowed Bezier).
curvature	Bow size when leader = "curved". Default 0.3.

<code>family</code>	Font family for the label. Defaults to the same family as <code>theme_sketch()</code> (<code>getOption("ggsketch.base_family", "")</code>), i.e. the device default), so the label matches the plot's other text; set <code>options(ggsketch.base_family = "auto")</code> for a handwriting face, or pass an explicit family here.
<code>na.rm</code>	Remove missing values silently? Default FALSE.
<code>show.legend</code>	Logical; include in legend? Default FALSE.
<code>inherit.aes</code>	Inherit aesthetics from the plot? Default TRUE.

Details

For one-off annotations, `annotate_sketch_callout()` is the easiest entry point.

Value

A `ggplot2` layer object.

See Also

Other sketch-geoms: `GeomSketchAblin`, `GeomSketchArrow`, `GeomSketchBoxplot`, `GeomSketchBracket`, `GeomSketchChicklet`, `GeomSketchCol`, `GeomSketchContourFilled`, `GeomSketchCurve`, `GeomSketchDotplot`, `GeomSketchDumbbell`, `GeomSketchEdge`, `GeomSketchEllipse`, `GeomSketchEngrave`, `GeomSketchGantt`, `GeomSketchHex`, `GeomSketchLine`, `GeomSketchLinerange`, `GeomSketchLollipop`, `GeomSketchMarkCircle`, `GeomSketchMarkHull`, `GeomSketchPath`, `GeomSketchPoint`, `GeomSketchPolygon`, `GeomSketchRect`, `GeomSketchRibbon`, `GeomSketchRug`, `GeomSketchSegment`, `GeomSketchSfPolygon`, `GeomSketchSlope`, `GeomSketchSmooth`, `GeomSketchSpoke`, `GeomSketchTextRepel`, `GeomSketchViolin`, `StatSketchBeeswarm`, `StatSketchCalendar`, `StatSketchDensityRidges`, `StatSketchFunnel`, `StatSketchPie`, `StatSketchPyramid`, `StatSketchRadar`, `StatSketchStream`, `StatSketchTreemap`, `StatSketchWaffle`, `StatSketchWaterfall`, `annotate_sketch()`, `annotate_sketch_arrow()`, `annotate_sketch_callout()`, `annotate_sketch_highlight()`, `geom_sketch_alluvial()`, `geom_sketch_arc_diagram()`, `geom_sketch_bin2d()`, `geom_sketch_bump()`, `geom_sketch_chord()`, `geom_sketch_contour()`, `geom_sketch_count()`, `geom_sketch_dendrogram()`, `geom_sketch_density()`, `geom_sketch_density2d()`, `geom_sketch_ecdf()`, `geom_sketch_function()`, `geom_sketch_histogram()`, `geom_sketch_jitter()`, `geom_sketch_marimekko()`, `geom_sketch_mosaic()`, `geom_sketch_parallel()`, `geom_sketch_qq()`, `geom_sketch_quantile()`, `geom_sketch_rose()`, `geom_sketch_sunburst()`, `geom_sketch_text()`, `sketch_graph()`

Examples

```
library(ggplot2)
ggplot(mtcars, aes(wt, mpg)) +
  geom_sketch_point(seed = 1L) +
  annotate_sketch_callout(x = 4, y = 32, label = "outlier?",
                        xend = 5.25, yend = 18, seed = 2L) +
  theme_sketch()
```

GeomSketchChicklet *Sketchy chicklet chart*

Description

Draws a stacked bar whose segments are separately rounded "chicklets" with a small gap between them – the hand-drawn take on `ggchicklet::geom_chicklet()` (cf. `ggchicklet`). It is `geom_sketch_col()` with rounded corners on, a `segment_gap` inset between stacked segments, and a solid fill by default. As with `ggchicklet`, add `ggplot2::coord_flip()` for the classic horizontal layout.

Usage

GeomSketchChicklet

```
geom_sketch_chicklet(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "stack",
  ...,
  roughness = NULL,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  fill_style = "solid",
  hatchure_angle = 45,
  hatchure_gap = NULL,
  fill_weight = 0.5,
  width = NULL,
  corner_radius = 0.5,
  segment_gap = 0.02,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

Arguments

<code>mapping</code>	Set of aesthetic mappings created by <code>ggplot2::aes()</code> .
<code>data</code>	Data to display.
<code>stat</code>	Statistical transformation. Default "identity" for <code>geom_sketch_col()</code> ; "count" for <code>geom_sketch_bar()</code> .
<code>position</code>	Position adjustment. Default "stack".
<code>...</code>	Other arguments passed on to the layer.

roughness	Non-negative roughness (0 = straight lines). A mappable aesthetic (default 1): pass a constant, or map it per bar with <code>aes(roughness =)</code> (rescaled by <code>scale_roughness_continuous()</code>).
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
fill_style	Fill style; see <code>geom_sketch_col()</code> . Default "solid" for the flat chicklet look; pass "hachure" etc. for a sketchier fill.
hachure_angle	Fill line angle in degrees. Default 45.
hachure_gap	Fill line gap in device inches (NULL = 15% of the bar's smaller drawn side, clamped to [0.04, 0.4] inches).
fill_weight	Stroke weight for fill lines. Default 0.5.
width	Bar width override. NULL uses 90% of resolution.
corner_radius	Corner rounding as a fraction [0, 1] of each half-side. Default 0.5; 0 gives square segments.
segment_gap	Gap between stacked segments, as a fraction of the panel's total drawn height. Default 0.02; 0 stacks the pills flush.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: `GeomSketchAblin`, `GeomSketchArrow`, `GeomSketchBoxplot`, `GeomSketchBracket`, `GeomSketchCallout`, `GeomSketchCol`, `GeomSketchContourFilled`, `GeomSketchCurve`, `GeomSketchDotplot`, `GeomSketchDumbbell`, `GeomSketchEdge`, `GeomSketchEllipse`, `GeomSketchEngrave`, `GeomSketchGantt`, `GeomSketchHex`, `GeomSketchLine`, `GeomSketchLinerange`, `GeomSketchLollipop`, `GeomSketchMarkCircle`, `GeomSketchMarkHull`, `GeomSketchPath`, `GeomSketchPoint`, `GeomSketchPolygon`, `GeomSketchRect`, `GeomSketchRibbon`, `GeomSketchRug`, `GeomSketchSegment`, `GeomSketchSfPolygon`, `GeomSketchSlope`, `GeomSketchSmooth`, `GeomSketchSpoke`, `GeomSketchTextRepel`, `GeomSketchViolin`, `StatSketchBeeswarm`, `StatSketchCalendar`, `StatSketchDensityRidges`, `StatSketchFunnel`, `StatSketchPie`, `StatSketchPyramid`, `StatSketchRadar`, `StatSketchStream`, `StatSketchTreemap`, `StatSketchWaffle`, `StatSketchWaterfall`, `annotate_sketch()`, `annotate_sketch_arrow()`, `annotate_sketch_callout()`, `annotate_sketch_highlight()`, `geom_sketch_alluvial()`, `geom_sketch_arc_diagram()`, `geom_sketch_bin2d()`, `geom_sketch_bump()`, `geom_sketch_chord()`, `geom_sketch_contour()`, `geom_sketch_count()`, `geom_sketch_dendrogram()`, `geom_sketch_density()`, `geom_sketch_density2d()`, `geom_sketch_ecdf()`, `geom_sketch_function()`, `geom_sketch_histogram()`, `geom_sketch_jitter()`, `geom_sketch_marimekko()`, `geom_sketch_mosaic()`, `geom_sketch_parallel()`, `geom_sketch_qq()`, `geom_sketch_quantile()`, `geom_sketch_rose()`, `geom_sketch_sunburst()`, `geom_sketch_text()`, `sketch_graph()`

Examples

```
library(ggplot2)
df <- expand.grid(week = factor(1:4), team = c("A", "B", "C"))
df$pct <- c(4, 3, 2, 5, 3, 4, 5, 2, 3, 3, 3, 4)
ggplot(df, aes(week, pct, fill = team)) +
  geom_sketch_chicklet(seed = 1L) +
  coord_flip() +
  theme_sketch()
```

GeomSketchCol

Sketchy column / bar geom

Description

Draws vertical bars with a hand-drawn roughened outline and an optional hachure, cross-hatch, zigzag, dots, or dashed fill pattern. Use `geom_sketch_col()` when the bar heights are already in the data; use `geom_sketch_bar()` to count observations automatically.

Usage

GeomSketchCol

```
geom_sketch_col(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "stack",
  ...,
  roughness = NULL,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  fill_style = "hachure",
  hachure_angle = 45,
  hachure_gap = NULL,
  fill_weight = 0.5,
  width = NULL,
  corner_radius = 0,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

```
geom_sketch_bar(
  mapping = NULL,
  data = NULL,
  stat = "count",
```

```

    position = "stack",
    ...,
    roughness = NULL,
    bowing = 1,
    n_passes = 2L,
    seed = NULL,
    fill_style = "hachure",
    hachure_angle = 45,
    hachure_gap = NULL,
    fill_weight = 0.5,
    width = NULL,
    corner_radius = 0,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

```

Arguments

mapping	Set of aesthetic mappings created by <code>ggplot2::aes()</code> .
data	Data to display.
stat	Statistical transformation. Default "identity" for <code>geom_sketch_col()</code> ; "count" for <code>geom_sketch_bar()</code> .
position	Position adjustment. Default "stack".
...	Other arguments passed on to the layer.
roughness	Non-negative roughness (0 = straight lines). A mappable aesthetic (default 1): pass a constant, or map it per bar with <code>aes(roughness =)</code> (rescaled by <code>scale_roughness_continuous()</code>).
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
fill_style	One of "hachure", "cross_hatch", "zigzag", "zigzag_line", "scribble", "dots", "dashed", "stipple", "pencil_shade", or "solid". Default "hachure".
hachure_angle	Fill line angle in degrees. Default 45.
hachure_gap	Fill line gap in device inches (NULL = 15% of the bar's smaller drawn side, clamped to [0.04, 0.4] inches).
fill_weight	Stroke weight for fill lines. Default 0.5.
width	Bar width override. NULL uses 90% of resolution.
corner_radius	Corner rounding as a fraction [0, 1] of each half-side. 0 (default) is square; a small value (e.g. 0.2) gives gently rounded bars.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
df <- data.frame(x = c("A", "B", "C", "D"), y = c(3, 5, 2, 6))
ggplot(df, aes(x, y)) +
  geom_sketch_col(fill_style = "hachure", seed = 1L) +
  theme_sketch()
```

GeomSketchContourFilled

Sketchy filled contour and 2-D density bands

Description

`geom_sketch_contour_filled()` draws hand-drawn *filled* contour bands of a surface (the sketch analogue of [ggplot2::geom_contour_filled\(\)](#)); it needs x, y, and z. `geom_sketch_density_2d_filled()` fills the bands of a 2-D kernel density estimate ([ggplot2::geom_density_2d_filled\(\)](#)); it needs x and y and uses **MASS**.

Usage

GeomSketchContourFilled

```
geom_sketch_contour_filled(
  mapping = NULL,
```

```
data = NULL,
stat = "contour_filled",
position = "identity",
...,
bins = NULL,
binwidth = NULL,
breaks = NULL,
roughness = 0.7,
bowing = 0.5,
n_passes = 2L,
seed = NULL,
fill_style = "solid",
hachure_angle = 45,
hachure_gap = 0.04,
fill_weight = 0.5,
na.rm = FALSE,
show.legend = NA,
inherit.aes = TRUE
)

geom_sketch_density_2d_filled(
  mapping = NULL,
  data = NULL,
  stat = "density_2d_filled",
  position = "identity",
  ...,
  roughness = 0.7,
  bowing = 0.5,
  n_passes = 2L,
  seed = NULL,
  fill_style = "solid",
  hachure_angle = 45,
  hachure_gap = 0.04,
  fill_weight = 0.5,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)

geom_sketch_density2d_filled(
  mapping = NULL,
  data = NULL,
  stat = "density_2d_filled",
  position = "identity",
  ...,
  roughness = 0.7,
  bowing = 0.5,
  n_passes = 2L,
```

```

    seed = NULL,
    fill_style = "solid",
    hatchure_angle = 45,
    hatchure_gap = 0.04,
    fill_weight = 0.5,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

```

Arguments

mapping	Set of aesthetic mappings created by <code>ggplot2::aes()</code> .
data	Data to display.
stat	Statistical transformation (default "identity").
position	Position adjustment (default "identity").
...	Other arguments passed on to the layer.
bins	Number of contour bins. Overridden by binwidth or breaks.
binwidth	Distance between contour bins.
breaks	Explicit numeric contour breaks; overrides bins/binwidth.
roughness	Non-negative roughness parameter (0 = straight). Default 1.
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes for the double-stroke effect. Default 2.
seed	Integer seed for reproducibility. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
fill_style	Band fill: "solid" (default), "hachure", or "cross_hatch". Other styles degrade to "hachure".
hachure_angle	Fill line angle in degrees. Default 45.
hachure_gap	Fill line gap (npc fraction). Default 0.04.
fill_weight	Stroke weight for fill lines. Default 0.5.
na.rm	If FALSE (default), missing values are removed with a warning.
show.legend	Logical. Should this layer be included in the legend?
inherit.aes	If FALSE, override the default aesthetics.

Details

Unlike the contour *line* geoms, each band is a region that may contain holes (the next level up, cut out). The fill is painted with a hole-aware scan-line so the holes stay empty, even for `fill_style = "hachure"`.

Value

A `ggplot2` layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
ggplot(faithfuld, aes(waiting, eruptions, z = density)) +
  geom_sketch_contour_filled(seed = 1L) +
  theme_sketch()
```

GeomSketchCurve

Sketchy curved connector

Description

Draws a hand-drawn curved segment from (x, y) to (xend, yend) - the sketch analogue of [ggplot2::geom_curve\(\)](#). The curve is a quadratic Bezier whose bend is controlled by curvature.

Usage

GeomSketchCurve

```
geom_sketch_curve(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  curvature = 0.5,
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
```

```

    seed = NULL,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

```

Arguments

mapping	Set of aesthetic mappings created by <code>ggplot2::aes()</code> .
data	Data to display.
stat	Statistical transformation. Default "identity".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
curvature	Amount of bend. 0 is a straight line; positive curves to one side, negative to the other. Default 0.5.
roughness	Non-negative roughness (0 = straight). Default 1. For <code>geom_sketch_segment()</code> this is a mappable aesthetic (map it per segment with <code>aes(roughness =)</code> , rescaled by <code>scale_roughness_continuous()</code>); for <code>geom_sketch_step()</code> it is a layer parameter (one path per group).
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#),

```
geom_sketch_histogram(), geom_sketch_jitter(), geom_sketch_marimekko(), geom_sketch_mosaic(),
geom_sketch_parallel(), geom_sketch_qq(), geom_sketch_quantile(), geom_sketch_rose(),
geom_sketch_sunburst(), geom_sketch_text(), sketch_graph()
```

Examples

```
library(ggplot2)
df <- data.frame(x = 1, y = 1, xend = 3, yend = 3)
ggplot(df, aes(x, y)) +
  geom_sketch_curve(aes(xend = xend, yend = yend), curvature = 0.4,
                   seed = 1L) +
  theme_sketch()
```

GeomSketchDotplot	<i>Sketchy dot plot</i>
-------------------	-------------------------

Description

Draws a hand-drawn Wilkinson-style dot plot: the data are binned along x into fixed-width bins, and one roughened circular dot per observation is stacked upward in each bin. The sketch analogue of `ggplot2::geom_dotplot()`.

Usage

```
GeomSketchDotplot

geom_sketch_dotplot(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  binwidth = NULL,
  dotsize = 1,
  stackratio = 1,
  stackdir = "up",
  roughness = 0.6,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

Arguments

<code>mapping</code>	Aesthetic mappings created by <code>ggplot2::aes()</code> . Requires <code>x</code> .
<code>data</code>	Data to display.
<code>stat</code>	Statistical transformation. Default "identity".
<code>position</code>	Position adjustment. Default "identity".
<code>...</code>	Other arguments passed on to the layer.
<code>binwidth</code>	Bin width in data units. NULL (default) uses 1/30 of the data range.
<code>dotsize</code>	Dot diameter as a multiple of the bin width. Default 1.
<code>stackratio</code>	Vertical spacing between stacked dots, as a fraction of the dot diameter. Default 1.
<code>stackdir</code>	Stacking direction. Only "up" is currently supported.
<code>roughness</code>	Non-negative dot roughness. Default 0.6.
<code>bowing</code>	Non-negative bowing multiplier. Default 1.
<code>n_passes</code>	Number of stroke passes. Default 2.
<code>seed</code>	Integer seed. NULL uses <code>getOption("ggskech.seed", 1L)</code> .
<code>na.rm</code>	Remove missing values silently? Default FALSE.
<code>show.legend</code>	Logical; include in legend?
<code>inherit.aes</code>	Override default aesthetics?

Details

As in `ggplot2::geom_dotplot()`, the dots are sized by the bin width and the y axis (the per-bin count) is only approximate; turn it off with `scale_y_continuous(NULL, breaks = NULL)` for a clean look.

Value

A `ggplot2` layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#),

```
geom_sketch_histogram(), geom_sketch_jitter(), geom_sketch_marimekko(), geom_sketch_mosaic(),
geom_sketch_parallel(), geom_sketch_qq(), geom_sketch_quantile(), geom_sketch_rose(),
geom_sketch_sunburst(), geom_sketch_text(), sketch_graph()
```

Examples

```
library(ggplot2)
ggplot(faithful, aes(eruptions)) +
  geom_sketch_dotplot(binwidth = 0.12, fill = "#7BAFD4", seed = 1L) +
  scale_y_continuous(NULL, breaks = NULL) +
  theme_sketch()
```

GeomSketchDumbbell	<i>Sketchy dumbbell chart</i>
--------------------	-------------------------------

Description

Draws a hand-drawn dumbbell: a roughened connector from x to $xend$ on a shared y , capped with a sketch point at each end. Ideal for showing the change or gap between two paired values per category (cf. `ggalt::geom_dumbbell()`).

Usage

```
GeomSketchDumbbell

geom_sketch_dumbbell(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  colour_x = NULL,
  colour_xend = NULL,
  roughness = 0.6,
  point_roughness = 0.4,
  bowing = 0.4,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

Arguments

mapping	Aesthetic mappings created by <code>ggplot2::aes()</code> . Requires x , $xend$ and y .
data	Data to display.

<code>stat</code>	Statistical transformation. Default "identity".
<code>position</code>	Position adjustment. Default "identity".
<code>...</code>	Other arguments passed on to the layer.
<code>colour_x</code>	Colour of the dot at x. Default NULL (uses colour).
<code>colour_xend</code>	Colour of the dot at xend. Default NULL (uses colour).
<code>roughness</code>	Connector roughness (0 = straight). Default 0.6.
<code>point_roughness</code>	Roughness of the end dots. Default 0.4.
<code>bowing</code>	Non-negative bowing multiplier. Default 0.4.
<code>n_passes</code>	Number of stroke passes. Default 2.
<code>seed</code>	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
<code>na.rm</code>	Remove missing values silently? Default FALSE.
<code>show.legend</code>	Logical; include in legend?
<code>inherit.aes</code>	Override default aesthetics?

Value

A `ggplot2` layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
df <- data.frame(g = c("Alpha", "Bravo", "Charlie", "Delta"),
                 before = c(20, 35, 28, 42),
                 after = c(34, 51, 22, 47))
ggplot(df, aes(x = before, xend = after, y = g)) +
  geom_sketch_dumbbell(colour_x = "#B03A2E", colour_xend = "#1F618D",
                     seed = 1L) +
  theme_sketch()
```

GeomSketchEdge	<i>Sketchy network edges and nodes</i>
----------------	--

Description

A hand-drawn take on network/graph plotting. `geom_sketch_edge()` draws a roughened connector between (x, y) and $(xend, yend)$; `geom_sketch_node()` draws roughened node markers with optional handwriting labels. Pair them with `sketch_graph()`, which computes node positions with a pure-R force-directed layout (`force_layout()`) and returns the two data frames these geoms expect - no graph package required.

Usage

GeomSketchEdge

```
geom_sketch_edge(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  curvature = 0,  
  roughness = 1,  
  bowing = 1,  
  n_passes = 2L,  
  seed = NULL,  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

GeomSketchNode

```
geom_sketch_node(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  roughness = NULL,  
  bowing = NULL,  
  n_passes = 2L,  
  seed = NULL,  
  label_size = 3.2,  
  label_colour = "grey15",  
  label_family = NULL,  
  na.rm = FALSE,
```

```

    show.legend = NA,
    inherit.aes = TRUE
  )

```

Arguments

mapping	Aesthetic mappings created by ggplot2::aes() .
data	Data to display. For geom_sketch_edge() the rows need x/y/xend/yend; for geom_sketch_node() they need x/y (and an optional label). Typically the \$edges and \$nodes from sketch_graph() .
stat, position	Statistical transformation and position adjustment. Default "identity" for both.
...	Other arguments passed on to the layer.
curvature	Edge bend. 0 (default) draws straight roughened edges; non-zero gives arc edges (a quadratic Bezier), like geom_sketch_curve() .
roughness, bowing, n_passes, seed	Sketch parameters; see geom_sketch_path() . For geom_sketch_node() , roughness is a mappable aesthetic (per node).
na.rm	Remove missing values silently? Default FALSE.
show.legend, inherit.aes	Standard layer arguments.
label_size	Handwriting label size (mm). Default 3.2.
label_colour	Label colour. Default "grey15".
label_family	Label font family. Defaults to the first installed handwriting face (as geom_sketch_text() uses).

Value

A ggplot2 layer object.

See Also

[sketch_graph\(\)](#), [force_layout\(\)](#).

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#),

```
geom_sketch_histogram(), geom_sketch_jitter(), geom_sketch_marimekko(), geom_sketch_mosaic(),
geom_sketch_parallel(), geom_sketch_qq(), geom_sketch_quantile(), geom_sketch_rose(),
geom_sketch_sunburst(), geom_sketch_text(), sketch_graph()
```

Examples

```
library(ggplot2)
edges <- data.frame(
  from = c("A", "A", "B", "C", "C", "D"),
  to   = c("B", "C", "C", "D", "E", "E")
)
g <- sketch_graph(edges, seed = 1L)
ggplot() +
  geom_sketch_edge(data = g$edges,
    aes(x = x, y = y, xend = xend, yend = yend), seed = 1L) +
  geom_sketch_node(data = g$nodes,
    aes(x = x, y = y, label = name), size = 6, seed = 2L) +
  coord_equal() +
  theme_void()
```

GeomSketchEllipse

Sketchy circle and ellipse geoms

Description

`geom_sketch_circle()` draws roughened circles of radius *r* (data units); `geom_sketch_ellipse()` draws ellipses with semi-axes *a* (*x*) and *b* (*y*). Radii are in data units, so on a non-square panel a circle appears elliptical - use `ggplot2::coord_equal()` for true circles. These are annotation-style geoms (cf. `ggforce::geom_circle()`).

Usage

GeomSketchEllipse

GeomSketchCircle

```
geom_sketch_circle(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  roughness = NULL,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  fill_style = "hachure",
  hachure_angle = 45,
```

```

    hatchure_gap = 0.07,
    fill_weight = 0.5,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

geom_sketch_ellipse(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  fill_style = "hachure",
  hatchure_angle = 45,
  hatchure_gap = 0.07,
  fill_weight = 0.5,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)

```

Arguments

mapping	Set of aesthetic mappings created by <code>ggplot2::aes()</code> . <code>geom_sketch_circle()</code> needs x, y, r; <code>geom_sketch_ellipse()</code> needs x, y, a, b.
data	Data to display.
stat	Statistical transformation. Default "identity".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
roughness	Non-negative roughness (0 = clean). A mappable aesthetic (default 1): pass a constant, or map it per shape with <code>aes(roughness =)</code> (rescaled by <code>scale_roughness_continuous()</code>).
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
fill_style	Fill style when fill is mapped: "hachure", "cross_hatch", "zigzag", "scribble", "dots", "dashed", "stipple", "pencil_shade". Default "hachure".
hachure_angle	Fill line angle in degrees. Default 45.
hachure_gap	Fill line gap (npc fraction, scaled by radius). Default 0.07.
fill_weight	Stroke weight for fill lines. Default 0.5.
na.rm	Remove missing values silently? Default FALSE.

<code>show.legend</code>	Logical; include in legend?
<code>inherit.aes</code>	Override default aesthetics?

Value

A `ggplot2` layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
df <- data.frame(x = c(1, 3), y = c(1, 2), r = c(0.5, 1))
ggplot(df, aes(x, y, r = r)) +
  geom_sketch_circle(fill = "gold", seed = 1L) +
  coord_equal() + theme_sketch()
```

GeomSketchEngrave

Sketchy engraving: tonal shading by hatch-line density

Description

`geom_sketch_engrave()` shades a surface the way an etcher or banknote engraver does: continuous tone is built from the *density* of hand-drawn hatch lines, with cross-hatching deepening the shadows. It takes a regular grid of *x*, *y*, and *z* (like [ggplot2::geom_raster\(\)](#)); *z* is mapped to tone (high = dark by default). Unlike the fill-pattern packages, the tone is *computed* from geometry (a [engrave_fill\(\)](#) ladder), not tiled from a motif.

Usage

GeomSketchEngrave

GeomSketchShade

```
geom_sketch_engrave(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  levels = 5L,  
  base_gap = 0.08,  
  gap_ratio = 0.62,  
  base_angle = 45,  
  cross_after = 3L,  
  reverse = FALSE,  
  roughness = 0.5,  
  bowing = 0.3,  
  min_gap_in = 0.012,  
  seed = NULL,  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

```
geom_sketch_shade(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  levels = 5L,  
  base_gap = 0.08,  
  gap_ratio = 0.62,  
  base_angle = 45,  
  cross_after = 3L,  
  roughness = 0.5,  
  bowing = 0.3,  
  min_gap_in = 0.012,  
  seed = NULL,  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

Arguments

mapping	Aesthetic mappings created by <code>ggplot2::aes()</code> . <code>geom_sketch_engrave()</code> needs x, y, z; <code>geom_sketch_shade()</code> needs x, y and uses the tone aesthetic (default 0.6).
data	Data to display.
stat	Statistical transformation. Default "identity".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
levels	Number of hatch layers in the ladder. Default 5.
base_gap	Pitch of the sparsest layer (npc-x fraction). Default 0.08.
gap_ratio	Multiplicative pitch shrink per layer (smaller = densens faster). Default 0.62.
base_angle	Angle of the first hatch layer (degrees). Default 45.
cross_after	Layer index at which cross-hatching begins. Default 3.
reverse	(<code>geom_sketch_engrave()</code> only) Invert the tone mapping so low z is dark. Default FALSE.
roughness	Non-negative stroke roughness. Default 0.5.
bowing	Non-negative bowing multiplier. Default 0.3.
min_gap_in	Pitch floor in inches; finer ladder layers are dropped. Default 0.012.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Details

`geom_sketch_shade()` shades each polygon region with a *uniform* density set by a tone aesthetic in $[0, 1]$, so a mapped value reads directly as darkness – a hand-drawn alternative to a solid fill scale.

The hatch ladder is a stack of layers of increasing density and rotating angle (`levels`, `base_gap`, `gap_ratio`, `base_angle`, `cross_after`); each layer is drawn only where the tone reaches its threshold, so light areas keep the sparse base layer and shadows accumulate every layer. `min_gap_in` is a pitch floor (inches) that keeps the darkest tones from exploding into a runaway number of strokes.

Value

A `ggplot2` layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#),

GeomSketchMarkHull, GeomSketchPath, GeomSketchPoint, GeomSketchPolygon, GeomSketchRect, GeomSketchRibbon, GeomSketchRug, GeomSketchSegment, GeomSketchSfPolygon, GeomSketchSlope, GeomSketchSmooth, GeomSketchSpoke, GeomSketchTextRepel, GeomSketchViolin, StatSketchBeeswarm, StatSketchCalendar, StatSketchDensityRidges, StatSketchFunnel, StatSketchPie, StatSketchPyramid, StatSketchRadar, StatSketchStream, StatSketchTreemap, StatSketchWaffle, StatSketchWaterfall, `annotate_sketch()`, `annotate_sketch_arrow()`, `annotate_sketch_callout()`, `annotate_sketch_highlight()`, `geom_sketch_alluvial()`, `geom_sketch_arc_diagram()`, `geom_sketch_bin2d()`, `geom_sketch_bump()`, `geom_sketch_chord()`, `geom_sketch_contour()`, `geom_sketch_count()`, `geom_sketch_dendrogram()`, `geom_sketch_density()`, `geom_sketch_density2d()`, `geom_sketch_ecdf()`, `geom_sketch_function()`, `geom_sketch_histogram()`, `geom_sketch_jitter()`, `geom_sketch_marimekko()`, `geom_sketch_mosaic()`, `geom_sketch_parallel()`, `geom_sketch_qq()`, `geom_sketch_quantile()`, `geom_sketch_rose()`, `geom_sketch_sunburst()`, `geom_sketch_text()`, `sketch_graph()`

Examples

```
library(ggplot2)
ggplot(faithfuld, aes(waiting, eruptions, z = density)) +
  geom_sketch_engrave(seed = 1L) +
  theme_sketch()

# A real surface: an engraved relief map of Maungawhau (Mt Eden),
# the way a 19th-century atlas shades elevation by hatch density.
volcano_df <- expand.grid(
  easting = seq_len(nrow(volcano)),
  northing = seq_len(ncol(volcano))
)
volcano_df$height <- as.vector(volcano)

ggplot(volcano_df, aes(easting, northing, z = height)) +
  geom_sketch_engrave(
    levels = 8L, base_gap = 0.04, gap_ratio = 0.72,
    roughness = 0.35, bowing = 0.2, seed = 1L
  ) +
  coord_equal() +
  labs(title = "Maungawhau", subtitle = "engraved by elevation") +
  theme_sketch()
```

GeomSketchGantt

Sketchy Gantt / timeline chart

Description

Draws a hand-drawn Gantt chart: one roughened bar per task from `x` (start) to `xend` (end) on a discrete `y` – the whiteboard project-planning look. Map an optional progress aesthetic (0 to 1) to overlay a slimmer, darker solid bar over the completed fraction of each task. Works with dates, date-times or plain numbers on the `x` axis, and with every `fill_style` (including "watercolor"); `corner_radius` rounds the bar ends.

Usage

GeomSketchGantt

```
geom_sketch_gantt(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  height = 0.55,
  progress_shade = 0.65,
  corner_radius = 0.15,
  fill_style = "hachure",
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

Arguments

mapping	Aesthetic mappings created by <code>ggplot2::aes()</code> . Requires x, xend and y; optionally progress (completed fraction, 0-1).
data	Data to display.
stat	Statistical transformation. Default "identity".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
height	Bar height in y units. Default 0.55.
progress_shade	Channel multiplier (< 1 darkens) for the progress overlay's fill. Default 0.65.
corner_radius	Corner rounding of the bars; see <code>geom_sketch_rect()</code> . Default 0.15.
fill_style	Bar fill style; see <code>geom_sketch_rect()</code> . Default "hachure".
roughness, bowing, n_passes, seed	Sketch parameters.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAbline](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
plan <- data.frame(
  task = factor(c("Design", "Build", "Test", "Ship"),
    levels = rev(c("Design", "Build", "Test", "Ship"))),
  start = as.Date(c("2026-01-05", "2026-01-19", "2026-02-09", "2026-02-23")),
  end = as.Date(c("2026-01-23", "2026-02-13", "2026-02-27", "2026-03-06")),
  done = c(1, 0.7, 0.25, 0)
)
ggplot(plan, aes(x = start, xend = end, y = task, fill = task,
  progress = done)) +
  geom_sketch_gantt(seed = 1L, show.legend = FALSE) +
  theme_sketch()
```

GeomSketchHex

Sketchy hexagonal heatmap

Description

Bins data into hexagons and draws each as a hand-drawn hexagon shaded by count - the sketch analogue of `ggplot2::geom_hex()` / `ggplot2::stat_bin_hex()`. Requires the optional **hexbin** package.

Usage

```
GeomSketchHex

geom_sketch_hex(
  mapping = NULL,
```

```

data = NULL,
stat = "binhex",
position = "identity",
...,
bins = 30,
binwidth = NULL,
roughness = 1,
bowing = 1,
n_passes = 2L,
seed = NULL,
fill_style = "hachure",
hachure_angle = 45,
hachure_gap = NULL,
fill_weight = 0.5,
na.rm = FALSE,
show.legend = NA,
inherit.aes = TRUE
)

```

Arguments

mapping	Set of aesthetic mappings created by <code>ggplot2::aes()</code> .
data	Data to display.
stat	Statistical transformation. Default "identity" for <code>geom_sketch_col()</code> ; "count" for <code>geom_sketch_bar()</code> .
position	Position adjustment. Default "stack".
...	Other arguments passed on to the layer.
bins	Number of hexagons in each direction. Default 30.
binwidth	Hexagon width(s); overrides bins when supplied.
roughness	Non-negative roughness (0 = straight lines). A mappable aesthetic (default 1): pass a constant, or map it per bar with <code>aes(roughness =)</code> (rescaled by <code>scale_roughness_continuous()</code>).
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
fill_style	One of "hachure", "cross_hatch", "zigzag", "zigzag_line", "scribble", "dots", "dashed", "stipple", "pencil_shade", or "solid". Default "hachure".
hachure_angle	Fill line angle in degrees. Default 45.
hachure_gap	Fill line gap in device inches (NULL = 15% of the bar's smaller drawn side, clamped to [0.04, 0.4] inches).
fill_weight	Stroke weight for fill lines. Default 0.5.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
if (requireNamespace("hexbin", quietly = TRUE)) {
  ggplot(faithful, aes(eruptions, waiting)) +
    geom_sketch_hex(bins = 12, seed = 1L) +
    scale_fill_viridis_c() +
    theme_sketch()
}
```

GeomSketchLine

Sketchy line geom

Description

Draws a roughened line connecting points in order of x. Equivalent to `geom_line()` with a sketch aesthetic.

Usage

```
GeomSketchLine
```

```
geom_sketch_line(
  mapping = NULL,
  data = NULL,
```

```

stat = "identity",
position = "identity",
...,
roughness = 1,
bowing = 1,
n_passes = 2L,
seed = NULL,
medium = NULL,
na.rm = FALSE,
show.legend = NA,
inherit.aes = TRUE
)

```

Arguments

mapping	Set of aesthetic mappings created by <code>ggplot2::aes()</code> .
data	Data to display.
stat	Statistical transformation (default "identity").
position	Position adjustment (default "identity").
...	Other arguments passed on to the layer.
roughness	Non-negative roughness parameter (0 = straight). Default 1.
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes for the double-stroke effect. Default 2.
seed	Integer seed for reproducibility. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
medium	Drawing medium for the stroke: one of <code>sketch_media()</code> ("pen", "ink", "fountain_pen", "ballpoint", "brush", "pencil", "charcoal", "pastel", "chalk", "marker", "highlighter", "crayon", "spray"). NULL (default) uses "pen", the classic constant-width double stroke; most others render through the variable-width <code>stroke_ribbon()</code> engine (tapered ink, brushy swells, grainy pencil/charcoal, dusty chalk, a translucent highlighter band, ...), and "spray" renders as a soft airbrush dot cloud (<code>sketch_spray_grob()</code>). medium is also a mappable aesthetic: map it with <code>aes(medium =)</code> (one medium per group) and control the mapping with <code>scale_medium_discrete()</code> .
na.rm	If FALSE (default), missing values are removed with a warning.
show.legend	Logical. Should this layer be included in the legend?
inherit.aes	If FALSE, override the default aesthetics.

Value

A ggplot2 layer (a LayerInstance object) that can be added to a plot with `+`.

See Also

Other sketch-geoms: [GeomSketchAbline](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#),

GeomSketchDotplot, GeomSketchDumbbell, GeomSketchEdge, GeomSketchEllipse, GeomSketchEngrave, GeomSketchGantt, GeomSketchHex, GeomSketchLinerange, GeomSketchLollipop, GeomSketchMarkCircle, GeomSketchMarkHull, GeomSketchPath, GeomSketchPoint, GeomSketchPolygon, GeomSketchRect, GeomSketchRibbon, GeomSketchRug, GeomSketchSegment, GeomSketchSfPolygon, GeomSketchSlope, GeomSketchSmooth, GeomSketchSpoke, GeomSketchTextRepel, GeomSketchViolin, StatSketchBeeswarm, StatSketchCalendar, StatSketchDensityRidges, StatSketchFunnel, StatSketchPie, StatSketchPyramid, StatSketchRadar, StatSketchStream, StatSketchTreemap, StatSketchWaffle, StatSketchWaterfall, `annotate_sketch()`, `annotate_sketch_arrow()`, `annotate_sketch_callout()`, `annotate_sketch_highlight()`, `geom_sketch_alluvial()`, `geom_sketch_arc_diagram()`, `geom_sketch_bin2d()`, `geom_sketch_bump()`, `geom_sketch_chord()`, `geom_sketch_contour()`, `geom_sketch_count()`, `geom_sketch_dendrogram()`, `geom_sketch_density()`, `geom_sketch_density2d()`, `geom_sketch_ecdf()`, `geom_sketch_function()`, `geom_sketch_histogram()`, `geom_sketch_jitter()`, `geom_sketch_marimekko()`, `geom_sketch_mosaic()`, `geom_sketch_parallel()`, `geom_sketch_qq()`, `geom_sketch_quantile()`, `geom_sketch_rose()`, `geom_sketch_sunburst()`, `geom_sketch_text()`, `sketch_graph()`

Examples

```
library(ggplot2)
ggplot(economics, aes(date, unemploy)) +
  geom_sketch_line(roughness = 1, seed = 1L)
```

GeomSketchLinerange	<i>Sketchy interval geoms</i>
---------------------	-------------------------------

Description

Hand-drawn uncertainty intervals at each x: `geom_sketch_linerange()` draws a vertical range from `ymin` to `ymax`; `geom_sketch_pointrange()` adds a point at `y`; `geom_sketch_errorbar()` adds end caps; `geom_sketch_crossbar()` draws a rough box with a line at `y`. Sketch analogues of `ggplot2::geom_linerange()` and friends. Vertical orientation only in this release.

Usage

GeomSketchLinerange

GeomSketchPointrange

GeomSketchErrorbar

GeomSketchCrossbar

```
geom_sketch_linerange(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,

```

```
    roughness = 0.7,
    bowing = 1,
    n_passes = 2L,
    seed = NULL,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

geom_sketch_pointrange(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  fatten = 4,
  roughness = 0.7,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)

geom_sketch_errorbar(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  width = 0.5,
  roughness = 0.7,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)

geom_sketch_crossbar(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  width = 0.5,
```

```

    roughness = 0.7,
    bowing = 1,
    n_passes = 2L,
    seed = NULL,
    fill_style = "solid",
    hatchure_angle = 45,
    hatchure_gap = NULL,
    fill_weight = 0.5,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

```

Arguments

mapping, data, stat, position, na.rm, show.legend, inherit.aes, ...
Standard layer arguments.

roughness, bowing, n_passes, seed
Sketch parameters.

fatten For pointrange, multiply the point size by this factor.

width For errorbar/crossbar, the cap/box width in data units.

fill_style, hatchure_angle, hatchure_gap, fill_weight
Fill parameters for the crossbar box.

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
df <- data.frame(x = c("a", "b", "c"), y = c(2, 5, 4),
                 lo = c(1, 4, 2.5), hi = c(3, 6, 5.5))
ggplot(df, aes(x, y)) +
  geom_sketch_pointrange(aes(ymin = lo, ymax = hi), seed = 1L) +
  theme_sketch()
```

GeomSketchLollipop	<i>Sketchy lollipop chart</i>
--------------------	-------------------------------

Description

Draws a hand-drawn lollipop: a roughened stem from a baseline to each value, capped with a sketch point. A tidy alternative to bars for ranked or sparse values (cf. `ggalt::geom_lollipop()`).

Usage

```
GeomSketchLollipop

geom_sketch_lollipop(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  baseline = 0,
  horizontal = FALSE,
  roughness = 0.8,
  point_roughness = 0.4,
  bowing = 0.4,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

Arguments

<code>mapping</code>	Aesthetic mappings created by <code>ggplot2::aes()</code> . Requires <code>x</code> and <code>y</code> .
<code>data</code>	Data to display.
<code>stat</code>	Statistical transformation. Default <code>"identity"</code> .
<code>position</code>	Position adjustment. Default <code>"identity"</code> .
<code>...</code>	Other arguments passed on to the layer.
<code>baseline</code>	Value the stems grow from. Default <code>0</code> .

<code>horizontal</code>	If TRUE, stems run horizontally from baseline on the x-axis (pair with a discrete y). Default FALSE.
<code>roughness</code>	Stem roughness (0 = straight). Default 0.8.
<code>point_roughness</code>	Roughness of the head points. Default 0.4.
<code>bowing</code>	Non-negative bowing multiplier. Default 0.4 (kept low so tall stems read straight).
<code>n_passes</code>	Number of stroke passes. Default 2.
<code>seed</code>	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
<code>na.rm</code>	Remove missing values silently? Default FALSE.
<code>show.legend</code>	Logical; include in legend?
<code>inherit.aes</code>	Override default aesthetics?

Value

A `ggplot2` layer object.

See Also

Other sketch-geoms: [GeomSketchAbline](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
df <- data.frame(g = c("Alpha", "Bravo", "Charlie", "Delta"),
                 v = c(34, 51, 22, 47))
ggplot(df, aes(g, v)) +
  geom_sketch_lollipop(colour = "#7B241C", seed = 1L) +
  theme_sketch()
```

GeomSketchMarkCircle *Sketchy bounding marks around point groups*

Description

Draw a hand-drawn bounding shape around each group of points - the sketch analogues of `ggforce::geom_mark_circle()` / `geom_mark_ellipse()` / `geom_mark_rect()`, completing the family started by [geom_sketch_mark_hull\(\)](#).

Group the points with an aesthetic such as `group`, `colour`, or `fill`; each group gets its own mark.

With `fill` mapped the mark is shaded (using `fill_style`); otherwise it is outline-only. The position scales expand to contain the marks, so they are not clipped.

Usage

GeomSketchMarkCircle

GeomSketchMarkEllipse

GeomSketchMarkRect

```
geom_sketch_mark_circle(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  expand = 0.05,  
  roughness = 1,  
  bowing = 1,  
  n_passes = 2L,  
  seed = NULL,  
  fill_style = "hachure",  
  hachure_angle = 45,  
  hachure_gap = 0.07,  
  fill_weight = 0.5,  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

```
geom_sketch_mark_ellipse(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  expand = 0.05,  
  roughness = 1,
```

```

    bowing = 1,
    n_passes = 2L,
    seed = NULL,
    fill_style = "hachure",
    hachure_angle = 45,
    hachure_gap = 0.07,
    fill_weight = 0.5,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

  geom_sketch_mark_rect(
    mapping = NULL,
    data = NULL,
    stat = "identity",
    position = "identity",
    ...,
    expand = 0.05,
    roughness = 1,
    bowing = 1,
    n_passes = 2L,
    seed = NULL,
    fill_style = "hachure",
    hachure_angle = 45,
    hachure_gap = 0.07,
    fill_weight = 0.5,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

```

Arguments

mapping	Aesthetic mappings created by <code>ggplot2::aes()</code> . Requires x and y; map group/colour/fill to separate the clusters.
data	Data to display.
stat	Statistical transformation. Default "identity".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
expand	Fractional outward inflation of the mark, so it sits around the points rather than through them. Default 0.05.
roughness	Non-negative roughness (0 = clean). Default 1.
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .

<code>fill_style</code>	Fill style when fill is mapped: "hachure", "cross_hatch", "zigzag", "scribble", "dots", "dashed", "stipple", "pencil_shade", or "solid". Default "hachure".
<code>hachure_angle</code>	Fill line angle in degrees. Default 45.
<code>hachure_gap</code>	Fill line gap (npc fraction). Default 0.07.
<code>fill_weight</code>	Stroke weight for fill lines. Default 0.5.
<code>na.rm</code>	Remove missing values silently? Default FALSE.
<code>show.legend</code>	Logical; include in legend?
<code>inherit.aes</code>	Override default aesthetics?

Details

The boundary is computed in data units, so a `geom_sketch_mark_circle()` is a true circle only under `ggplot2::coord_equal()` (as for `geom_sketch_circle()`); on a non-square panel prefer `geom_sketch_mark_ellipse()`.

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
ggplot(iris, aes(Sepal.Length, Sepal.Width, colour = Species)) +
  geom_sketch_mark_ellipse(aes(fill = Species), seed = 1L) +
  geom_sketch_point(seed = 2L) +
  theme_sketch()
```

GeomSketchMarkHull *Sketchy hull marks around point groups*

Description

Draws a hand-drawn convex hull around each group of points - the sketch analogue of `ggforce::geom_mark_hull()`, for circling or grouping clusters. Group the points with an aesthetic such as `group`, `colour`, or `fill`; each group gets its own hull. With `fill` mapped the hull is shaded (using `fill_style`); otherwise it is outline-only.

Usage

```
GeomSketchMarkHull

geom_sketch_mark_hull(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  expand = 0.05,
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  fill_style = "hachure",
  hachure_angle = 45,
  hachure_gap = 0.07,
  fill_weight = 0.5,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

Arguments

<code>mapping</code>	Aesthetic mappings created by <code>ggplot2::aes()</code> . Requires <code>x</code> and <code>y</code> ; map <code>group/colour/fill</code> to separate the clusters.
<code>data</code>	Data to display.
<code>stat</code>	Statistical transformation. Default <code>"identity"</code> .
<code>position</code>	Position adjustment. Default <code>"identity"</code> .
<code>...</code>	Other arguments passed on to the layer.
<code>expand</code>	Fractional outward inflation of the hull from its centroid, so the mark sits around the points rather than through them. Default <code>0.05</code> .
<code>roughness</code>	Non-negative roughness (<code>0</code> = clean). Default <code>1</code> .

<code>bowing</code>	Non-negative bowing multiplier. Default 1.
<code>n_passes</code>	Number of stroke passes. Default 2.
<code>seed</code>	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
<code>fill_style</code>	Fill style when fill is mapped: "hachure", "cross_hatch", "zigzag", "scribble", "dots", "dashed", "stipple", "pencil_shade", or "solid". Default "hachure".
<code>hachure_angle</code>	Fill line angle in degrees. Default 45.
<code>hachure_gap</code>	Fill line gap (npc fraction). Default 0.07.
<code>fill_weight</code>	Stroke weight for fill lines. Default 0.5.
<code>na.rm</code>	Remove missing values silently? Default FALSE.
<code>show.legend</code>	Logical; include in legend?
<code>inherit.aes</code>	Override default aesthetics?

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
ggplot(iris, aes(Sepal.Length, Sepal.Width, colour = Species)) +
  geom_sketch_mark_hull(aes(fill = Species), expand = 0.08, seed = 1L) +
  geom_sketch_point(seed = 2L) +
  theme_sketch()
```

GeomSketchPath	<i>Sketchy path geom</i>
----------------	--------------------------

Description

Draws a roughened, hand-drawn path connecting observations in order. Equivalent to `geom_path()` with a sketch aesthetic.

Usage

```
GeomSketchPath

geom_sketch_path(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  medium = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

Arguments

<code>mapping</code>	Set of aesthetic mappings created by <code>ggplot2::aes()</code> .
<code>data</code>	Data to display.
<code>stat</code>	Statistical transformation (default "identity").
<code>position</code>	Position adjustment (default "identity").
<code>...</code>	Other arguments passed on to the layer.
<code>roughness</code>	Non-negative roughness parameter (0 = straight). Default 1.
<code>bowing</code>	Non-negative bowing multiplier. Default 1.
<code>n_passes</code>	Number of stroke passes for the double-stroke effect. Default 2.
<code>seed</code>	Integer seed for reproducibility. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
<code>medium</code>	Drawing medium for the stroke: one of <code>sketch_media()</code> ("pen", "ink", "fountain_pen", "ballpoint", "brush", "pencil", "charcoal", "pastel", "chalk", "marker", "highlighter", "crayon", "spray"). NULL (default) uses "pen", the classic constant-width double stroke; most others render through the variable-width <code>stroke_ribbon()</code> engine (tapered ink, brushy swells, grainy pencil/charcoal,

dusty chalk, a translucent highlighter band, ...), and "spray" renders as a soft airbrush dot cloud ([sketch_spray_grob\(\)](#)). `medium` is also a mappable aesthetic: map it with `aes(medium = )` (one medium per group) and control the mapping with [scale_medium_discrete\(\)](#).

<code>na.rm</code>	If FALSE (default), missing values are removed with a warning.
<code>show.legend</code>	Logical. Should this layer be included in the legend?
<code>inherit.aes</code>	If FALSE, override the default aesthetics.

Value

A `ggplot2` layer object.

Pressure

Map `aes(pressure = )` to a variable to make the stroke swell and thin **along** the line, like a pen pressed harder in places. The line is then drawn through the variable-width [stroke_ribbon\(\)](#) engine even under the default `medium = "pen"`, and combines with any non-pen medium (their width profiles multiply). The mapped values are rescaled by [scale_pressure_continuous\(\)](#); wrap in `base::I()` for raw multipliers.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
ggplot(economics, aes(date, unemployment)) +
  geom_sketch_path(roughness = 1.5, seed = 42L)

# Stroke width tracks a variable along the line.
ggplot(economics[1:150, ], aes(date, unemployment, pressure = unemployment)) +
  geom_sketch_path(linewidth = 1, seed = 42L)
```

GeomSketchPoint

Sketchy point geom

Description

Draws points as small roughened ellipses, giving each a hand-drawn feel. Equivalent to `geom_point()` with a sketch aesthetic.

Usage

GeomSketchPoint

```
geom_sketch_point(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  roughness = NULL,
  bowing = NULL,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

Arguments

<code>mapping</code>	Set of aesthetic mappings. Supports x, y, colour, size, alpha, and roughness.
<code>data</code>	Data to display.
<code>stat</code>	Statistical transformation (default "identity").
<code>position</code>	Position adjustment (default "identity").
<code>...</code>	Other arguments passed on to the layer.
<code>roughness</code>	Non-negative roughness parameter (0 = straight). Default 1.
<code>bowing</code>	Non-negative bowing multiplier. Default 1.
<code>n_passes</code>	Number of stroke passes for the double-stroke effect. Default 2.
<code>seed</code>	Integer seed for reproducibility. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
<code>na.rm</code>	If FALSE (default), missing values are removed with a warning.
<code>show.legend</code>	Logical. Should this layer be included in the legend?
<code>inherit.aes</code>	If FALSE, override the default aesthetics.

Details

Unlike the other geoms, roughness is a *mappable aesthetic* here: set it to a constant (`geom_sketch_point(roughness = 2)`) so every point wobbles the same amount, or map it to a variable (`aes(roughness = z)`) so each point wobbles more or less. A mapped variable is rescaled to a legible roughness band by `scale_roughness_continuous()` (the default range is `c(0.01, 0.75)`), exactly as `scale_size()` rescales to a size range. Wrap values in `base::I()` to use them as raw roughness instead.

Value

A ggplot2 layer (a `LayerInstance` object) that can be added to a plot with `+`.

See Also

`scale_roughness_continuous()` to control how a mapped variable is turned into roughness.

Other sketch-geoms: `GeomSketchAblin`, `GeomSketchArrow`, `GeomSketchBoxplot`, `GeomSketchBracket`, `GeomSketchCallout`, `GeomSketchChicklet`, `GeomSketchCol`, `GeomSketchContourFilled`, `GeomSketchCurve`, `GeomSketchDotplot`, `GeomSketchDumbbell`, `GeomSketchEdge`, `GeomSketchEllipse`, `GeomSketchEngrave`, `GeomSketchGantt`, `GeomSketchHex`, `GeomSketchLine`, `GeomSketchLinerange`, `GeomSketchLollipop`, `GeomSketchMarkCircle`, `GeomSketchMarkHull`, `GeomSketchPath`, `GeomSketchPolygon`, `GeomSketchRect`, `GeomSketchRibbon`, `GeomSketchRug`, `GeomSketchSegment`, `GeomSketchSfPolygon`, `GeomSketchSlope`, `GeomSketchSmooth`, `GeomSketchSpoke`, `GeomSketchTextRepel`, `GeomSketchViolin`, `StatSketchBeeswarm`, `StatSketchCalendar`, `StatSketchDensityRidges`, `StatSketchFunnel`, `StatSketchPie`, `StatSketchPyramid`, `StatSketchRadar`, `StatSketchStream`, `StatSketchTreemap`, `StatSketchWaffle`, `StatSketchWaterfall`, `annotate_sketch()`, `annotate_sketch_arrow()`, `annotate_sketch_callout()`, `annotate_sketch_highlight()`, `geom_sketch_alluvial()`, `geom_sketch_arc_diagram()`, `geom_sketch_bin2d()`, `geom_sketch_bump()`, `geom_sketch_chord()`, `geom_sketch_contour()`, `geom_sketch_count()`, `geom_sketch_dendrogram()`, `geom_sketch_density()`, `geom_sketch_density2d()`, `geom_sketch_ecdf()`, `geom_sketch_function()`, `geom_sketch_histogram()`, `geom_sketch_jitter()`, `geom_sketch_marimekko()`, `geom_sketch_mosaic()`, `geom_sketch_parallel()`, `geom_sketch_qq()`, `geom_sketch_quantile()`, `geom_sketch_rose()`, `geom_sketch_sunburst()`, `geom_sketch_text()`, `sketch_graph()`

Examples

```
library(ggplot2)
ggplot(mtcars, aes(wt, mpg)) +
  geom_sketch_point(roughness = 0.5, seed = 1L)

# A constant sets how wobbly every point is.
ggplot(mtcars, aes(wt, mpg)) +
  geom_sketch_point(roughness = 0, size = 3, seed = 1L)    # clean circles
ggplot(mtcars, aes(wt, mpg)) +
  geom_sketch_point(roughness = 1.5, size = 3, seed = 1L) # very sketchy

# Map roughness to a variable: rescaled to c(0.01, 0.75) by default.
ggplot(mtcars, aes(wt, mpg, roughness = hp)) +
  geom_sketch_point(size = 3, seed = 1L)
```

GeomSketchPolygon	<i>Sketchy polygon geom</i>
-------------------	-----------------------------

Description

Draws closed polygons with a hand-drawn roughened outline and a hachure / cross-hatch / zigzag / dots / dashed / solid fill. Concave polygons are filled correctly via the Active-Edge-Table scan-line algorithm. Equivalent to `ggplot2::geom_polygon()` with a sketch aesthetic.

Usage

GeomSketchPolygon

```
geom_sketch_polygon(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  fill_style = "hachure",
  hachure_angle = 45,
  hachure_gap = NULL,
  fill_weight = 0.5,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

Arguments

mapping	Set of aesthetic mappings created by <code>ggplot2::aes()</code> .
data	Data to display.
stat	Statistical transformation. Default "identity".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
roughness	Non-negative roughness (0 = straight). Default 1.
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
fill_style	One of "hachure", "cross_hatch", "zigzag", "zigzag_line", "scribble", "dots", "dashed", "stipple", "pencil_shade", or "solid". Default "hachure".

<code>hachure_angle</code>	Fill line angle in degrees. Default 45.
<code>hachure_gap</code>	Fill line gap in npc units (NULL = 7% of diagonal).
<code>fill_weight</code>	Stroke weight for fill lines. Default 0.5.
<code>na.rm</code>	Remove missing values silently? Default FALSE.
<code>show.legend</code>	Logical; include in legend?
<code>inherit.aes</code>	Override default aesthetics?

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
tri <- data.frame(x = c(0, 1, 0.5), y = c(0, 0, 1))
ggplot(tri, aes(x, y)) +
  geom_sketch_polygon(fill = "skyblue", seed = 1L) +
  theme_sketch()
```

GeomSketchRect

Sketchy rectangle / tile geom

Description

Draws filled rectangles with a hand-drawn roughened outline and a hachure, cross-hatch, zigzag, dots, dashed, or solid fill. `geom_sketch_rect()` takes the `xmin/xmax/ymin/ymax` aesthetics; `geom_sketch_tile()` takes `x/y` centres with optional `width/height` (like [ggplot2::geom_tile\(\)](#)).

Usage

GeomSketchRect

```
geom_sketch_rect(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  roughness = NULL,  
  bowing = 1,  
  n_passes = 2L,  
  seed = NULL,  
  fill_style = "hachure",  
  hachure_angle = 45,  
  hachure_gap = NULL,  
  fill_weight = 0.5,  
  corner_radius = 0,  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

GeomSketchTile

```
geom_sketch_tile(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  width = NULL,  
  height = NULL,  
  roughness = NULL,  
  bowing = 1,  
  n_passes = 2L,  
  seed = NULL,  
  fill_style = "hachure",  
  hachure_angle = 45,  
  hachure_gap = NULL,  
  fill_weight = 0.5,  
  corner_radius = 0,  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

Arguments

<code>mapping</code>	Set of aesthetic mappings created by <code>ggplot2::aes()</code> .
<code>data</code>	Data to display.
<code>stat</code>	Statistical transformation. Default "identity".
<code>position</code>	Position adjustment. Default "identity".
<code>...</code>	Other arguments passed on to the layer.
<code>roughness</code>	Non-negative roughness (0 = straight). A mappable aesthetic (default 1): pass a constant, or map it per rectangle with <code>aes(roughness =)</code> (rescaled by <code>scale_roughness_continuous()</code>).
<code>bowing</code>	Non-negative bowing multiplier. Default 1.
<code>n_passes</code>	Number of stroke passes. Default 2.
<code>seed</code>	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
<code>fill_style</code>	One of "hachure", "cross_hatch", "zigzag", "zigzag_line", "scribble", "dots", "dashed", "stipple", "pencil_shade", or "solid". Default "hachure".
<code>hachure_angle</code>	Fill line angle in degrees. Default 45.
<code>hachure_gap</code>	Fill line gap in device inches (NULL = 15% of the rectangle's smaller drawn side, clamped to [0.04, 0.4] inches).
<code>fill_weight</code>	Stroke weight for fill lines. Default 0.5.
<code>corner_radius</code>	Corner rounding as a fraction [0, 1] of each half-side. 0 (default) gives sharp corners; 1 fully rounds the ends.
<code>na.rm</code>	Remove missing values silently? Default FALSE.
<code>show.legend</code>	Logical; include in legend?
<code>inherit.aes</code>	Override default aesthetics?
<code>width, height</code>	Tile size overrides for <code>geom_sketch_tile()</code> . NULL uses the data resolution.

Value

A `ggplot2` layer object.

See Also

Other sketch-geoms: [GeomSketchAbline](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
df <- data.frame(xmin = 1, xmax = 3, ymin = 1, ymax = 4)
ggplot(df) +
  geom_sketch_rect(aes(xmin = xmin, xmax = xmax, ymin = ymin, ymax = ymax),
                  corner_radius = 0.3, seed = 1L) +
  theme_sketch()
```

GeomSketchRibbon

Sketchy ribbon and area geoms

Description

`geom_sketch_ribbon()` draws a hand-drawn band between `ymin` and `ymax`. `geom_sketch_area()` is the special case anchored at zero (`ymin = 0`, `ymax = y`). Both use a roughened outline and a hachure-style fill, the sketch analogues of `ggplot2::geom_ribbon()` / `ggplot2::geom_area()`.

Usage

GeomSketchRibbon

```
geom_sketch_ribbon(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  fill_style = "hachure",
  hachure_angle = 45,
  hachure_gap = NULL,
  fill_weight = 0.5,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

GeomSketchArea

```
geom_sketch_area(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
```

```

    ...,
    roughness = 1,
    bowing = 1,
    n_passes = 2L,
    seed = NULL,
    fill_style = "hachure",
    hachure_angle = 45,
    hachure_gap = NULL,
    fill_weight = 0.5,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

```

Arguments

mapping	Set of aesthetic mappings created by <code>ggplot2::aes()</code> .
data	Data to display.
stat	Statistical transformation. Default "identity".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
roughness	Non-negative roughness (0 = straight). Default 1.
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
fill_style	One of "hachure", "cross_hatch", "zigzag", "zigzag_line", "scribble", "dots", "dashed", "stipple", "pencil_shade", or "solid". Default "hachure".
hachure_angle	Fill line angle in degrees. Default 45.
hachure_gap	Fill line gap in npc units (NULL = 6% of diagonal).
fill_weight	Stroke weight for fill lines. Default 0.5.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A `ggplot2` layer object.

See Also

Other sketch-geoms: [GeomSketchAbline](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#),

GeomSketchMarkCircle, GeomSketchMarkHull, GeomSketchPath, GeomSketchPoint, GeomSketchPolygon, GeomSketchRect, GeomSketchRug, GeomSketchSegment, GeomSketchSfPolygon, GeomSketchSlope, GeomSketchSmooth, GeomSketchSpoke, GeomSketchTextRepel, GeomSketchViolin, StatSketchBeeswarm, StatSketchCalendar, StatSketchDensityRidges, StatSketchFunnel, StatSketchPie, StatSketchPyramid, StatSketchRadar, StatSketchStream, StatSketchTreemap, StatSketchWaffle, StatSketchWaterfall, `annotate_sketch()`, `annotate_sketch_arrow()`, `annotate_sketch_callout()`, `annotate_sketch_highlight()`, `geom_sketch_alluvial()`, `geom_sketch_arc_diagram()`, `geom_sketch_bin2d()`, `geom_sketch_bump()`, `geom_sketch_chord()`, `geom_sketch_contour()`, `geom_sketch_count()`, `geom_sketch_dendrogram()`, `geom_sketch_density()`, `geom_sketch_density2d()`, `geom_sketch_ecdf()`, `geom_sketch_function()`, `geom_sketch_histogram()`, `geom_sketch_jitter()`, `geom_sketch_marimekko()`, `geom_sketch_mosaic()`, `geom_sketch_parallel()`, `geom_sketch_qq()`, `geom_sketch_quantile()`, `geom_sketch_rose()`, `geom_sketch_sunburst()`, `geom_sketch_text()`, `sketch_graph()`

Examples

```
library(ggplot2)
df <- data.frame(x = 1:10, lo = (1:10) - 2, hi = (1:10) + 2)
ggplot(df, aes(x)) +
  geom_sketch_ribbon(aes(ymin = lo, ymax = hi), fill = "plum", seed = 1L) +
  theme_sketch()
```

GeomSketchRug

Sketchy marginal rug

Description

Draws short hand-drawn ticks along the panel edges, one per observation - the sketch analogue of `ggplot2::geom_rug()`. Maps the x and/or y aesthetics.

Usage

GeomSketchRug

```
geom_sketch_rug(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  sides = "b1",
  length = 0.03,
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

Arguments

mapping	Set of aesthetic mappings created by <code>ggplot2::aes()</code> .
data	Data to display.
stat	Statistical transformation (default "identity").
position	Position adjustment (default "identity").
...	Other arguments passed on to the layer.
sides	Which edges to draw on: any of "t", "r", "b", "l" combined in a string. Default "bl" (bottom + left).
length	Tick length as a fraction of the panel (npc). Default 0.03.
roughness	Non-negative roughness parameter (0 = straight). Default 1.
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes for the double-stroke effect. Default 2.
seed	Integer seed for reproducibility. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
na.rm	If FALSE (default), missing values are removed with a warning.
show.legend	Logical. Should this layer be included in the legend?
inherit.aes	If FALSE, override the default aesthetics.

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
ggplot(mtcars, aes(wt, mpg)) +
  geom_sketch_point(seed = 1L) +
```

```
geom_sketch_rug(seed = 2L) +  
theme_sketch()
```

GeomSketchSegment	<i>Sketchy segment and step geoms</i>
-------------------	---------------------------------------

Description

`geom_sketch_segment()` draws roughened straight segments from (x, y) to (xend, yend).
`geom_sketch_step()` connects points with a hand-drawn stairstep. Sketch analogues of `ggplot2::geom_segment()` / `ggplot2::geom_step()`.

Usage

GeomSketchSegment

```
geom_sketch_segment(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  roughness = NULL,  
  bowing = 1,  
  n_passes = 2L,  
  seed = NULL,  
  medium = NULL,  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

GeomSketchStep

```
geom_sketch_step(  
  mapping = NULL,  
  data = NULL,  
  stat = "identity",  
  position = "identity",  
  ...,  
  direction = "hv",  
  roughness = 1,  
  bowing = 1,  
  n_passes = 2L,  
  seed = NULL,  
  medium = NULL,  
  na.rm = FALSE,
```

```

    show.legend = NA,
    inherit.aes = TRUE
  )

```

Arguments

mapping	Set of aesthetic mappings created by ggplot2::aes() .
data	Data to display.
stat	Statistical transformation. Default "identity".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
roughness	Non-negative roughness (0 = straight). Default 1. For <code>geom_sketch_segment()</code> this is a mappable aesthetic (map it per segment with <code>aes(roughness =)</code> , rescaled by scale_roughness_continuous() ; for <code>geom_sketch_step()</code> it is a layer parameter (one path per group).
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggskech.seed", 1L)</code> .
medium	Drawing medium for the stroke: one of sketch_media() . The default "pen" is the classic constant-width double stroke; the others ("ink", "brush", "pencil", "chalk", "marker", "highlighter", "crayon") render through the variable-width stroke_ribbon() engine.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?
direction	For <code>geom_sketch_step()</code> : "hv" (horizontal then vertical, default) or "vh".

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#),

```
geom_sketch_density(), geom_sketch_density2d(), geom_sketch_ecdf(), geom_sketch_function(),
geom_sketch_histogram(), geom_sketch_jitter(), geom_sketch_marimekko(), geom_sketch_mosaic(),
geom_sketch_parallel(), geom_sketch_qq(), geom_sketch_quantile(), geom_sketch_rose(),
geom_sketch_sunburst(), geom_sketch_text(), sketch_graph()
```

Examples

```
library(ggplot2)
df <- data.frame(x = 1:3, y = 1:3, xend = 2:4, yend = c(3, 1, 4))
ggplot(df) +
  geom_sketch_segment(aes(x = x, y = y, xend = xend, yend = yend),
    seed = 1L) +
  theme_sketch()
```

GeomSketchSfPolygon *Sketchy simple-features (sf) maps*

Description

A hand-drawn take on `ggplot2::geom_sf()`. Roughens the boundaries of sf geometry: (MULTI)POLYGON features are filled with a hole-aware hachure (or any `fill_style`), (MULTI)LINestring features become sketch paths, and (MULTI)POINT features become sketch points. One call draws whichever geometry types are present.

Usage

GeomSketchSfPolygon

```
geom_sketch_sf(
  mapping = ggplot2::aes(),
  data = NULL,
  ...,
  fill_style = "hachure",
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = FALSE
)
```

Arguments

mapping	Aesthetic mappings created by <code>ggplot2::aes()</code> , referring to columns of data (e.g. <code>aes(fill = pop)</code>). The geometry column is handled automatically - do not map it.
data	An sf or sfc object (required).

... Other arguments passed on to the underlying layers.

`fill_style` Fill style for polygons; see [geom_sketch_polygon\(\)](#). Default "hachure".

`roughness`, `bowing`, `n_passes`, `seed` Sketch parameters; see [geom_sketch_path\(\)](#).

`na.rm` Remove missing values silently? Default FALSE.

`show.legend`, `inherit.aes` Standard layer arguments. `inherit.aes` defaults to FALSE (as for `geom_sf()`).

Details

Requires the **sf** package. Unlike `geom_sf()`, this does not integrate with `coord_sf()`; it plots in **planar coordinates**, so pre-project longitude/latitude data with [sf::st_transform\(\)](#) for an undistorted map. The data argument must be given explicitly (an `sf` or `sfc` object); aesthetics in mapping refer to columns of that object.

Value

A list of ggplot2 layers (one per geometry kind present).

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
nc <- sf::st_read(system.file("shape/nc.shp", package = "sf"), quiet = TRUE)
ggplot() +
  geom_sketch_sf(data = nc, aes(fill = AREA), seed = 1L) +
  scale_fill_viridis_c() +
  theme_void()
```

GeomSketchSlope

*Sketchy slope graph***Description**

Draws a hand-drawn slopegraph: one roughened line per group connecting its values across an ordered x (commonly two categories, e.g. before/after), with a sketch point at each vertex. Emphasises rank changes and rates of change between a small number of timepoints (cf. Tufte's slopegraph).

Usage

GeomSketchSlope

```
geom_sketch_slope(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  roughness = 0.6,
  point_roughness = 0.4,
  bowing = 0.4,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

Arguments

mapping	Aesthetic mappings created by <code>ggplot2::aes()</code> . Requires x and y; map group to the series identity (and usually colour).
data	Data to display.
stat	Statistical transformation. Default "identity".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
roughness	Line roughness (0 = straight). Default 0.6.
point_roughness	Roughness of the vertex dots. Default 0.4.
bowing	Non-negative bowing multiplier. Default 0.4.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
df <- data.frame(
  time = rep(c("Before", "After"), each = 4),
  value = c(20, 35, 28, 42, 34, 51, 22, 47),
  who = rep(c("Alpha", "Bravo", "Charlie", "Delta"), 2)
)
ggplot(df, aes(time, value, group = who, colour = who)) +
  geom_sketch_slope(seed = 1L) +
  theme_sketch()
```

GeomSketchSmooth

Sketchy smoothed conditional mean

Description

Draws a hand-drawn fitted line with an optional roughened confidence band - the sketch analogue of [ggplot2::geom_smooth\(\)](#). The fit is computed by [ggplot2::stat_smooth\(\)](#) (method, formula, se, etc. pass through).

Usage

```
GeomSketchSmooth
```

```
geom_sketch_smooth(
```

```

mapping = NULL,
data = NULL,
stat = "smooth",
position = "identity",
...,
method = NULL,
formula = NULL,
se = TRUE,
roughness = 1,
bowing = 1,
n_passes = 2L,
seed = NULL,
fill_style = "hachure",
hachure_angle = 45,
hachure_gap = NULL,
fill_weight = 0.5,
na.rm = FALSE,
show.legend = NA,
inherit.aes = TRUE
)

```

Arguments

<code>mapping</code>	Set of aesthetic mappings created by <code>ggplot2::aes()</code> .
<code>data</code>	Data to display.
<code>stat</code>	Statistical transformation. Default "identity".
<code>position</code>	Position adjustment. Default "identity".
<code>...</code>	Other arguments passed on to the layer.
<code>method, formula, se</code>	Passed to <code>ggplot2::stat_smooth()</code> . <code>se = TRUE</code> draws the roughened confidence band.
<code>roughness</code>	Non-negative roughness (0 = straight). Default 1.
<code>bowing</code>	Non-negative bowing multiplier. Default 1.
<code>n_passes</code>	Number of stroke passes. Default 2.
<code>seed</code>	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
<code>fill_style</code>	Fill style for the confidence band. Default "hachure".
<code>hachure_angle</code>	Fill line angle in degrees. Default 45.
<code>hachure_gap</code>	Fill line gap in npc units (NULL = 6% of diagonal).
<code>fill_weight</code>	Stroke weight for fill lines. Default 0.5.
<code>na.rm</code>	Remove missing values silently? Default FALSE.
<code>show.legend</code>	Logical; include in legend?
<code>inherit.aes</code>	Override default aesthetics?

Value

A ggplot2 layer (a LayerInstance object) that can be added to a plot with `+`.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
ggplot(mtcars, aes(wt, mpg)) +
  geom_sketch_point(seed = 1L) +
  geom_sketch_smooth(method = "lm", formula = y ~ x, seed = 2L) +
  theme_sketch()
```

GeomSketchSpoke

Sketchy spoke geom

Description

Draws line segments from (x, y) at a given angle (radians) and radius - the sketch analogue of [ggplot2::geom_spoke\(\)](#). Handy for vector / flow fields. Internally reuses [GeomSketchSegment](#).

Usage

GeomSketchSpoke

```
geom_sketch_spoke(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
```

```

...,
radius = 1,
angle = 0,
roughness = NULL,
bowing = 1,
n_passes = 2L,
seed = NULL,
na.rm = FALSE,
show.legend = NA,
inherit.aes = TRUE
)

```

Arguments

mapping	Set of aesthetic mappings created by ggplot2::aes() .
data	Data to display.
stat	Statistical transformation. Default "identity".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
radius, angle	Optional fixed radius / angle (radians) used when not supplied as aesthetics.
roughness	Non-negative roughness (0 = straight). Default 1. For <code>geom_sketch_segment()</code> this is a mappable aesthetic (map it per segment with <code>aes(roughness =)</code> , rescaled by scale_roughness_continuous() ; for <code>geom_sketch_step()</code> it is a layer parameter (one path per group).
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#),

```

StatSketchRadar, StatSketchStream, StatSketchTreemap, StatSketchWaffle, StatSketchWaterfall,
annotate_sketch(), annotate_sketch_arrow(), annotate_sketch_callout(), annotate_sketch_highlight(),
geom_sketch_alluvial(), geom_sketch_arc_diagram(), geom_sketch_bin2d(), geom_sketch_bump(),
geom_sketch_chord(), geom_sketch_contour(), geom_sketch_count(), geom_sketch_dendrogram(),
geom_sketch_density(), geom_sketch_density2d(), geom_sketch_ecdf(), geom_sketch_function(),
geom_sketch_histogram(), geom_sketch_jitter(), geom_sketch_marimekko(), geom_sketch_mosaic(),
geom_sketch_parallel(), geom_sketch_qq(), geom_sketch_quantile(), geom_sketch_rose(),
geom_sketch_sunburst(), geom_sketch_text(), sketch_graph()

```

Examples

```

library(ggplot2)
df <- expand.grid(x = 1:5, y = 1:5)
df$angle <- runif(nrow(df), 0, 2 * pi)
df$radius <- 0.5
ggplot(df, aes(x, y)) +
  geom_sketch_spoke(aes(angle = angle, radius = radius), seed = 1L) +
  geom_sketch_point(seed = 2L) +
  theme_sketch()

```

GeomSketchTextRepel *Sketchy repelled text and labels*

Description

The hand-drawn answer to **ggrepel**: text (`geom_sketch_text_repel()`) or boxed labels (`geom_sketch_label_repel()`) that are nudged apart so they do not overlap one another or cover the data points, each joined back to its anchor by a roughened leader line when it has moved. Placement is solved at draw time by `repel_layout()` in device space, so it is even on any panel aspect.

Usage

GeomSketchTextRepel

GeomSketchLabelRepel

```

geom_sketch_text_repel(
  mapping = NULL,
  data = NULL,
  stat = "identity",
  position = "identity",
  ...,
  roughness = 1,
  bowing = 0.6,
  n_passes = 2L,
  seed = NULL,
  padding = 0.07,
  corner_radius = 0.3,

```

```

    box_padding = 0.1,
    point_padding = 0.05,
    min_segment = 0.06,
    max_iter = 2000L,
    family = NULL,
    na.rm = FALSE,
    show.legend = FALSE,
    inherit.aes = TRUE
  )

  geom_sketch_label_repel(
    mapping = NULL,
    data = NULL,
    stat = "identity",
    position = "identity",
    ...,
    roughness = 1,
    bowing = 0.6,
    n_passes = 2L,
    seed = NULL,
    padding = 0.09,
    corner_radius = 0.3,
    box_padding = 0.12,
    point_padding = 0.05,
    min_segment = 0.06,
    max_iter = 2000L,
    family = NULL,
    na.rm = FALSE,
    show.legend = FALSE,
    inherit.aes = TRUE
  )

```

Arguments

<code>mapping</code> , <code>data</code> , <code>stat</code> , <code>position</code> , <code>show.legend</code> , <code>inherit.aes</code>	Standard layer arguments. Requires <code>x</code> , <code>y</code> and <code>label</code> aesthetics.
<code>...</code>	Other arguments passed on to the layer.
<code>roughness</code> , <code>bowing</code> , <code>n_passes</code> , <code>seed</code>	Sketch parameters for the leader / box.
<code>padding</code>	Text clearance inside the box (and around bare text), inches.
<code>corner_radius</code>	Box corner rounding (label variant). Fraction of half-side; default 0.3.
<code>box_padding</code> , <code>point_padding</code>	Extra clearance kept between boxes and around the anchor points, in inches.
<code>min_segment</code>	Shortest leader drawn, in inches; below this no leader is shown (the label is close enough to its anchor).
<code>max_iter</code>	Repel solver iteration cap. Default 2000.
<code>family</code>	Font family for the text. Defaults to the theme's text family.

`na.rm` Drop missing values silently? Default FALSE.

Details

Unlike most ggsketch geoms the glyphs are not roughened (the sketch of text is a handwriting font, ADR-0007); the leader and the label box are. Like [geom_sketch_text\(\)](#), family defaults to the theme's text family.

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
df <- head(mtcars, 12)
df$name <- rownames(df)
ggplot(df, aes(wt, mpg, label = name)) +
  geom_sketch_point(seed = 1L) +
  geom_sketch_text_repel(family = "", seed = 1L) +
  theme_sketch()
```

GeomSketchViolin

Sketchy violin plot

Description

Draws a hand-drawn violin (mirrored kernel density) with a roughened outline and a hachure-style fill - the sketch analogue of [ggplot2::geom_violin\(\)](#). Uses [ggplot2::stat_ydensity\(\)](#).

Usage

```

GeomSketchViolin

geom_sketch_violin(
  mapping = NULL,
  data = NULL,
  stat = "ydensity",
  position = "dodge",
  ...,
  trim = TRUE,
  scale = "area",
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  fill_style = "hachure",
  hachure_angle = 45,
  hachure_gap = NULL,
  fill_weight = 0.5,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)

```

Arguments

mapping	Set of aesthetic mappings created by <code>ggplot2::aes()</code> .
data	Data to display.
stat	Statistical transformation. Default "identity".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
trim, scale	Passed to <code>ggplot2::stat_ydensity()</code> ; further density arguments (e.g. <code>bw</code> , <code>adjust</code> , <code>kernel</code>) pass through
roughness	Non-negative roughness (0 = straight). Default 1.
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
fill_style	One of "hachure", "cross_hatch", "zigzag", "zigzag_line", "scribble", "dots", "dashed", "stipple", "pencil_shade", or "solid". Default "hachure".
hachure_angle	Fill line angle in degrees. Default 45.
hachure_gap	Fill line gap in npc units (NULL = 7% of diagonal).
fill_weight	Stroke weight for fill lines. Default 0.5.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAbline](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
ggplot(mpg, aes(class, hwy)) +
  geom_sketch_violin(fill = "#A3D9A5", seed = 1L) +
  theme_sketch()
```

ggsketch_check_fonts *Check for optional handwriting fonts*

Description

Diagnoses whether a handwriting-style font is available on this device. The sketch *look* in ggsketch comes from geometry, not fonts, so this is purely cosmetic (ADR-0005).

Usage

```
ggsketch_check_fonts(fonts = sketch_font_candidates())
```

Arguments

fonts Character vector of font families to check. Defaults to the same candidate list [geom_sketch_text\(\)](#) resolves against - preferred handwriting faces first, then fonts preinstalled on Windows / macOS.

Value

Invisibly returns a logical vector (font available?); prints a formatted report.

See Also

Other sketch-theme: [CoordSketch](#), [CoordSketchPolar](#), [element_sketch_line\(\)](#), [ggsketch_save\(\)](#), [register_sketch_font\(\)](#), [scale_pressure_continuous\(\)](#), [scale_roughness_continuous\(\)](#), [scale_sketch](#), [scale_tone_continuous\(\)](#), [sketch_palette\(\)](#), [theme_sketch\(\)](#)

ggsketch_save

Save a sketch plot with a font-aware device

Description

A drop-in [ggplot2::ggsave\(\)](#) wrapper that picks a device which can see fonts registered with [register_sketch_font\(\)](#) / **systemfonts**:

Usage

```
ggsketch_save(
  filename,
  plot = ggplot2::last_plot(),
  width = 8,
  height = 5,
  dpi = 300,
  device = NULL,
  ...
)
```

Arguments

filename	File to write; the extension picks the device.
plot	Plot to save. Default ggplot2::last_plot() .
width, height	Size in inches. Defaults 8 x 5.
dpi	Resolution for raster formats. Default 300.
device	Override the chosen device (a function or name); passed through to ggplot2::ggsave() untouched when supplied.
...	Other arguments passed on to ggplot2::ggsave() .

Details

- .png / .jpeg / .jpg / .tiff – **ragg** when installed (falls back to the ggsave default with a hint).
- .svg – **svglite** when installed.
- .pdf – **cairo_pdf** (embeds registered fonts; the base pdf device does not).
- .eps / .ps – **cairo_ps**, with a warning: PostScript cannot embed handwriting faces reliably, so prefer PDF.

Value

Invisibly, filename.

See Also

Other sketch-theme: [CoordSketch](#), [CoordSketchPolar](#), [element_sketch_line\(\)](#), [ggsketch_check_fonts\(\)](#), [register_sketch_font\(\)](#), [scale_pressure_continuous\(\)](#), [scale_roughness_continuous\(\)](#), [scale_sketch](#), [scale_tone_continuous\(\)](#), [sketch_palette\(\)](#), [theme_sketch\(\)](#)

Examples

```
library(ggplot2)
p <- ggplot(mtcars, aes(wt, mpg)) + geom_sketch_point(seed = 1L) +
  theme_sketch()
out <- file.path(tempdir(), "sketch.png")
ggsketch_save(out, p)
unlink(out)
```

hachure_fill

Fill a polygon with hachure lines using the AET scan-line algorithm

Description

Fill a polygon with hachure lines using the AET scan-line algorithm

Usage

```
hachure_fill(
  px,
  py,
  hachure_gap = 0.1,
  hachure_angle = 45,
  roughness = 0,
  bowing = 0,
  seed = NULL
)
```

Arguments

px, py	Polygon vertex coordinates in inch space. May be open or closed.
hachure_gap	Spacing between fill lines (inches). Default 0.1.
hachure_angle	Fill angle (degrees). Default 45.
roughness	Roughness applied to each fill line. Default 0 (straight).
bowing	Bowing applied to each fill line. Default 0.
seed	Integer seed.

Value

A list of 2-column (x, y) matrices, one per fill line (roughened if roughness > 0, otherwise two-point straight segments).

See Also

Other sketch-core: [arrowhead\(\)](#), [curve_fill\(\)](#), [engrave_fill\(\)](#), [engrave_ladder\(\)](#), [hachure_fill_multi\(\)](#), [leader_path\(\)](#), [repel_layout\(\)](#), [rough_arc\(\)](#), [rough_bezier\(\)](#), [rough_ellipse\(\)](#), [roughen_polyline\(\)](#), [sketch_arrowheads\(\)](#), [sketch_fill\(\)](#), [sketch_fill_multi\(\)](#), [spray_scatter\(\)](#), [stroke_profile\(\)](#), [stroke_ribbon\(\)](#), [treemap_layout\(\)](#), [wash_bleed\(\)](#), [watercolor_wash\(\)](#), [watercolor_wash_multi\(\)](#)

hachure_fill_multi	<i>Fill a multi-ring region with hachure lines (hole-aware)</i>
--------------------	---

Description

Like [hachure_fill\(\)](#) but takes a list of rings sharing one Active Edge Table, so the even-odd scan-line parity excludes holes and skips the gaps between disjoint pieces automatically. This is what powers the filled contour / 2-D density band geoms, whose regions have holes.

Usage

```
hachure_fill_multi(
  rings,
  hachure_gap = 0.1,
  hachure_angle = 45,
  roughness = 0,
  bowing = 0,
  seed = NULL
)
```

Arguments

rings	A list of rings, each a list with numeric x and y vertex vectors (inch space). The first ring is typically the outer boundary and the rest holes, but any even-odd arrangement of outer pieces and holes is handled.
hachure_gap	Spacing between fill lines (inches). Default 0.1.
hachure_angle	Fill angle (degrees). Default 45.
roughness	Roughness applied to each fill line. Default 0 (straight).
bowing	Bowing applied to each fill line. Default 0.
seed	Integer seed.

Value

A list of 2-column (x, y) fill-line matrices (same structure as [hachure_fill\(\)](#)).

See Also

Other sketch-core: [arrowhead\(\)](#), [curve_fill\(\)](#), [engrave_fill\(\)](#), [engrave_ladder\(\)](#), [hachure_fill\(\)](#), [leader_path\(\)](#), [repel_layout\(\)](#), [rough_arc\(\)](#), [rough_bezier\(\)](#), [rough_ellipse\(\)](#), [roughen_polyline\(\)](#), [sketch_arrowheads\(\)](#), [sketch_fill\(\)](#), [sketch_fill_multi\(\)](#), [spray_scatter\(\)](#), [stroke_profile\(\)](#), [stroke_ribbon\(\)](#), [treemap_layout\(\)](#), [wash_bleed\(\)](#), [watercolor_wash\(\)](#), [watercolor_wash_multi\(\)](#)

leader_path

Route a leader line from a box edge to a target

Description

The un-roughened path a callout / annotation leader takes from its start (*sx*, *sy*) (a box edge) to the target (*xe*, *ye*): a "straight" line, an "elbow" (horizontal then vertical, flowchart style) or a "curved" quadratic-Bezier bow. Also reports the end tangent so the arrowhead can orient to it. Pure geometry; the grob roughens the result.

Usage

```
leader_path(sx, sy, xe, ye, style = "straight", curvature = 0.3)
```

Arguments

<i>sx</i> , <i>sy</i>	Leader start (inch space).
<i>xe</i> , <i>ye</i>	Target point (inch space).
<i>style</i>	One of "straight", "elbow", "curved".
<i>curvature</i>	Bow size for "curved" (signed). Default 0.3.

Value

A list with *x*, *y* (the path vertices) and *angle* (end tangent, in radians).

See Also

Other sketch-core: [arrowhead\(\)](#), [curve_fill\(\)](#), [engrave_fill\(\)](#), [engrave_ladder\(\)](#), [hachure_fill\(\)](#), [hachure_fill_multi\(\)](#), [repel_layout\(\)](#), [rough_arc\(\)](#), [rough_bezier\(\)](#), [rough_ellipse\(\)](#), [roughen_polyline\(\)](#), [sketch_arrowheads\(\)](#), [sketch_fill\(\)](#), [sketch_fill_multi\(\)](#), [spray_scatter\(\)](#), [stroke_profile\(\)](#), [stroke_ribbon\(\)](#), [treemap_layout\(\)](#), [wash_bleed\(\)](#), [watercolor_wash\(\)](#), [watercolor_wash_multi\(\)](#)

Examples

```
leader_path(0, 0, 1, 1, style = "elbow")
```

paper_grain	<i>Wash-feathering grain factor for a paper ground</i>
-------------	--

Description

How toothy a [sketch_papers\(\)](#) ground is, as a number a watercolour wash uses to feather its edges (the grain argument of [watercolor_wash\(\)](#)). Smooth grounds wick little; rough grounds (aged, kraft) wick a lot. Smooth, machine papers (notebook / graph / dotted) sit low; the textured grounds climb toward

1. theme_sketch(paper =) reads this so washes drawn on a paper pick up its tooth automatically.

Usage

```
paper_grain(kind)
```

Arguments

kind A value from [sketch_papers\(\)](#).

Value

A numeric grain factor in $[0, 1]$ (0 for "none").

See Also

Other sketch-paper: [element_sketch_paper\(\)](#), [paper_primitives\(\)](#), [paper_spec\(\)](#), [sketch_papers\(\)](#)

Examples

```
paper_grain("kraft")
paper_grain("graph")
```

paper_primitives	<i>Build the vector primitives for a paper ground</i>
------------------	---

Description

Turns a [paper_spec\(\)](#) into draw-ready primitives in npc coordinates, spaced for the given physical panel size. The grob layer ([element_sketch_paper\(\)](#)) renders the result; this function stays free of any grid dependency.

Usage

```
paper_primitives(kind, width_in = 6, height_in = 4, seed = NULL)
```

Arguments

kind A value from [sketch_papers\(\)](#).
width_in, height_in Panel size in inches (sets the ruling pitch).
seed Integer seed (for aged blotches).

Value

A list with ground (fill colour) and zero or more of segs (a list of homogeneous line groups, each `list(x0, y0, x1, y1, colour, lwd)`), dots (`list(x, y, r_in, colour)`), and blotches (a list of `list(x, y, fill)` polygons), or NULL for "none".

See Also

Other sketch-paper: [element_sketch_paper\(\)](#), [paper_grain\(\)](#), [paper_spec\(\)](#), [sketch_papers\(\)](#)

paper_spec	<i>Palette + layout spec for a paper ground</i>
------------	---

Description

Pure data: the ground colour, a suggested ink colour, whether the ground is dark (so text should flip light), and the ruling/grid/dot layout.

Usage

```
paper_spec(kind)
```

Arguments

kind A value from [sketch_papers\(\)](#).

Value

A named list describing the paper, or NULL for "none".

See Also

Other sketch-paper: [element_sketch_paper\(\)](#), [paper_grain\(\)](#), [paper_primitives\(\)](#), [sketch_papers\(\)](#)

register_sketch_font *Register a handwriting font for reproducible sketch text*

Description

Registers a font file under a family name with **systemfonts** so that [geom_sketch_text\(\)](#), [theme_sketch\(\)](#) (`base_family = "auto"`), and the font resolver can find it on font-aware devices (ragg, svglite, cairo) without installing the font system-wide. Call it once per session (e.g. in a script or `.Rprofile`); ship the `.ttf/.otf` alongside your project for fully reproducible output.

Usage

```
register_sketch_font(
  family,
  plain,
  bold = plain,
  italic = plain,
  bolditalic = plain,
  ...
)
```

Arguments

<code>family</code>	Family name to register the font under (e.g. "Caveat"). This is the name you then pass to <code>family =</code> or <code>base_family =</code> .
<code>plain</code>	Path to the regular/plain font file (<code>.ttf</code> or <code>.otf</code>).
<code>bold, italic, bolditalic</code>	Optional paths to the bold/italic faces; default to plain.
<code>...</code>	Passed to systemfonts::register_font() .

Value

Invisibly, the registered family name.

See Also

Other sketch-theme: [CoordSketch](#), [CoordSketchPolar](#), [element_sketch_line\(\)](#), [ggsketch_check_fonts\(\)](#), [ggsketch_save\(\)](#), [scale_pressure_continuous\(\)](#), [scale_roughness_continuous\(\)](#), [scale_sketch](#), [scale_tone_continuous\(\)](#), [sketch_palette\(\)](#), [theme_sketch\(\)](#)

Examples

```
# Register any font file under a family name you choose. Here we reuse a font
# already on the system; in practice point `plain` at a handwriting .ttf/.otf
# (e.g. Caveat from Google Fonts).
f <- systemfonts::system_fonts()[1]
register_sketch_font("MySketchFont", f)
```

hr/>
repel_layout

Repel overlapping label boxes away from each other and their anchors

Description

A small physical solver behind `geom_sketch_text_repel()` / `geom_sketch_label_repel()`. Each label starts near its anchor and is pushed by three forces, iterated to rest: boxes that overlap shove each other apart along their axis of least penetration (preferring an axis with room left inside the bounds, so pairs pressed into a panel corner escape along the edge instead of staying stuck); a box covering any anchor point slides off it; and a weak spring pulls each box back toward its own anchor so labels stay close to what they name. Positions are clamped to `xlim` / `ylim`.

Usage

```
repel_layout(
  ax,
  ay,
  w,
  h,
  xlim = c(-Inf, Inf),
  ylim = c(-Inf, Inf),
  box_padding = 0.1,
  point_padding = 0.05,
  max_iter = 2000L,
  seed = NULL
)
```

Arguments

<code>ax, ay</code>	Anchor points (one per label), in a single isotropic space (e.g. device inches).
<code>w, h</code>	Label box width and height (same units), recycled to the anchors.
<code>xlim, ylim</code>	Length-2 bounds the box centres are kept within.
<code>box_padding, point_padding</code>	Extra clearance around boxes and around anchor points, in the same units.
<code>max_iter</code>	Maximum solver iterations. Default 2000.
<code>seed</code>	Integer seed (for the tiny start jitter that separates labels sharing an anchor).

Value

A list with `x`, `y` (the resolved box centres) and `iter` (iterations actually run).

See Also

Other sketch-core: `arrowhead()`, `curve_fill()`, `engrave_fill()`, `engrave_ladder()`, `hachure_fill()`, `hachure_fill_multi()`, `leader_path()`, `rough_arc()`, `rough_bezier()`, `rough_ellipse()`, `roughen_polyline()`, `sketch_arrowheads()`, `sketch_fill()`, `sketch_fill_multi()`, `spray_scatter()`,

```
stroke_profile(),stroke_ribbon(),treemap_layout(),wash_bleed(),watercolor_wash(),
watercolor_wash_multi()
```

Examples

```
repel_layout(c(0, 0.1, 0.1), c(0, 0, 0.05), w = 0.4, h = 0.2, seed = 1L)
```

rough_arc	<i>Roughen an elliptical arc into one or more sketch stroke paths</i>
-----------	---

Description

The open-arc sibling of [rough_ellipse\(\)](#). Samples the arc by arc length, displaces each point slightly, and returns `n_passes` overlaid strokes for the double-stroke hand-drawn look. Unlike a full ellipse the path is left open (the ends are not joined).

Usage

```
rough_arc(
  cx,
  cy,
  rx,
  ry,
  start,
  end,
  roughness = 1,
  n_passes = 2L,
  seed = NULL
)
```

Arguments

<code>cx, cy</code>	Centre coordinates in inch space.
<code>rx, ry</code>	Semi-axis radii in inches.
<code>start, end</code>	Start/end angle in radians (counter-clockwise from the positive x-axis; end may be less than start).
<code>roughness</code>	Non-negative roughness parameter. Default 1.
<code>n_passes</code>	Number of stroke overlays. Default 2.
<code>seed</code>	Integer seed for reproducibility.

Value

List of `n_passes` 2-column (x, y) matrices of stroke points.

See Also

Other sketch-core: [arrowhead\(\)](#), [curve_fill\(\)](#), [engrave_fill\(\)](#), [engrave_ladder\(\)](#), [hachure_fill\(\)](#), [hachure_fill_multi\(\)](#), [leader_path\(\)](#), [repel_layout\(\)](#), [rough_bezier\(\)](#), [rough_ellipse\(\)](#), [roughen_polyline\(\)](#), [sketch_arrowheads\(\)](#), [sketch_fill\(\)](#), [sketch_fill_multi\(\)](#), [spray_scatter\(\)](#), [stroke_profile\(\)](#), [stroke_ribbon\(\)](#), [treemap_layout\(\)](#), [wash_bleed\(\)](#), [watercolor_wash\(\)](#), [watercolor_wash_multi\(\)](#)

rough_bezier

*Roughen a cubic Bezier curve***Description**

Applies roughness to all four control points, then flattens and reduces the curve. Returns n_passes roughened polyline paths.

Usage

```
rough_bezier(
  P0,
  P1,
  P2,
  P3,
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  tol = NULL,
  rdp_eps = NULL
)
```

Arguments

P0, P1, P2, P3	Control points as length-2 numeric vectors c(x, y) in inch space.
roughness	Non-negative roughness radius (inches). Default 1.
bowing	Bowing multiplier (currently not applied to Bezier control points separately; roughness serves the role). Default 1.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed for reproducibility.
tol	Flatness tolerance. Default $\max(\text{roughness} * 0.01, 1e-4)$.
rdp_eps	RDP epsilon. Default $\max(\text{roughness} * 0.005, 1e-5)$.

Value

List of n_passes 2-column (x, y) matrices.

See Also

Other sketch-core: [arrowhead\(\)](#), [curve_fill\(\)](#), [engrave_fill\(\)](#), [engrave_ladder\(\)](#), [hachure_fill\(\)](#), [hachure_fill_multi\(\)](#), [leader_path\(\)](#), [repel_layout\(\)](#), [rough_arc\(\)](#), [rough_ellipse\(\)](#), [roughen_polyline\(\)](#), [sketch_arrowheads\(\)](#), [sketch_fill\(\)](#), [sketch_fill_multi\(\)](#), [spray_scatter\(\)](#), [stroke_profile\(\)](#), [stroke_ribbon\(\)](#), [treemap_layout\(\)](#), [wash_bleed\(\)](#), [watercolor_wash\(\)](#), [watercolor_wash_multi\(\)](#)

rough_ellipse

Roughen an ellipse into one or more sketch stroke paths

Description

Generates points around the ellipse, roughens them, and connects them with a smooth path (sampled cubic Bezier between consecutive point-pairs). Deliberately leaves a small gap at the close point ("ends don't meet" hand-drawn effect).

Usage

```
rough_ellipse(cx, cy, rx, ry, roughness = 1, n_passes = 2L, seed = NULL)
```

Arguments

cx, cy	Centre coordinates in inch space.
rx, ry	Semi-axis radii in inches (rx = horizontal, ry = vertical).
roughness	Non-negative roughness parameter. Default 1.
n_passes	Number of stroke overlays. Default 2.
seed	Integer seed for reproducibility.

Value

List of n_passes 2-column (x, y) matrices of stroke points.

See Also

Other sketch-core: [arrowhead\(\)](#), [curve_fill\(\)](#), [engrave_fill\(\)](#), [engrave_ladder\(\)](#), [hachure_fill\(\)](#), [hachure_fill_multi\(\)](#), [leader_path\(\)](#), [repel_layout\(\)](#), [rough_arc\(\)](#), [rough_bezier\(\)](#), [roughen_polyline\(\)](#), [sketch_arrowheads\(\)](#), [sketch_fill\(\)](#), [sketch_fill_multi\(\)](#), [spray_scatter\(\)](#), [stroke_profile\(\)](#), [stroke_ribbon\(\)](#), [treemap_layout\(\)](#), [wash_bleed\(\)](#), [watercolor_wash\(\)](#), [watercolor_wash_multi\(\)](#)

roughen_polyline	<i>Roughen a polyline (multiple connected segments)</i>
------------------	---

Description

Converts a multi-vertex polyline into `n_passes` roughened stroke paths. Each path is a matrix with columns `x` and `y` (inch coordinates). Uses a seeded local RNG so the user's `.Random.seed` is never mutated (T-CORE-06).

Usage

```
roughen_polyline(x, y, roughness = 1, bowing = 1, n_passes = 2L, seed = NULL)
```

Arguments

<code>x, y</code>	Numeric vectors of polyline vertices in inch space. Must have the same length ≥ 2 .
<code>roughness</code>	Non-negative roughness radius (inches at scale). Default 1.
<code>bowing</code>	Non-negative bowing multiplier. Default 1.
<code>n_passes</code>	Positive integer number of stroke passes (default 2).
<code>seed</code>	Integer seed for reproducibility (ADR-0004).

Value

A list of `n_passes` matrices (columns `x, y`), one per pass.

See Also

Other sketch-core: [arrowhead\(\)](#), [curve_fill\(\)](#), [engrave_fill\(\)](#), [engrave_ladder\(\)](#), [hachure_fill\(\)](#), [hachure_fill_multi\(\)](#), [leader_path\(\)](#), [repel_layout\(\)](#), [rough_arc\(\)](#), [rough_bezier\(\)](#), [rough_ellipse\(\)](#), [sketch_arrowheads\(\)](#), [sketch_fill\(\)](#), [sketch_fill_multi\(\)](#), [spray_scatter\(\)](#), [stroke_profile\(\)](#), [stroke_ribbon\(\)](#), [treemap_layout\(\)](#), [wash_bleed\(\)](#), [watercolor_wash\(\)](#), [watercolor_wash_multi\(\)](#)

scale_medium_discrete	<i>Discrete scale for the drawing medium aesthetic</i>
-----------------------	--

Description

Maps a discrete variable to drawing media (see [sketch_media\(\)](#)) when it is mapped with `aes(medium = )` on a path-like sketch geom ([geom_sketch_line\(\)](#), [geom_sketch_path\(\)](#), [geom_sketch_segment\(\)](#), [geom_sketch_step\(\)](#)). Because of its name, `ggplot2` picks it up automatically; you only need to call it directly to choose which media to use or to set legend options.

Usage

```
scale_medium_discrete(..., media = NULL)
```

Arguments

`...` Passed to `ggplot2::discrete_scale()` (e.g. name, labels, guide).

`media` Character vector of media to cycle through, each one of `sketch_media()`. Defaults to every medium except "pen" (so mapped levels look distinct); recycled with a warning if there are more levels than media.

Details

Each group is drawn in a single medium, so map medium to the same variable you group by (often colour or group).

Value

A ggplot2 scale object.

See Also

Other sketch-media: `sketch_media()`

Examples

```
library(ggplot2)
df <- data.frame(
  x = rep(1:10, 3),
  y = c(1:10, (1:10) + 4, (1:10) + 8),
  g = rep(c("a", "b", "c"), each = 10)
)
ggplot(df, aes(x, y, group = g, medium = g, colour = g)) +
  geom_sketch_line(linewidth = 1, seed = 1L) +
  scale_medium_discrete() +
  theme_sketch()
```

scale_pressure_continuous

Continuous scale for the sketch pressure aesthetic

Description

`geom_sketch_line()` and `geom_sketch_path()` let you map a variable to pressure (`aes(pressure = z)`) so the stroke swells and thins **along** the line, like a real pen pressed harder in places. This scale rescales that variable's observed range to a band of width multipliers, just as `scale_size()` rescales to a size range. It is applied automatically whenever pressure is mapped to a continuous variable, so you only call it directly to change range. To use values as raw width multipliers with no rescaling, wrap them in `base::I()` (`aes(pressure = I(z))`).

Usage

```
scale_pressure_continuous(..., range = c(0.2, 1.6), guide = "none")  
  
scale_pressure(..., range = c(0.2, 1.6), guide = "none")
```

Arguments

...	Other arguments passed to <code>ggplot2::continuous_scale()</code> .
range	Output width-multiplier range. Default <code>c(0.2, 1.6)</code> : the lightest pressure draws the stroke at 0.2x its base width, the heaviest at 1.6x.
guide	Legend guide. Defaults to "none" because the legend keys do not reflect pressure; set to "legend" to show one anyway.

Details

Mapping pressure renders the line through the variable-width `stroke_ribbon()` engine even under the default `medium = "pen"`, and combines with a non-pen medium (the medium's own width profile is multiplied by the mapped pressure).

Value

A ggplot2 scale object.

See Also

Other sketch-theme: `CoordSketch`, `CoordSketchPolar`, `element_sketch_line()`, `ggsketch_check_fonts()`, `ggsketch_save()`, `register_sketch_font()`, `scale_roughness_continuous()`, `scale_sketch`, `scale_tone_continuous()`, `sketch_palette()`, `theme_sketch()`

Examples

```
library(ggplot2)  
  
# A line whose width tracks a variable, rescaled to c(0.2, 1.6) automatically.  
ggplot(economics[1:120, ], aes(date, unemploy, pressure = unemploy)) +  
  geom_sketch_line(linewidth = 1, seed = 1L)  
  
# Widen the band for a more dramatic swell.  
ggplot(economics[1:120, ], aes(date, unemploy, pressure = unemploy)) +  
  geom_sketch_line(linewidth = 1, seed = 1L) +  
  scale_pressure_continuous(range = c(0.05, 2.5))
```

scale_roughness_continuous

Continuous scale for the sketch roughness aesthetic

Description

`geom_sketch_point()` lets you map a variable to roughness (`aes(roughness = z)`). This scale rescales that variable's observed range to a legible band of roughness values, just as `scale_size()` rescales to a size range. It is applied automatically whenever roughness is mapped to a continuous variable, so you only call it directly to change range. To use values as raw roughness with no rescaling, wrap them in `base::I()` (`aes(roughness = I(z))`).

Usage

```
scale_roughness_continuous(..., range = c(0.01, 0.75), guide = "none")
```

```
scale_roughness(..., range = c(0.01, 0.75), guide = "none")
```

Arguments

<code>...</code>	Other arguments passed to <code>ggplot2::continuous_scale()</code> .
<code>range</code>	Output roughness range. Default <code>c(0.01, 0.75)</code> : 0.01 is effectively clean and 0.75 is clearly hand-drawn without becoming noise. Values above roughly 1 start to look scribbled.
<code>guide</code>	Legend guide. Defaults to "none" because the legend keys do not reflect roughness; set to "legend" to show one anyway.

Value

A ggplot2 scale object.

See Also

Other sketch-theme: `CoordSketch`, `CoordSketchPolar`, `element_sketch_line()`, `ggsketch_check_fonts()`, `ggsketch_save()`, `register_sketch_font()`, `scale_pressure_continuous()`, `scale_sketch`, `scale_tone_continuous()`, `sketch_palette()`, `theme_sketch()`

Examples

```
library(ggplot2)

# Mapped roughness is rescaled to c(0.01, 0.75) automatically.
ggplot(mtcars, aes(wt, mpg, roughness = hp)) +
  geom_sketch_point(size = 3, seed = 1L)

# Widen the band so the wobble difference is more dramatic.
ggplot(mtcars, aes(wt, mpg, roughness = hp)) +
  geom_sketch_point(size = 3, seed = 1L) +
  scale_roughness_continuous(range = c(0, 1.2))
```

scale_sketch	<i>Sketch colour and fill scales</i>
--------------	--------------------------------------

Description

Discrete scales (`scale_colour_sketch()`, `scale_fill_sketch()`) use `sketch_palette()`; the continuous variants (`*_sketch_c()`) use a paper-to-ink blue gradient. They pair with `theme_sketch()` and the sketch geoms but work with any ggplot2 layer.

Usage

```
scale_colour_sketch(..., aesthetics = "colour", interpolate = TRUE)

scale_color_sketch(..., aesthetics = "colour", interpolate = TRUE)

scale_fill_sketch(..., aesthetics = "fill", interpolate = TRUE)

scale_colour_sketch_c(..., aesthetics = "colour")

scale_color_sketch_c(..., aesthetics = "colour")

scale_fill_sketch_c(..., aesthetics = "fill")
```

Arguments

<code>...</code>	Passed to <code>ggplot2::discrete_scale()</code> (discrete) or <code>ggplot2::scale_colour_gradientn()</code> (continuous).
<code>aesthetics</code>	Character vector of aesthetics this scale works with.
<code>interpolate</code>	Discrete scales only. When there are more than eight levels, interpolate the eight-colour <code>sketch_palette()</code> into one colour per level (the default) instead of recycling.

Value

A ggplot2 scale object.

See Also

Other sketch-theme: `CoordSketch`, `CoordSketchPolar`, `element_sketch_line()`, `ggsketch_check_fonts()`, `ggsketch_save()`, `register_sketch_font()`, `scale_pressure_continuous()`, `scale_roughness_continuous()`, `scale_tone_continuous()`, `sketch_palette()`, `theme_sketch()`

Examples

```
library(ggplot2)
ggplot(mpg, aes(displ, hwy, colour = drv)) +
  geom_sketch_point(seed = 1L) +
```

```
scale_colour_sketch() +
theme_sketch()
```

scale_tone_continuous *Continuous scale for the engraving tone aesthetic*

Description

[geom_sketch_shade\(\)](#) shades each region by a tone aesthetic in $[0, 1]$ (0 = blank paper, 1 = densest cross-hatch). Mapping a raw variable to tone (`aes(tone = z)`) rescales its observed range to a legible tone band with this scale, just as `scale_size()` rescales to a size range. It is applied automatically whenever tone is mapped to a continuous variable, so you only call it directly to change range (or to reverse it by giving a decreasing range). To use values as raw tone with no rescaling, wrap them in [base::I\(\)](#) (`aes(tone = I(z))`).

Usage

```
scale_tone_continuous(..., range = c(0.15, 0.95), guide = "none")
```

```
scale_engrave(..., range = c(0.15, 0.95), guide = "none")
```

Arguments

<code>...</code>	Other arguments passed to ggplot2::continuous_scale() .
<code>range</code>	Output tone range, within $[0, 1]$. Default <code>c(0.15, 0.95)</code> : 0.15 is the faintest hatch that still draws (the engraving ladder leaves tone below 0.12 as blank paper, so a lower floor would erase the lightest region entirely) and 0.95 is near-solid black. Give a decreasing range (e.g. <code>c(0.95, 0.15)</code>) to invert the mapping.
<code>guide</code>	Legend guide. Defaults to "none" because the legend keys do not reflect tone; set to "legend" to show one anyway.

Value

A ggplot2 scale object.

See Also

Other sketch-theme: [CoordSketch](#), [CoordSketchPolar](#), [element_sketch_line\(\)](#), [ggsketch_check_fonts\(\)](#), [ggsketch_save\(\)](#), [register_sketch_font\(\)](#), [scale_pressure_continuous\(\)](#), [scale_roughness_continuous\(\)](#), [scale_sketch](#), [sketch_palette\(\)](#), [theme_sketch\(\)](#)

Examples

```
library(ggplot2)

hex <- data.frame(
  x = cos(seq(0, 2 * pi, length.out = 7))[-7],
  y = sin(seq(0, 2 * pi, length.out = 7))[-7]
)
regions <- do.call(rbind, lapply(1:3, function(k) {
  transform(hex, x = x + (k - 1) * 2.3, g = k, val = k)
}))

# `val` is rescaled to the default tone band c(0.15, 0.95) automatically.
ggplot(regions, aes(x, y, group = g)) +
  geom_sketch_shade(aes(tone = val), seed = 1L) +
  coord_equal()

# Push the darkest region all the way to solid black.
ggplot(regions, aes(x, y, group = g)) +
  geom_sketch_shade(aes(tone = val), seed = 1L) +
  scale_tone_continuous(range = c(0.15, 1)) +
  coord_equal()
```

sketch_arrow_grob	Create a sketchy arrow grob
-------------------	-----------------------------

Description

Draws one or more hand-drawn arrows. The shaft is a quadratic Bezier (so it can curve) and the arrowhead is roughened and oriented to the curve's end tangent, both assembled in device inches so the head stays crisp and correctly angled on any panel shape. The arrowhead size can adapt to the shaft length.

Usage

```
sketch_arrow_grob(
  x0,
  y0,
  cx,
  cy,
  x1,
  y1,
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  arrow_length = NULL,
  arrow_angle = 25,
  arrow_type = "open",
```

```

    arrow_head = NULL,
    ends = "last",
    gp = gpar(),
    name = NULL,
    vp = NULL
)

```

Arguments

<code>x0, y0</code>	Shaft start in npc [0,1] (vectors, one per arrow).
<code>cx, cy</code>	Quadratic-Bezier control point in npc (vectors). For a straight arrow pass the chord midpoint.
<code>x1, y1</code>	Shaft end / arrow tip in npc (vectors).
<code>roughness, bowing, n_passes, seed</code>	Sketch parameters.
<code>arrow_length</code>	Arrowhead length in inches. NULL (default) adapts it to the shaft length.
<code>arrow_angle</code>	Half-angle of the arrowhead in degrees. Default 25.
<code>arrow_type</code>	"open" (default) draws a two-stroke V; "closed" draws a filled rough triangle. Superseded by <code>arrow_head</code> ; kept for back-compat.
<code>arrow_head</code>	Head style, one of sketch_arrowheads() ("triangle_open", "triangle_filled", "barb", "fishtail", "dot", "bar"). NULL (default) derives it from <code>arrow_type</code> .
<code>ends</code>	Which end(s) carry a head: "last" (default), "first", or "both".
<code>gp</code>	A <code>grid::gpar()</code> for the strokes (per-arrow col recycled).
<code>name, vp</code>	Passed to <code>grid::gTree()</code> .

Value

A `SketchArrowGrob` grob subclass.

See Also

Other grob-layer: [sketch_band_grob\(\)](#), [sketch_callout_grob\(\)](#), [sketch_dotplot_grob\(\)](#), [sketch_ellipse_grob\(\)](#), [sketch_engrave_grob\(\)](#), [sketch_path_grob\(\)](#), [sketch_polygon_grob\(\)](#), [sketch_repel_grob\(\)](#), [sketch_spray_grob\(\)](#), [sketch_stroke_grob\(\)](#), [sketch_wedge_grob\(\)](#)

sketch_arrowheads	<i>The available arrowhead styles</i>
-------------------	---------------------------------------

Description

Valid values for the head argument of [geom_sketch_arrow\(\)](#), [annotate_sketch_arrow\(\)](#), [geom_sketch_callout\(\)](#) and the style of [arrowhead\(\)](#).

Usage

```
sketch_arrowheads()
```

Value

A character vector of arrowhead names.

See Also

Other sketch-core: [arrowhead\(\)](#), [curve_fill\(\)](#), [engrave_fill\(\)](#), [engrave_ladder\(\)](#), [hachure_fill\(\)](#), [hachure_fill_multi\(\)](#), [leader_path\(\)](#), [repel_layout\(\)](#), [rough_arc\(\)](#), [rough_bezier\(\)](#), [rough_ellipse\(\)](#), [roughen_polyline\(\)](#), [sketch_fill\(\)](#), [sketch_fill_multi\(\)](#), [spray_scatter\(\)](#), [stroke_profile\(\)](#), [stroke_ribbon\(\)](#), [treemap_layout\(\)](#), [wash_bleed\(\)](#), [watercolor_wash\(\)](#), [watercolor_wash_multi\(\)](#)

Examples

```
sketch_arrowheads()
```

sketch_band_grob

Create a sketchy filled-band grob (hole-aware region)

Description

Draws one filled region made of several rings (outer pieces and holes) - the building block for filled contour / 2-D density bands. The whole region is filled with a single hole-aware scan-line (so holes stay empty), and every ring is stroked with a roughened outline. A "solid" fill paints the rings with an even-odd rule.

Usage

```
sketch_band_grob(
  rings,
  roughness = 0.7,
  bowing = 0.5,
  n_passes = 2L,
  seed = NULL,
  fill_style = "solid",
  hachure_angle = 45,
  hachure_gap = 0.05,
  fill_weight = 0.5,
  fill_col = NA,
  outline_gp = gpar(),
  name = NULL,
  vp = NULL
)
```

Arguments

rings	A list of rings, each a list with npc [0,1] x and y vertex vectors. The even-odd arrangement of outer pieces and holes is honoured.
roughness, bowing, n_passes, seed	Sketch parameters for the outlines.
fill_style	"solid" (default), "hachure", "cross_hatch", or "watercolor" (hole-aware translucent washes).
hachure_angle, hachure_gap, fill_weight	Fill parameters (hachure_gap is an npc fraction).
fill_col	Fill colour (NA leaves the region empty).
outline_gp	gpar() for the roughened ring outlines.
name, vp	Passed to grid::gTree().

Value

A SketchBandGrob grob subclass.

See Also

Other grob-layer: [sketch_arrow_grob\(\)](#), [sketch_callout_grob\(\)](#), [sketch_dotplot_grob\(\)](#), [sketch_ellipse_grob\(\)](#), [sketch_engrave_grob\(\)](#), [sketch_path_grob\(\)](#), [sketch_polygon_grob\(\)](#), [sketch_repel_grob\(\)](#), [sketch_spray_grob\(\)](#), [sketch_stroke_grob\(\)](#), [sketch_wedge_grob\(\)](#)

sketch_callout_grob	<i>Create a sketchy callout grob (boxed label + leader arrow)</i>
---------------------	---

Description

Draws a handwriting label inside a roughened rounded box and a leader arrow from the box to a target point. The box auto-sizes to the label at draw time (device-space text metrics) and the leader leaves from the box edge nearest the target.

Usage

```
sketch_callout_grob(
  x,
  y,
  xend,
  yend,
  label,
  padding = 0.06,
  corner_radius = 0.3,
  roughness = 1,
  bowing = 0.6,
  n_passes = 2L,
```

```

    seed = NULL,
    arrow_length = NULL,
    arrow_angle = 25,
    arrow_head = NULL,
    leader = "straight",
    curvature = 0.3,
    text_gp = gpar(),
    box_gp = gpar(),
    arrow_gp = gpar(),
    name = NULL,
    vp = NULL
  )

```

Arguments

<code>x, y</code>	Box centre in npc [0,1] (scalars).
<code>xend, yend</code>	Target point in npc the leader points at (scalars). Pass NA for both to draw a boxed label with no leader.
<code>label</code>	Label text.
<code>padding</code>	Box padding around the text, in inches. Default 0.06.
<code>corner_radius</code>	Box corner rounding (fraction of half-side). Default 0.3.
<code>roughness, bowing, n_passes, seed</code>	Sketch parameters.
<code>arrow_length, arrow_angle</code>	Leader arrowhead size (see sketch_arrow_grob()).
<code>arrow_head</code>	Leader head style (see sketch_arrowheads()); NULL = the open V.
<code>leader</code>	Leader routing: "straight" (default), "elbow" (horizontal then vertical) or "curved" (a bowed Bezier).
<code>curvature</code>	Bow size when leader = "curved". Default 0.3.
<code>text_gp, box_gp, arrow_gp</code>	<code>gpar()</code> s for the label, the box (outline; its fill paints the box), and the leader.
<code>name, vp</code>	Passed to <code>grid::gTree()</code> .

Value

A SketchCalloutGrob grob subclass.

See Also

Other grob-layer: [sketch_arrow_grob\(\)](#), [sketch_band_grob\(\)](#), [sketch_dotplot_grob\(\)](#), [sketch_ellipse_grob\(\)](#), [sketch_engrave_grob\(\)](#), [sketch_path_grob\(\)](#), [sketch_polygon_grob\(\)](#), [sketch_repel_grob\(\)](#), [sketch_spray_grob\(\)](#), [sketch_stroke_grob\(\)](#), [sketch_wedge_grob\(\)](#)

sketch_dotplot_grob *Create a sketchy dot-plot grob (stacked circular dots)*

Description

Draws stacked roughened dots for a Wilkinson-style dot plot. The dot diameter is taken from `dia` (an `npc-x` fraction = the bin width) and converted to device inches at draw time, so every dot is a true circle whatever the panel aspect, and stacks are built upward from baseline by that diameter.

Usage

```
sketch_dotplot_grob(
  x,
  stackpos,
  dia,
  baseline = 0,
  stackratio = 1,
  roughness = 0.5,
  n_passes = 2L,
  seed = NULL,
  fill_gp = gpar(),
  outline_gp = gpar(),
  name = NULL,
  vp = NULL
)
```

Arguments

<code>x</code>	Npc [0,1] x of each dot (its bin centre), one per dot.
<code>stackpos</code>	Integer stack position of each dot within its bin (1 = first).
<code>dia</code>	Dot diameter as an <code>npc-x</code> fraction (scalar; the bin width).
<code>baseline</code>	Npc y the stacks grow from. Default 0.
<code>stackratio</code>	Vertical spacing between stacked dots, as a fraction of the diameter. Default 1.
<code>roughness, n_passes, seed</code>	Sketch parameters.
<code>fill_gp</code>	<code>gpar()</code> for the solid dot fill (per-dot col recycled; NA leaves dots unfilled).
<code>outline_gp</code>	<code>gpar()</code> for the roughened dot outline (per-dot col).
<code>name, vp</code>	Passed to <code>grid::gTree()</code> .

Value

A `SketchDotplotGrob` grob subclass.

See Also

Other grob-layer: [sketch_arrow_grob\(\)](#), [sketch_band_grob\(\)](#), [sketch_callout_grob\(\)](#), [sketch_ellipse_grob\(\)](#), [sketch_engrave_grob\(\)](#), [sketch_path_grob\(\)](#), [sketch_polygon_grob\(\)](#), [sketch_repel_grob\(\)](#), [sketch_spray_grob\(\)](#), [sketch_stroke_grob\(\)](#), [sketch_wedge_grob\(\)](#)

sketch_ellipse_grob	Create a sketchy ellipse / circle grob
---------------------	--

Description

Draws one or more roughened ellipses whose centres are in npc [0,1] and whose radii are npc fractions of the viewport (converted to device inches in `makeContent()`), so a "circle" in data units may appear elliptical on a non-square panel - matching `ggplot2`'s coordinate semantics).

Usage

```
sketch_ellipse_grob(
  x,
  y,
  rx,
  ry,
  roughness = 1,
  n_passes = 2L,
  seed = NULL,
  fill_style = NULL,
  hatchure_angle = 45,
  hatchure_gap = 0.07,
  fill_weight = 0.5,
  fill_roughness = NULL,
  fill_seed = NULL,
  fill_gp = gpar(),
  outline_gp = gpar(),
  name = NULL,
  vp = NULL
)
```

Arguments

x, y	Numeric npc centre coordinates (vectors).
rx, ry	Numeric npc radii (vectors, recycled to x).
roughness, n_passes, seed	Sketch parameters.
fill_style, hatchure_angle, hatchure_gap, fill_weight	Fill parameters; set <code>fill_style = NULL</code> or "solid" for outline only. "watercolor" paints translucent stacked washes.

fill_roughness	Roughness of the fill strokes. NULL (default) ties it to the outline as roughness * 0.4; set a number to control the fill texture independently of the outline.
fill_seed	Seed for the fill strokes. NULL (default) derives it from seed; set an integer to vary the fill pattern without moving the outline.
fill_gp	gpar() for the fill lines.
outline_gp	gpar() for the rough outline stroke.
name, vp	Passed to grid::gTree().

Value

A SketchEllipseGrob grob subclass.

See Also

Other grob-layer: [sketch_arrow_grob\(\)](#), [sketch_band_grob\(\)](#), [sketch_callout_grob\(\)](#), [sketch_dotplot_grob\(\)](#), [sketch_engrave_grob\(\)](#), [sketch_path_grob\(\)](#), [sketch_polygon_grob\(\)](#), [sketch_repel_grob\(\)](#), [sketch_spray_grob\(\)](#), [sketch_stroke_grob\(\)](#), [sketch_wedge_grob\(\)](#)

sketch_engrave_grob	<i>Create a sketchy engraving grob (tonal cross-hatch by line density)</i>
---------------------	--

Description

Fills a region with [engrave_fill\(\)](#): a ladder of hatch layers whose accumulated density follows a tone field, so the region shades continuously from blank paper (light) to dense cross-hatch (dark) the way an etching does. The hatch geometry is computed in device inches (so angles and wobble are device-consistent); the field is supplied in npc [0,1] and sampled through an inch-to-npc affine at draw time.

Usage

```
sketch_engrave_grob(
  rings,
  field,
  ladder = NULL,
  ladder_levels = 5L,
  ladder_base_gap = 0.08,
  ladder_gap_ratio = 0.62,
  ladder_base_angle = 45,
  ladder_cross_after = 3L,
  roughness = 0.5,
  bowing = 0.3,
  seed = NULL,
  min_gap_in = 0.012,
  gp = gpar(),
  name = NULL,
  vp = NULL
)
```

Arguments

rings	A list of rings, each a list with npc [0,1] x and y vertex vectors bounding the region to engrave (even-odd holes honoured).
field	A vectorised tone function function(x, y) taking npc [0,1] coordinates and returning tone in [0, 1] (0 = paper, 1 = darkest).
ladder	A ladder from engrave_ladder() ; NULL builds a default from the ladder_* parameters.
ladder_levels, ladder_base_gap, ladder_gap_ratio, ladder_base_angle, ladder_cross_after	Ladder controls used when ladder is NULL. ladder_base_gap is an npc-x fraction (converted to inches at draw time).
roughness, bowing, seed	Sketch parameters for the engraving strokes.
min_gap_in	Hard pitch floor in inches: ladder layers finer than this are dropped, so the darkest tones cannot explode into a runaway number of strokes. Default 0.012.
gp	gpar() for the engraving strokes (col, lwd).
name, vp	Passed to grid::gTree().

Value

A SketchEngraveGrob grob subclass.

See Also

Other grob-layer: [sketch_arrow_grob\(\)](#), [sketch_band_grob\(\)](#), [sketch_callout_grob\(\)](#), [sketch_dotplot_grob\(\)](#), [sketch_ellipse_grob\(\)](#), [sketch_path_grob\(\)](#), [sketch_polygon_grob\(\)](#), [sketch_repel_grob\(\)](#), [sketch_spray_grob\(\)](#), [sketch_stroke_grob\(\)](#), [sketch_wedge_grob\(\)](#)

sketch_fill

Dispatch fill-style to the appropriate Layer-1 fill function

Description

Dispatch fill-style to the appropriate Layer-1 fill function

Usage

```
sketch_fill(
  px,
  py,
  fill_style = "hachure",
  hachure_gap = 0.1,
  hachure_angle = 45,
  fill_weight = 1,
  roughness = 0.5,
```

```

    bowing = 0,
    seed = NULL
)

```

Arguments

px, py	Polygon vertices (inch space).
fill_style	Character: one of "hachure", "cross_hatch", "zigzag", "zigzag_line", "dots", "dashed", "solid".
hachure_gap	Gap between fill lines (inches). Default 0.1.
hachure_angle	Base fill angle (degrees). Default 45.
fill_weight	Thickness weight (passed to caller for gpar). Default 1.
roughness, bowing	Sketch params for fill lines. Defaults 0.5, 0.
seed	Integer seed.

Value

List of 2-column (x,y) matrices representing fill stroke segments, OR NULL for "solid" (solid fill handled by polygon fill colour).

See Also

Other sketch-core: [arrowhead\(\)](#), [curve_fill\(\)](#), [engrave_fill\(\)](#), [engrave_ladder\(\)](#), [hachure_fill\(\)](#), [hachure_fill_multi\(\)](#), [leader_path\(\)](#), [repel_layout\(\)](#), [rough_arc\(\)](#), [rough_bezier\(\)](#), [rough_ellipse\(\)](#), [roughen_polyline\(\)](#), [sketch_arrowheads\(\)](#), [sketch_fill_multi\(\)](#), [spray_scatter\(\)](#), [stroke_profile\(\)](#), [stroke_ribbon\(\)](#), [treemap_layout\(\)](#), [wash_bleed\(\)](#), [watercolor_wash\(\)](#), [watercolor_wash_multi\(\)](#)

sketch_fill_multi	<i>Dispatch fill-style for a multi-ring (hole-aware) region</i>
-------------------	---

Description

The band counterpart of [sketch_fill\(\)](#): fills a region described by several rings (outer pieces and holes) with one shared scan-line so holes are excluded. Supports the line-based styles "hachure" and "cross_hatch"; "solid" returns NULL (painted by an even-odd polygon fill in the grob). Any other style degrades to "hachure", since the scribble/dots/dashed styles are defined per single ring.

Usage

```

sketch_fill_multi(
  rings,
  fill_style = "hachure",
  hachure_gap = 0.1,
  hachure_angle = 45,
  fill_weight = 1,

```

```

    roughness = 0.5,
    bowing = 0,
    seed = NULL
  )

```

Arguments

rings	A list of rings (see hachure_fill_multi()).
fill_style	Character: one of "hachure", "cross_hatch", "zigzag", "zigzag_line", "dots", "dashed", "solid".
hachure_gap	Gap between fill lines (inches). Default 0.1.
hachure_angle	Base fill angle (degrees). Default 45.
fill_weight	Thickness weight (passed to caller for gpar). Default 1.
roughness, bowing	Sketch params for fill lines. Defaults 0.5, 0.
seed	Integer seed.

Value

List of fill-line segments, or NULL for "solid".

See Also

Other sketch-core: [arrowhead\(\)](#), [curve_fill\(\)](#), [engrave_fill\(\)](#), [engrave_ladder\(\)](#), [hachure_fill\(\)](#), [hachure_fill_multi\(\)](#), [leader_path\(\)](#), [repel_layout\(\)](#), [rough_arc\(\)](#), [rough_bezier\(\)](#), [rough_ellipse\(\)](#), [roughen_polyline\(\)](#), [sketch_arrowheads\(\)](#), [sketch_fill\(\)](#), [spray_scatter\(\)](#), [stroke_profile\(\)](#), [stroke_ribbon\(\)](#), [treemap_layout\(\)](#), [wash_bleed\(\)](#), [watercolor_wash\(\)](#), [watercolor_wash_multi\(\)](#)

sketch_graph

Build node and edge data for a sketch network

Description

Turns an edge list into the two data frames that [geom_sketch_node\(\)](#) and [geom_sketch_edge\(\)](#) consume, placing nodes with the pure-R force-directed [force_layout\(\)](#). Accepts a plain two-column data frame (extra columns are carried through as edge attributes) or - optionally - an **igraph** object.

Usage

```
sketch_graph(edges, nodes = NULL, niter = 500L, seed = NULL)
```

Arguments

edges	A data frame or matrix whose first two columns are the edge endpoints (any identifiers), or an igraph object. Extra data-frame columns are kept as edge attributes.
nodes	Optional. A character vector of node identifiers, or a data frame whose first column is the identifier (further columns are kept as node attributes). Sets the node universe and ordering; defaults to the identifiers seen in edges.
niter, seed	Passed to <code>force_layout()</code> .

Value

A list with two data frames: nodes (name, x, y, plus any node attributes) and edges (from, to, x, y, xend, yend, plus any edge attributes).

See Also

`geom_sketch_edge()`, `force_layout()`.

Other sketch-geoms: `GeomSketchAblin`, `GeomSketchArrow`, `GeomSketchBoxplot`, `GeomSketchBracket`, `GeomSketchCallout`, `GeomSketchChicklet`, `GeomSketchCol`, `GeomSketchContourFilled`, `GeomSketchCurve`, `GeomSketchDotplot`, `GeomSketchDumbbell`, `GeomSketchEdge`, `GeomSketchEllipse`, `GeomSketchEngrave`, `GeomSketchGantt`, `GeomSketchHex`, `GeomSketchLine`, `GeomSketchLinerange`, `GeomSketchLollipop`, `GeomSketchMarkCircle`, `GeomSketchMarkHull`, `GeomSketchPath`, `GeomSketchPoint`, `GeomSketchPolygon`, `GeomSketchRect`, `GeomSketchRibbon`, `GeomSketchRug`, `GeomSketchSegment`, `GeomSketchSfPolygon`, `GeomSketchSlope`, `GeomSketchSmooth`, `GeomSketchSpoke`, `GeomSketchTextRepel`, `GeomSketchViolin`, `StatSketchBeeswarm`, `StatSketchCalendar`, `StatSketchDensityRidges`, `StatSketchFunnel`, `StatSketchPie`, `StatSketchPyramid`, `StatSketchRadar`, `StatSketchStream`, `StatSketchTreemap`, `StatSketchWaffle`, `StatSketchWaterfall`, `annotate_sketch()`, `annotate_sketch_arrow()`, `annotate_sketch_callout()`, `annotate_sketch_highlight()`, `geom_sketch_alluvial()`, `geom_sketch_arc_diagram`, `geom_sketch_bin2d()`, `geom_sketch_bump()`, `geom_sketch_chord()`, `geom_sketch_contour()`, `geom_sketch_count()`, `geom_sketch_dendrogram()`, `geom_sketch_density()`, `geom_sketch_density2d()`, `geom_sketch_ecdf()`, `geom_sketch_function()`, `geom_sketch_histogram()`, `geom_sketch_jitter()`, `geom_sketch_marimekko()`, `geom_sketch_mosaic()`, `geom_sketch_parallel()`, `geom_sketch_qq()`, `geom_sketch_quantile()`, `geom_sketch_rose()`, `geom_sketch_sunburst()`, `geom_sketch_text()`

Examples

```
edges <- data.frame(from = c("A", "A", "B"), to = c("B", "C", "C"))
g <- sketch_graph(edges, seed = 1L)
g$nodes
g$edges
```

sketch_media	<i>The available drawing media</i>
--------------	------------------------------------

Description

The valid values for the `medium` argument of the path-like sketch geoms. "pen" is the default and reproduces the classic constant-width double stroke; the others render through the variable-width `stroke_ribbon()` engine.

Usage

```
sketch_media()
```

Value

A character vector of medium names.

See Also

Other sketch-media: `scale_medium_discrete()`

Examples

```
sketch_media()
```

sketch_palette	<i>The ggsketch qualitative colour palette</i>
----------------	--

Description

Eight muted ink-on-paper colours led by the package primary (Carolina blue, #7BAFD4), ordered for maximal separation.

Usage

```
sketch_palette(n = NULL, interpolate = TRUE)
```

Arguments

<code>n</code>	Number of colours to return. If <code>NULL</code> , the eight anchor colours are returned. Up to eight are taken verbatim; beyond that they are interpolated (or recycled, if <code>interpolate = FALSE</code>).
<code>interpolate</code>	When <code>n > 8</code> , interpolate the eight anchors into <code>n</code> colours (the default). <code>FALSE</code> recycles the anchors with a warning.

Details

The first eight colours are returned exactly, so small categorical plots keep their recognisable hues. Ask for **more than eight** and the palette is *interpolated*: a smooth `colorRampPalette()` ramp through all eight anchors yields n distinct ink tones, so the discrete sketch scales keep working for large factors and for quasi-continuous use. Set `interpolate = FALSE` to fall back to the old recycling behaviour instead.

Value

A character vector of hex colours.

See Also

Other sketch-theme: `CoordSketch`, `CoordSketchPolar`, `element_sketch_line()`, `ggsketch_check_fonts()`, `ggsketch_save()`, `register_sketch_font()`, `scale_pressure_continuous()`, `scale_roughness_continuous()`, `scale_sketch`, `scale_tone_continuous()`, `theme_sketch()`

Examples

```
sketch_palette(4)
sketch_palette(20)          # interpolated ramp through all eight anchors
```

sketch_papers	<i>The available paper grounds</i>
---------------	------------------------------------

Description

The valid values for the paper argument of `theme_sketch()` and the kind of `element_sketch_paper()`.

Usage

```
sketch_papers()
```

Value

A character vector of paper names ("none" first).

See Also

Other sketch-paper: `element_sketch_paper()`, `paper_grain()`, `paper_primitives()`, `paper_spec()`

Examples

```
sketch_papers()
```

sketch_path_grob	Create a sketchy path grob
------------------	----------------------------

Description

A grid grob that re-roughens its path at actual render resolution in `makeContent()`. Coordinates are in npc [0,1]; roughening is performed in device inches.

Usage

```
sketch_path_grob(
  x,
  y,
  id = NULL,
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  gp = gpar(),
  name = NULL,
  vp = NULL
)
```

Arguments

<code>x, y</code>	Numeric vectors of npc [0,1] coordinates.
<code>id</code>	Integer vector grouping coordinates into separate polylines (same semantics as <code>grid::polylineGrob</code>). NULL treats all points as one path.
<code>roughness, bowing, n_passes, seed</code>	Sketch parameters.
<code>gp</code>	A <code>grid::gpar()</code> object controlling line aesthetics.
<code>name, vp</code>	Passed to <code>grid::grob()</code> .

Value

A `SketchPathGrob` (a `grid` grob subclass).

See Also

Other grob-layer: [sketch_arrow_grob\(\)](#), [sketch_band_grob\(\)](#), [sketch_callout_grob\(\)](#), [sketch_dotplot_grob\(\)](#), [sketch_ellipse_grob\(\)](#), [sketch_engrave_grob\(\)](#), [sketch_polygon_grob\(\)](#), [sketch_repel_grob\(\)](#), [sketch_spray_grob\(\)](#), [sketch_stroke_grob\(\)](#), [sketch_wedge_grob\(\)](#)

sketch_polygon_grob *Create a sketchy polygon grob with optional hachure fill*

Description

Create a sketchy polygon grob with optional hachure fill

Usage

```
sketch_polygon_grob(
  x,
  y,
  id = NULL,
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  fill_gp = gpar(),
  outline_gp = gpar(),
  fill_style = "hachure",
  hachure_angle = 45,
  hachure_gap = NULL,
  fill_weight = 0.5,
  fill_roughness = NULL,
  fill_seed = NULL,
  name = NULL,
  vp = NULL
)
```

Arguments

x, y	Numeric npc [0,1] coordinates.
id	Group IDs (same semantics as <code>grid::polygonGrob</code>).
roughness, bowing, n_passes, seed	Sketch parameters for the outline.
fill_gp	<code>gpar()</code> for fill lines (col sets fill-line colour).
outline_gp	<code>gpar()</code> for the rough outline stroke.
fill_style, hachure_angle, hachure_gap, fill_weight	Fill parameters (hachure_gap in device inches; NULL picks 15% of the shape's smaller drawn extent, clamped to [0.04, 0.4] inches).
fill_roughness	Roughness of the fill strokes. NULL (default) ties it to the outline as roughness * 0.5; set a number to control the fill texture independently of the outline.
fill_seed	Seed for the fill strokes. NULL (default) derives it from seed; set an integer to vary the fill pattern without moving the outline.
name, vp	Passed to <code>grid::grob()</code> .

Value

A SketchPolygonGrob grob subclass.

See Also

Other grob-layer: [sketch_arrow_grob\(\)](#), [sketch_band_grob\(\)](#), [sketch_callout_grob\(\)](#), [sketch_dotplot_grob\(\)](#), [sketch_ellipse_grob\(\)](#), [sketch_engrave_grob\(\)](#), [sketch_path_grob\(\)](#), [sketch_repel_grob\(\)](#), [sketch_spray_grob\(\)](#), [sketch_stroke_grob\(\)](#), [sketch_wedge_grob\(\)](#)

sketch_repel_grob	<i>Create a sketchy repelled-label grob</i>
-------------------	---

Description

Places labels near their anchors (x , y) but nudged apart so they do not overlap each other or sit on the points, via [repel_layout\(\)](#) (run in device inches at draw time). Each displaced label is tied back to its anchor with a roughened leader line. With `boxed = TRUE` the labels sit in roughened rounded boxes (the [geom_sketch_label_repel\(\)](#) look); otherwise they are bare text (the [geom_sketch_text_repel\(\)](#) look).

Usage

```
sketch_repel_grob(
  x,
  y,
  label,
  boxed = FALSE,
  padding = 0.07,
  corner_radius = 0.3,
  box_padding = 0.1,
  point_padding = 0.05,
  min_segment = 0.06,
  max_iter = 2000L,
  roughness = 1,
  bowing = 0.6,
  n_passes = 2L,
  seed = NULL,
  text_gp = gpar(),
  box_gp = gpar(),
  seg_gp = gpar(),
  name = NULL,
  vp = NULL
)
```

Arguments

<code>x, y</code>	Anchor points in npc [0,1] (vectors).
<code>label</code>	Character labels (recycled to the anchors).
<code>boxed</code>	Draw each label in a rounded box? Default FALSE.
<code>padding</code>	Text-to-edge / text clearance, in inches. Default 0.07.
<code>corner_radius</code>	Box corner rounding (fraction of half-side). Default 0.3.
<code>box_padding, point_padding</code>	Extra clearance between boxes and around anchor points, in inches.
<code>min_segment</code>	Shortest leader drawn, in inches (shorter = no leader).
<code>max_iter</code>	Solver iteration cap. Default 2000.
<code>roughness, bowing, n_passes, seed</code>	Sketch parameters.
<code>text_gp, box_gp, seg_gp</code>	<code>gpar()</code> s for the text, the box, and the leader.
<code>name, vp</code>	Passed to <code>grid::gTree()</code> .

Value

A `SketchRepelGrob` grob subclass.

See Also

Other grob-layer: [sketch_arrow_grob\(\)](#), [sketch_band_grob\(\)](#), [sketch_callout_grob\(\)](#), [sketch_dotplot_grob\(\)](#), [sketch_ellipse_grob\(\)](#), [sketch_engrave_grob\(\)](#), [sketch_path_grob\(\)](#), [sketch_polygon_grob\(\)](#), [sketch_spray_grob\(\)](#), [sketch_stroke_grob\(\)](#), [sketch_wedge_grob\(\)](#)

<code>sketch_spray_grob</code>	<i>Create an airbrush / spray stroke grob</i>
--------------------------------	---

Description

A grid grob that draws its path as a soft cloud of dots instead of a stroked line: it re-roughens the centreline at device resolution, then scatters dots around it with [spray_scatter\(\)](#), for the airbrush / spray-can medium (no hard outline). Coordinates are npc [0,1]; the scatter happens in device inches inside `makeContent()`.

Usage

```
sketch_spray_grob(
  x,
  y,
  id = NULL,
  spread = 0.05,
  density = 150,
```

```

dot_r = 0.004,
roughness = 1,
bowing = 1,
n_passes = 1L,
seed = NULL,
gp = gpar(),
name = NULL,
vp = NULL
)

```

Arguments

<code>x, y</code>	Numeric vectors of npc [0,1] coordinates.
<code>id</code>	Integer vector grouping coordinates into separate strokes (NULL treats all points as one).
<code>spread, density, dot_r</code>	Passed to spray_scatter() (in inches).
<code>roughness, bowing, n_passes, seed</code>	Sketch parameters for the centreline.
<code>gp</code>	A grid::gpar() ; its <code>col</code> becomes the dot fill, <code>alpha</code> is honoured.
<code>name, vp</code>	Passed to grid::gTree() .

Value

A SketchSprayGrob (a grid grob subclass).

See Also

Other grob-layer: [sketch_arrow_grob\(\)](#), [sketch_band_grob\(\)](#), [sketch_callout_grob\(\)](#), [sketch_dotplot_grob\(\)](#), [sketch_ellipse_grob\(\)](#), [sketch_engrave_grob\(\)](#), [sketch_path_grob\(\)](#), [sketch_polygon_grob\(\)](#), [sketch_repel_grob\(\)](#), [sketch_stroke_grob\(\)](#), [sketch_wedge_grob\(\)](#)

sketch_stroke_grob	<i>Create a variable-width sketch stroke grob</i>
--------------------	---

Description

A grid grob that draws its path as a tapered / pressure-varying hand-drawn stroke. Unlike [sketch_path_grob\(\)](#) (constant-lwd polylines), the line is built from [stroke_ribbon\(\)](#) polygons, so it can taper to a point, swell with pressure, or vary like a broad calligraphic nib. Coordinates are npc [0,1]; roughening and offsetting happen in device inches inside `makeContent()`.

Usage

```

sketch_stroke_grob(
  x,
  y,
  id = NULL,
  width = 0.03,
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  taper = "none",
  taper_frac = 0,
  pressure = NULL,
  nib_angle = NULL,
  jitter_w = 0,
  cap = "round",
  gp = gpar(),
  name = NULL,
  vp = NULL
)

```

Arguments

<code>x, y</code>	Numeric vectors of npc [0,1] coordinates.
<code>id</code>	Integer vector grouping coordinates into separate strokes (same semantics as sketch_path_grob()). NULL treats all points as one stroke.
<code>width</code>	Full stroke width in inches . Default 0.03.
<code>roughness, bowing, n_passes, seed</code>	Sketch parameters for the centreline.
<code>taper, taper_frac, pressure, nib_angle, jitter_w, cap</code>	Passed to stroke_ribbon() .
<code>gp</code>	A grid::gpar() ; its <code>col</code> becomes the ribbon fill (the ribbon is painted, not stroked), <code>alpha</code> is honoured.
<code>name, vp</code>	Passed to grid::gTree() .

Value

A SketchStrokeGrob (a grid grob subclass).

See Also

Other grob-layer: [sketch_arrow_grob\(\)](#), [sketch_band_grob\(\)](#), [sketch_callout_grob\(\)](#), [sketch_dotplot_grob\(\)](#), [sketch_ellipse_grob\(\)](#), [sketch_engrave_grob\(\)](#), [sketch_path_grob\(\)](#), [sketch_polygon_grob\(\)](#), [sketch_repel_grob\(\)](#), [sketch_spray_grob\(\)](#), [sketch_wedge_grob\(\)](#)

sketch_style	<i>Apply a complete hand-drawn style in one call</i>
--------------	--

Description

Bundles a `theme_sketch()` paper ground, a qualitative colour + fill palette tuned to that ground and (on `ggplot2` $\geq$ 4.0) matching default geom ink into a single object to add to a plot: `p + sketch_style("chalkboard")`. Styles:

Usage

```
sketch_style(style, palette = TRUE, ...)
```

Arguments

<code>style</code>	One of <code>sketch_styles()</code> .
<code>palette</code>	If TRUE (default), include discrete colour and fill scales using the style's palette. Set FALSE when a mapped colour/fill variable is continuous (a discrete scale would error) or you want your own scale.
<code>...</code>	Passed on to <code>theme_sketch()</code> (e.g. <code>base_size</code> , <code>rough_frame</code> , <code>seed</code>). paper is fixed by the style and cannot be overridden here.

Details

- "notebook" – blue-ruled paper written in ballpoint/fountain-pen inks.
- "chalkboard" – dark board with chalky pastels; pair the line geoms with `medium = "chalk"`.
- "blueprint" – cyanotype draughting; pale monoline strokes, warm accent.
- "field_notes" – kraft expedition journal in sepia and olive.
- "graphite" – plain ground, grey pencil tones; pair with `medium = "pencil"`.

Value

A list of plot components (theme + optional scales) to add with `+`.

See Also

Other sketch-style: `sketch_styles()`

Examples

```
library(ggplot2)
p <- ggplot(mpg, aes(displ, hwy, colour = drv)) +
  geom_sketch_point(seed = 1L)
p + sketch_style("field_notes")
p + sketch_style("chalkboard")
```

sketch_styles	<i>The available style presets</i>
---------------	------------------------------------

Description

The valid values for `sketch_style()`.

Usage

```
sketch_styles()
```

Value

A character vector of style names.

See Also

Other sketch-style: `sketch_style()`

Examples

```
sketch_styles()
```

sketch_wedge_grob	<i>Create a sketchy pie/donut-wedge grob</i>
-------------------	--

Description

Draws one or more annular sectors (pie or donut slices) sharing a centre, guaranteed circular regardless of panel shape: radii are taken as a fraction of the smaller panel dimension and the geometry is assembled in device inches inside `makeContent()`, then roughened. Each slice's roughened boundary is also reused as the fill region so the hand-drawn edge is kept.

Usage

```
sketch_wedge_grob(
  x0,
  y0,
  r,
  r0 = 0,
  start,
  end,
  roughness = 1,
  bowing = 0.4,
  n_passes = 2L,
  seed = NULL,
```

```

    fill_style = "solid",
    hatchure_angle = 45,
    hatchure_gap = 0.07,
    fill_weight = 0.5,
    fill_gp = gpar(),
    outline_gp = gpar(),
    name = NULL,
    vp = NULL
  )

```

Arguments

<code>x0, y0</code>	Centre in npc [0,1] (scalars).
<code>r, r0</code>	Outer and inner radius as a fraction of the smaller panel dimension (<code>r0 = 0</code> gives a pie, <code>r0 > 0</code> a donut).
<code>start, end</code>	Per-slice start/end angles in radians.
<code>roughness, bowing, n_passes, seed</code>	Sketch parameters for the outline.
<code>fill_style</code>	"solid" (default) paints each slice in its fill colour; any other style ("hachure", ...) hatches it instead.
<code>hachure_angle, hatchure_gap, fill_weight</code>	Fill parameters (<code>hachure_gap</code> is a fraction of the smaller panel dimension).
<code>fill_gp</code>	<code>gpar()</code> for the fill (per-slice col recycled).
<code>outline_gp</code>	<code>gpar()</code> for the rough outline (per-slice col recycled).
<code>name, vp</code>	Passed to <code>grid::gTree()</code> .

Value

A `SketchWedgeGrob` grob subclass.

See Also

Other grob-layer: [sketch_arrow_grob\(\)](#), [sketch_band_grob\(\)](#), [sketch_callout_grob\(\)](#), [sketch_dotplot_grob\(\)](#), [sketch_ellipse_grob\(\)](#), [sketch_engrave_grob\(\)](#), [sketch_path_grob\(\)](#), [sketch_polygon_grob\(\)](#), [sketch_repel_grob\(\)](#), [sketch_spray_grob\(\)](#), [sketch_stroke_grob\(\)](#)

spray_scatter

Scatter a cloud of dots along a path (airbrush / spray)

Description

Samples points along a centreline and offsets each one perpendicular to the path by a Gaussian random amount, producing a soft-edged spray of dots with no hard outline – the airbrush / spray-can look. The dot density falls off from the centreline (the Gaussian offset), and dots near the edge are drawn smaller so the cloud feathers out. Pure number-to-number (no `grid/ggplot2`); deterministic apart from the seeded RNG (ADR-0004).

Usage

```
spray_scatter(x, y, spread = 0.04, density = 140, dot_r = 0.004, seed = NULL)
```

Arguments

<code>x, y</code>	Numeric vectors of centreline vertices (same length, any units – spread, dot_r and density are interpreted in those units).
<code>spread</code>	Standard deviation of the perpendicular offset (cloud half-width).
<code>density</code>	Mean number of dots per unit of path arc-length.
<code>dot_r</code>	Base dot radius. Edge dots shrink toward $0.4 * \text{dot_r}$.
<code>seed</code>	Integer seed for the scatter (ADR-0004).

Value

A 4-column matrix with columns `x`, `y` (dot centres), `r` (dot radii) and `a` (a 0-1 weight that fades with distance from the centreline, for the caller to fold into per-dot alpha if desired). Zero rows for a degenerate path.

See Also

Other sketch-core: [arrowhead\(\)](#), [curve_fill\(\)](#), [engrave_fill\(\)](#), [engrave_ladder\(\)](#), [hachure_fill\(\)](#), [hachure_fill_multi\(\)](#), [leader_path\(\)](#), [repel_layout\(\)](#), [rough_arc\(\)](#), [rough_bezier\(\)](#), [rough_ellipse\(\)](#), [roughen_polyline\(\)](#), [sketch_arrowheads\(\)](#), [sketch_fill\(\)](#), [sketch_fill_multi\(\)](#), [stroke_profile\(\)](#), [stroke_ribbon\(\)](#), [treemap_layout\(\)](#), [wash_bleed\(\)](#), [watercolor_wash\(\)](#), [watercolor_wash_multi\(\)](#)

StatSketchBeeswarm	<i>Sketchy beeswarm chart</i>
--------------------	-------------------------------

Description

Draws a hand-drawn beeswarm (dot-strip) plot: at each categorical `x`, the points are nudged sideways so they no longer overlap, so the width of the swarm reads as the local density of `y`. The sideways offset is computed deterministically in data space (bin `y`, then fan each bin symmetrically around the category centre), so it is fully reproducible and device independent. Dots are drawn with [geom_sketch_point\(\)](#), so they keep the usual hand-drawn wobble (cf. `ggbeeswarm::geom_beeswarm()`).

Usage

```
StatSketchBeeswarm
```

```
geom_sketch_beeswarm(
  mapping = NULL,
  data = NULL,
  stat = "sketch_beeswarm",
  position = "identity",
  ...,

```

```

    binwidth = NULL,
    nbins = 30L,
    width = NULL,
    roughness = NULL,
    n_passes = 2L,
    seed = NULL,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

```

Arguments

mapping	Aesthetic mappings created by <code>ggplot2::aes()</code> . Requires x (usually discrete) and y.
data	Data to display.
stat	Statistical transformation. Default "sketch_beeswarm".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
binwidth	Height of the y bins used to group points into rows. Default NULL chooses nbins even bins across the y range.
nbins	Number of y bins when binwidth is NULL. Default 30.
width	Sideways spacing between adjacent points in a row, in category units. Default NULL auto-sizes so the widest row stays within the category. Increase for a wider swarm.
roughness	Point roughness. Default NULL (the geom default).
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#),

StatSketchCalendar, StatSketchDensityRidges, StatSketchFunnel, StatSketchPie, StatSketchPyramid, StatSketchRadar, StatSketchStream, StatSketchTreemap, StatSketchWaffle, StatSketchWaterfall, annotate_sketch(), annotate_sketch_arrow(), annotate_sketch_callout(), annotate_sketch_highlight(), geom_sketch_alluvial(), geom_sketch_arc_diagram(), geom_sketch_bin2d(), geom_sketch_bump(), geom_sketch_chord(), geom_sketch_contour(), geom_sketch_count(), geom_sketch_dendrogram(), geom_sketch_density(), geom_sketch_density2d(), geom_sketch_ecdf(), geom_sketch_function(), geom_sketch_histogram(), geom_sketch_jitter(), geom_sketch_marimekko(), geom_sketch_mosaic(), geom_sketch_parallel(), geom_sketch_qq(), geom_sketch_quantile(), geom_sketch_rose(), geom_sketch_sunburst(), geom_sketch_text(), sketch_graph()

Examples

```
library(ggplot2)
ggplot(iris, aes(Species, Sepal.Length, colour = Species)) +
  geom_sketch_beeswarm(seed = 1L) +
  theme_sketch()
```

StatSketchCalendar	<i>Sketchy calendar heatmap</i>
--------------------	---------------------------------

Description

Draws a hand-drawn calendar heatmap in the GitHub-contributions style: one roughened tile per day, arranged as weeks (columns) and weekdays (rows), with the tile colour given by a value, and the axes labelled with weekday and month names. Map date (a Date) and fill (the value). Tiles are drawn with `geom_sketch_tile()`; the default `fill_style = "solid"` lets the colour gradient read as a heatmap. For more than one year, add a year column to your data and facet on it (each panel covers one year). No new dependencies.

Usage

StatSketchCalendar

```
geom_sketch_calendar(
  mapping = NULL,
  data = NULL,
  stat = "sketch_calendar",
  position = "identity",
  ...,
  week_start = "sunday",
  labels = TRUE,
  width = 0.9,
  height = 0.9,
  colour = "grey75",
  fill_style = "solid",
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
```

```

    seed = NULL,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

```

Arguments

mapping	Aesthetic mappings created by <code>ggplot2::aes()</code> . Requires date; usually map fill to the value.
data	Data to display.
stat	Statistical transformation. Default "sketch_calendar".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
week_start	"sunday" (default) or "monday": which weekday is the top row.
labels	Label the axes with weekday and month names instead of the raw grid numbers? Default TRUE; it returns the layer together with x/y scales, so set FALSE if you want to supply your own scales. Month positions are exact to within one week (they are computed without seeing the year).
width, height	Tile size in grid units (gaps appear below 1). Default 0.9.
colour	Tile outline colour. Default "grey75" (set NA for none).
fill_style	Tile fill style; see <code>geom_sketch_rect()</code> . Default "solid" (best for a colour-graded heatmap).
roughness, bowing, n_passes, seed	Sketch parameters.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A ggplot2 layer object (with `labels = TRUE`, a list of the layer plus weekday/month axis scales).

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#),

```
geom_sketch_alluvial(), geom_sketch_arc_diagram(), geom_sketch_bin2d(), geom_sketch_bump(),
geom_sketch_chord(), geom_sketch_contour(), geom_sketch_count(), geom_sketch_dendrogram(),
geom_sketch_density(), geom_sketch_density2d(), geom_sketch_ecdf(), geom_sketch_function(),
geom_sketch_histogram(), geom_sketch_jitter(), geom_sketch_marimekko(), geom_sketch_mosaic(),
geom_sketch_parallel(), geom_sketch_qq(), geom_sketch_quantile(), geom_sketch_rose(),
geom_sketch_sunburst(), geom_sketch_text(), sketch_graph()
```

Examples

```
library(ggplot2)
df <- data.frame(day = as.Date("2024-01-01") + 0:120)
df$value <- runif(nrow(df))
ggplot(df, aes(date = day, fill = value)) +
  geom_sketch_calendar(seed = 1L) +
  coord_equal() +
  theme_sketch()
```

StatSketchDensityRidges

Sketchy ridgeline (joyplot)

Description

Draws a hand-drawn ridgeline plot: a kernel density of x for each category on the discrete y , raised to its own baseline so the ridges overlap and the changing shape of the distribution is easy to compare. Densities are computed and positioned by [StatSketchDensityRidges](#); each ridge is filled and outlined with the usual sketch look, and ridges are drawn back-to-front so nearer ones sit on top (cf. `ggribes::geom_density_ridges()`).

Usage

StatSketchDensityRidges

GeomSketchRidgeline

```
geom_sketch_ridgeline(
  mapping = NULL,
  data = NULL,
  stat = "sketch_density_ridges",
  position = "identity",
  ...,
  scale = 1.8,
  bandwidth = NULL,
  n = 256L,
  rel_min_height = 0,
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
```

```

    seed = NULL,
    fill_style = "hachure",
    hachure_angle = 45,
    hachure_gap = NULL,
    fill_weight = 0.5,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

```

Arguments

mapping	Aesthetic mappings created by <code>ggplot2::aes()</code> . Requires x and a (usually discrete) y.
data	Data to display.
stat	Statistical transformation. Default "sketch_density_ridges".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
scale	Vertical scaling: how many y units the tallest ridge spans. Values above 1 make ridges overlap. Default 1.8.
bandwidth	Kernel bandwidth passed to <code>stats::density()</code> . Default NULL (automatic per group).
n	Number of density evaluation points. Default 256.
rel_min_height	Drop the density tails below this fraction of the global peak, trimming long thin feet. Default 0 (keep all).
roughness	Non-negative roughness (0 = straight). Default 1.
bowing	Non-negative bowing multiplier. Default 1.
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
fill_style	One of "hachure", "cross_hatch", "zigzag", "zigzag_line", "scribble", "dots", "dashed", "stipple", "pencil_shade", "solid", or "watercolor". Default "hachure".
hachure_angle	Fill line angle in degrees. Default 45.
hachure_gap	Fill line gap in npc units (NULL = 6% of diagonal).
fill_weight	Stroke weight for fill lines. Default 0.5.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A `ggplot2` layer object.

See Also

Other sketch-geoms: `GeomSketchAblin`, `GeomSketchArrow`, `GeomSketchBoxplot`, `GeomSketchBracket`, `GeomSketchCallout`, `GeomSketchChicklet`, `GeomSketchCol`, `GeomSketchContourFilled`, `GeomSketchCurve`, `GeomSketchDotplot`, `GeomSketchDumbbell`, `GeomSketchEdge`, `GeomSketchEllipse`, `GeomSketchEngrave`, `GeomSketchGantt`, `GeomSketchHex`, `GeomSketchLine`, `GeomSketchLinerange`, `GeomSketchLollipop`, `GeomSketchMarkCircle`, `GeomSketchMarkHull`, `GeomSketchPath`, `GeomSketchPoint`, `GeomSketchPolygon`, `GeomSketchRect`, `GeomSketchRibbon`, `GeomSketchRug`, `GeomSketchSegment`, `GeomSketchSfPolygon`, `GeomSketchSlope`, `GeomSketchSmooth`, `GeomSketchSpoke`, `GeomSketchTextRepel`, `GeomSketchViolin`, `StatSketchBeeswarm`, `StatSketchCalendar`, `StatSketchFunnel`, `StatSketchPie`, `StatSketchPyramid`, `StatSketchRadar`, `StatSketchStream`, `StatSketchTreemap`, `StatSketchWaffle`, `StatSketchWaterfall`, `annotate_sketch()`, `annotate_sketch_arrow()`, `annotate_sketch_callout()`, `annotate_sketch_highlight()`, `geom_sketch_alluvial()`, `geom_sketch_arc_diagram()`, `geom_sketch_bin2d()`, `geom_sketch_bump()`, `geom_sketch_chord()`, `geom_sketch_contour()`, `geom_sketch_count()`, `geom_sketch_dendrogram()`, `geom_sketch_density()`, `geom_sketch_density2d()`, `geom_sketch_ecdf()`, `geom_sketch_function()`, `geom_sketch_histogram()`, `geom_sketch_jitter()`, `geom_sketch_marimekko()`, `geom_sketch_mosaic()`, `geom_sketch_parallel()`, `geom_sketch_qq()`, `geom_sketch_quantile()`, `geom_sketch_rose()`, `geom_sketch_sunburst()`, `geom_sketch_text()`, `sketch_graph()`

Examples

```
library(ggplot2)
ggplot(iris, aes(Sepal.Length, Species, fill = Species)) +
  geom_sketch_ridgeline(scale = 1.6, seed = 1L) +
  theme_sketch()
```

StatSketchFunnel

Sketchy funnel chart

Description

Draws a hand-drawn funnel: one horizontal bar per stage, centred on zero, whose width is the stage's value (x), so the shrinking bars read as drop-off down the stages (y). Translucent trapezoids connect each stage to the next. Put the first stage at the top by ordering the y factor levels accordingly (or add `scale_y_discrete(limits = rev)`); hide the mirrored x axis with `theme(axis.text.x = element_blank())` or relabel it with `scale_x_continuous(labels = abs)`.

Usage

```
StatSketchFunnel
```

```
GeomSketchFunnel
```

```
geom_sketch_funnel(
  mapping = NULL,
  data = NULL,
  stat = "sketch_funnel",
  position = "identity",
```

```

...,
bar_width = 0.7,
connectors = TRUE,
connector_alpha = 0.3,
fill_style = "hachure",
roughness = 1,
bowing = 1,
n_passes = 2L,
seed = NULL,
na.rm = FALSE,
show.legend = NA,
inherit.aes = TRUE
)

```

Arguments

mapping	Aesthetic mappings created by <code>ggplot2::aes()</code> . Requires x (the stage value) and y (the stage).
data	Data to display.
stat	Statistical transformation. Default "sketch_funnel".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
bar_width	Bar thickness in y units. Default 0.7.
connectors	Draw the trapezoid connectors? Default TRUE.
connector_alpha	Connector translucency. Default 0.3.
fill_style	Bar fill style; see <code>geom_sketch_rect()</code> . Default "hachure".
roughness, bowing, n_passes, seed	Sketch parameters.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#),

```

StatSketchBeeswarm, StatSketchCalendar, StatSketchDensityRidges, StatSketchPie, StatSketchPyramid,
StatSketchRadar, StatSketchStream, StatSketchTreemap, StatSketchWaffle, StatSketchWaterfall,
annotate_sketch(), annotate_sketch_arrow(), annotate_sketch_callout(), annotate_sketch_highlight(),
geom_sketch_alluvial(), geom_sketch_arc_diagram(), geom_sketch_bin2d(), geom_sketch_bump(),
geom_sketch_chord(), geom_sketch_contour(), geom_sketch_count(), geom_sketch_dendrogram(),
geom_sketch_density(), geom_sketch_density2d(), geom_sketch_ecdf(), geom_sketch_function(),
geom_sketch_histogram(), geom_sketch_jitter(), geom_sketch_marimekko(), geom_sketch_mosaic(),
geom_sketch_parallel(), geom_sketch_qq(), geom_sketch_quantile(), geom_sketch_rose(),
geom_sketch_sunburst(), geom_sketch_text(), sketch_graph()

```

Examples

```

library(ggplot2)
funnel <- data.frame(
  stage = factor(c("Visited", "Signed up", "Activated", "Paid"),
    levels = rev(c("Visited", "Signed up", "Activated",
      "Paid"))),
  n      = c(1200, 460, 210, 80)
)
ggplot(funnel, aes(n, stage, fill = stage)) +
  geom_sketch_funnel(seed = 1L, show.legend = FALSE) +
  scale_x_continuous(labels = abs) +
  theme_sketch()

```

StatSketchPie

Sketchy pie and donut charts

Description

`geom_sketch_pie()` draws a hand-drawn pie chart: one slice per row, sized by the amount aesthetic and coloured by fill. `geom_sketch_donut()` is the same with a hole in the middle. Slices are kept circular regardless of the panel's shape, so they look right without `coord_fixed()`. The chart is drawn in the centre of the panel; pair it with `theme_sketch()` or `ggplot2::theme_void()` to hide the (unused) axes.

Usage

GeomSketchPie

```

geom_sketch_pie(
  mapping = NULL,
  data = NULL,
  stat = StatSketchPie,
  position = "identity",
  ...,
  x0 = 0.5,
  y0 = 0.5,
  r = 0.45,

```

```

    r0 = 0,
    roughness = 1,
    bowing = 0.4,
    n_passes = 2L,
    seed = NULL,
    fill_style = "solid",
    hatchure_angle = 45,
    hatchure_gap = 0.02,
    fill_weight = 0.5,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

  geom_sketch_donut(..., r0 = 0.25)

```

Arguments

mapping	Aesthetic mappings created by <code>ggplot2::aes()</code> . Requires amount; map fill to colour the slices.
data	Data with one row per slice.
stat	The statistic; defaults to <code>StatSketchPie</code> , which converts amount into slice angles.
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
x0, y0	Pie centre in npc [0,1]. Default 0.5 (panel centre).
r	Outer radius as a fraction of the smaller panel dimension. Default 0.45.
r0	Inner radius (hole) as a fraction of the smaller panel dimension. 0 (default) is a full pie; <code>geom_sketch_donut()</code> defaults it to 0.25 (a ring between r0 and r).
roughness	Non-negative roughness of the slice edges (0 = clean). Default 1.
bowing	Non-negative bowing multiplier. Default 0.4 (kept low so the radial edges stay straight-ish).
n_passes	Number of stroke passes. Default 2.
seed	Integer seed. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .
fill_style	"solid" (default) paints each slice in its fill colour with a rough edge; any other style ("hachure", "cross_hatch", "zigzag", "scribble", "dots", "dashed", "stipple", "pencil_shade") hatches it instead.
hachure_angle	Fill line angle in degrees. Default 45.
hachure_gap	Spacing between fill lines, as a fraction of the smaller panel dimension – this is the hatch <i>density</i> knob: smaller is denser. Default 0.02.
fill_weight	Stroke weight for fill lines. Default 0.5.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
df <- data.frame(
  group = c("Sketch", "Polish", "Coffee", "Doubt"),
  amount = c(40, 25, 20, 15)
)
ggplot(df, aes(amount = amount, fill = group)) +
  geom_sketch_pie(seed = 1L) +
  scale_fill_sketch() +
  coord_fixed() +
  theme_void()

# A donut:
ggplot(df, aes(amount = amount, fill = group)) +
  geom_sketch_donut(seed = 2L) +
  theme_void()
```

StatSketchPyramid

Sketchy population pyramid

Description

Draws a hand-drawn population pyramid: back-to-back horizontal bars per category (y), mirrored about zero by a two-level side aesthetic (the first level in sort order grows left, the second right). Usually you also map fill to the same variable as side; relabel the mirrored axis with `scale_x_continuous(labels = abs)`.

Usage

```

StatSketchPyramid

GeomSketchPyramid

geom_sketch_pyramid(
  mapping = NULL,
  data = NULL,
  stat = "sketch_pyramid",
  position = "identity",
  ...,
  bar_width = 0.8,
  fill_style = "hachure",
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)

```

Arguments

mapping	Aesthetic mappings created by ggplot2::aes() . Requires x (the count), y (the category) and side (the two-level split).
data	Data to display.
stat	Statistical transformation. Default "sketch_pyramid".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
bar_width	Bar thickness in y units. Default 0.8.
fill_style	Bar fill style; see geom_sketch_rect() . Default "hachure".
roughness, bowing, n_passes, seed	Sketch parameters.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#),

GeomSketchDotplot, GeomSketchDumbbell, GeomSketchEdge, GeomSketchEllipse, GeomSketchEngrave, GeomSketchGantt, GeomSketchHex, GeomSketchLine, GeomSketchLinerange, GeomSketchLollipop, GeomSketchMarkCircle, GeomSketchMarkHull, GeomSketchPath, GeomSketchPoint, GeomSketchPolygon, GeomSketchRect, GeomSketchRibbon, GeomSketchRug, GeomSketchSegment, GeomSketchSfPolygon, GeomSketchSlope, GeomSketchSmooth, GeomSketchSpoke, GeomSketchTextRepel, GeomSketchViolin, StatSketchBeeswarm, StatSketchCalendar, StatSketchDensityRidges, StatSketchFunnel, StatSketchPie, StatSketchRadar, StatSketchStream, StatSketchTreemap, StatSketchWaffle, StatSketchWaterfall, annotate_sketch(), annotate_sketch_arrow(), annotate_sketch_callout(), annotate_sketch_highlight(), geom_sketch_alluvial(), geom_sketch_arc_diagram(), geom_sketch_bin2d(), geom_sketch_bump(), geom_sketch_chord(), geom_sketch_contour(), geom_sketch_count(), geom_sketch_dendrogram(), geom_sketch_density(), geom_sketch_density2d(), geom_sketch_ecdf(), geom_sketch_function(), geom_sketch_histogram(), geom_sketch_jitter(), geom_sketch_marimekko(), geom_sketch_mosaic(), geom_sketch_parallel(), geom_sketch_qq(), geom_sketch_quantile(), geom_sketch_rose(), geom_sketch_sunburst(), geom_sketch_text(), sketch_graph()

Examples

```
library(ggplot2)
pop <- data.frame(
  age = factor(rep(c("0-19", "20-39", "40-59", "60+"), 2),
    levels = c("0-19", "20-39", "40-59", "60+")),
  sex = rep(c("Female", "Male"), each = 4),
  n = c(340, 420, 380, 240, 360, 440, 370, 200)
)
ggplot(pop, aes(n, age, side = sex, fill = sex)) +
  geom_sketch_pyramid(seed = 1L) +
  scale_x_continuous(labels = abs) +
  theme_sketch()
```

StatSketchRadar

Sketchy radar (spider) chart

Description

Draws a hand-drawn radar chart: each series is a closed polygon over evenly spaced angular axes, with a roughened web (concentric rings, radial spokes, and axis labels) drawn behind. Map axis (the variable that becomes each spoke, usually a factor), value (its magnitude), and group (the series); map colour/fill to the series too. Values are scaled to a common unit radius (`rmax`), and each polygon takes any `fill_style` (including "watercolor"). No new dependencies (cf. `ggradar`, `fmsb::radarchart()`).

Usage

```
StatSketchRadar
```

```
GeomSketchRadar
```

```
geom_sketch_radar(
```

```

mapping = NULL,
data = NULL,
stat = "sketch_radar",
position = "identity",
...,
rmax = NULL,
fill_style = "hachure",
hachure_angle = 45,
hachure_gap = NULL,
fill_weight = 0.5,
n_rings = 4L,
grid_colour = "grey75",
label_size = 3.2,
label_colour = "grey30",
label_family = NULL,
roughness = 1,
bowing = 1,
n_passes = 2L,
seed = NULL,
na.rm = FALSE,
show.legend = NA,
inherit.aes = TRUE
)

```

Arguments

mapping	Aesthetic mappings created by <code>ggplot2::aes()</code> . Requires axis and value; usually also map group (and colour/fill) to the series.
data	Data to display.
stat	Statistical transformation. Default "sketch_radar".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
rmax	Value mapped to the outer ring (NULL = the data maximum).
fill_style	Polygon fill style; see geom_sketch_polygon() . Default "hachure".
hachure_angle, hachure_gap, fill_weight	Fill controls; see geom_sketch_polygon() .
n_rings	Number of concentric grid rings. Default 4.
grid_colour	Colour of the web (rings + spokes). Default "grey75".
label_size, label_colour, label_family	Axis-label text controls.
roughness, bowing, n_passes, seed	Sketch parameters.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Details

Like `geom_sketch_pie()`, the chart lives in its own square coordinate space, so pair it with `coord_equal()` and `theme_void()` (or `theme_sketch()`).

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: `GeomSketchAblin`, `GeomSketchArrow`, `GeomSketchBoxplot`, `GeomSketchBracket`, `GeomSketchCallout`, `GeomSketchChicklet`, `GeomSketchCol`, `GeomSketchContourFilled`, `GeomSketchCurve`, `GeomSketchDotplot`, `GeomSketchDumbbell`, `GeomSketchEdge`, `GeomSketchEllipse`, `GeomSketchEngrave`, `GeomSketchGantt`, `GeomSketchHex`, `GeomSketchLine`, `GeomSketchLinerange`, `GeomSketchLollipop`, `GeomSketchMarkCircle`, `GeomSketchMarkHull`, `GeomSketchPath`, `GeomSketchPoint`, `GeomSketchPolygon`, `GeomSketchRect`, `GeomSketchRibbon`, `GeomSketchRug`, `GeomSketchSegment`, `GeomSketchSfPolygon`, `GeomSketchSlope`, `GeomSketchSmooth`, `GeomSketchSpoke`, `GeomSketchTextRepel`, `GeomSketchViolin`, `StatSketchBeeswarm`, `StatSketchCalendar`, `StatSketchDensityRidges`, `StatSketchFunnel`, `StatSketchPie`, `StatSketchPyramid`, `StatSketchStream`, `StatSketchTreemap`, `StatSketchWaffle`, `StatSketchWaterfall`, `annotate_sketch()`, `annotate_sketch_arrow()`, `annotate_sketch_callout()`, `annotate_sketch_highlight()`, `geom_sketch_alluvial()`, `geom_sketch_arc_diagram()`, `geom_sketch_bin2d()`, `geom_sketch_bump()`, `geom_sketch_chord()`, `geom_sketch_contour()`, `geom_sketch_count()`, `geom_sketch_dendrogram()`, `geom_sketch_density()`, `geom_sketch_density2d()`, `geom_sketch_ecdf()`, `geom_sketch_function()`, `geom_sketch_histogram()`, `geom_sketch_jitter()`, `geom_sketch_marimekko()`, `geom_sketch_mosaic()`, `geom_sketch_parallel()`, `geom_sketch_qq()`, `geom_sketch_quantile()`, `geom_sketch_rose()`, `geom_sketch_sunburst()`, `geom_sketch_text()`, `sketch_graph()`

Examples

```
library(ggplot2)
skills <- data.frame(
  axis = rep(c("Speed", "Power", "Range", "Control", "Stamina"), 2),
  value = c(8, 6, 9, 5, 7, 5, 9, 4, 8, 6),
  who = rep(c("A", "B"), each = 5)
)
ggplot(skills, aes(axis = axis, value = value, group = who,
                  colour = who, fill = who)) +
  geom_sketch_radar(alpha = 0.3, seed = 1L) +
  coord_equal() +
  theme_void()
```

Description

Draws a hand-drawn streamgraph (a.k.a. ThemeRiver): a stacked area chart whose baseline floats so the coloured bands flow around a moving centre, good for showing how a few categories rise and fall over time. Map *x* (usually time), *y* (value), and *fill* (category). Values are stacked and the baseline offset by [StatSketchStream](#); each band is drawn as a roughened ribbon, so it takes any *fill_style* (including "watercolor"). No new dependencies (cf. `ggstream::geom_stream()`).

Usage

StatSketchStream

```
geom_sketch_streamgraph(
  mapping = NULL,
  data = NULL,
  stat = "sketch_stream",
  position = "identity",
  ...,
  offset = "silhouette",
  fill_style = "hachure",
  roughness = 1,
  bowing = 1,
  n_passes = 2L,
  seed = NULL,
  na.rm = FALSE,
  show.legend = NA,
  inherit.aes = TRUE
)
```

Arguments

<code>mapping</code>	Aesthetic mappings created by ggplot2::aes() . Requires <i>x</i> and <i>y</i> ; usually map <i>fill</i> (or <i>group</i>) to the category.
<code>data</code>	Data to display.
<code>stat</code>	Statistical transformation. Default "sketch_stream".
<code>position</code>	Position adjustment. Default "identity".
<code>...</code>	Other arguments passed on to the layer.
<code>offset</code>	Baseline placement: "silhouette" (centred, the classic streamgraph, default), "zero" (a normal stacked area), or "wiggle" (minimises the overall slope).
<code>fill_style</code>	Band fill style; see geom_sketch_ribbon() . Default "hachure".
<code>roughness</code> , <code>bowing</code> , <code>n_passes</code> , <code>seed</code>	Sketch parameters.
<code>na.rm</code>	Remove missing values silently? Default FALSE.
<code>show.legend</code>	Logical; include in legend?
<code>inherit.aes</code>	Override default aesthetics?

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: [GeomSketchAblin](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [StatSketchWaterfall](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
set.seed(1)
df <- expand.grid(t = 1:12, grp = c("a", "b", "c", "d"))
df$v <- abs(sin(df$t / 3 + match(df$grp, letters)) + 1.2) * 5
ggplot(df, aes(t, v, fill = grp)) +
  geom_sketch_streamgraph(seed = 1L) +
  theme_sketch()
```

StatSketchTreemap

Sketchy treemap

Description

Draws a hand-drawn treemap: nested rectangles tiling a square, each with area proportional to a value, so the biggest categories take the most space. Map the value to area and the category to fill; map label to write a name in each tile. The rectangles are laid out with a squarified algorithm ([treemap_layout\(\)](#)) and drawn with the roughened rect look, so they take any fill_style (including "watercolor"). Add [ggplot2::coord_equal\(\)](#) for true proportions. No new dependencies (cf. [treemapify::geom_treemap\(\)](#)).

Usage

```
StatSketchTreemap
```

```
GeomSketchTreemap
```

```
geom_sketch_treemap(  
  mapping = NULL,  
  data = NULL,  
  stat = "sketch_treemap",  
  position = "identity",  
  ...,  
  label_size = 3.2,  
  label_colour = "grey15",  
  colour = "grey25",  
  fill_style = "hachure",  
  roughness = 1,  
  bowing = 1,  
  n_passes = 2L,  
  seed = NULL,  
  na.rm = FALSE,  
  show.legend = NA,  
  inherit.aes = TRUE  
)
```

Arguments

mapping	Aesthetic mappings created by <code>ggplot2::aes()</code> . Requires area; usually map fill and optionally label.
data	Data to display.
stat	Statistical transformation. Default "sketch_treemap".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
label_size	Label text size (as in <code>ggplot2::geom_text()</code>). Default 3.2.
label_colour	Label colour. Default "grey15".
colour	Tile outline colour. Default "grey25" (set NA for none).
fill_style	Tile fill style; see <code>geom_sketch_rect()</code> . Default "hachure".
roughness, bowing, n_passes, seed	Sketch parameters.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A ggplot2 layer object.

See Also

Other sketch-geoms: `GeomSketchAblin`, `GeomSketchArrow`, `GeomSketchBoxplot`, `GeomSketchBracket`, `GeomSketchCallout`, `GeomSketchChicklet`, `GeomSketchCol`, `GeomSketchContourFilled`, `GeomSketchCurve`, `GeomSketchDotplot`, `GeomSketchDumbbell`, `GeomSketchEdge`, `GeomSketchEllipse`, `GeomSketchEngrave`, `GeomSketchGantt`, `GeomSketchHex`, `GeomSketchLine`, `GeomSketchLinerange`, `GeomSketchLollipop`, `GeomSketchMarkCircle`, `GeomSketchMarkHull`, `GeomSketchPath`, `GeomSketchPoint`, `GeomSketchPolygon`, `GeomSketchRect`, `GeomSketchRibbon`, `GeomSketchRug`, `GeomSketchSegment`, `GeomSketchSfPolygon`, `GeomSketchSlope`, `GeomSketchSmooth`, `GeomSketchSpoke`, `GeomSketchTextRepel`, `GeomSketchViolin`, `StatSketchBeeswarm`, `StatSketchCalendar`, `StatSketchDensityRidges`, `StatSketchFunnel`, `StatSketchPie`, `StatSketchPyramid`, `StatSketchRadar`, `StatSketchStream`, `StatSketchWaffle`, `StatSketchWaterfall`, `annotate_sketch()`, `annotate_sketch_arrow()`, `annotate_sketch_callout()`, `annotate_sketch_highlight()`, `geom_sketch_alluvial()`, `geom_sketch_arc_diagram()`, `geom_sketch_bin2d()`, `geom_sketch_bump()`, `geom_sketch_chord()`, `geom_sketch_contour()`, `geom_sketch_count()`, `geom_sketch_dendrogram()`, `geom_sketch_density()`, `geom_sketch_density2d()`, `geom_sketch_ecdf()`, `geom_sketch_function()`, `geom_sketch_histogram()`, `geom_sketch_jitter()`, `geom_sketch_marimekko()`, `geom_sketch_mosaic()`, `geom_sketch_parallel()`, `geom_sketch_qq()`, `geom_sketch_quantile()`, `geom_sketch_rose()`, `geom_sketch_sunburst()`, `geom_sketch_text()`, `sketch_graph()`

Examples

```
library(ggplot2)
df <- data.frame(grp = c("Alpha", "Bravo", "Charlie", "Delta", "Echo"),
                 val = c(40, 25, 15, 12, 8))
ggplot(df, aes(area = val, fill = grp, label = grp)) +
  geom_sketch_treemap(seed = 1L) +
  coord_equal() +
  theme_sketch()
```

StatSketchWaffle

*Sketchy waffle chart***Description**

Draws a hand-drawn waffle: a square grid (default 10x10 = 100 cells) where each cell is coloured by category, so the number of cells of a colour reads as that category's share of the whole. Map the category to fill; map a count to weight if the data is already summarised (otherwise each row counts as one). Cells are drawn with `geom_sketch_tile()`, so they take the usual roughened outline and fill_style (including "watercolor"). Add `ggplot2::coord_equal()` to keep the cells square. (cf. `waffle::geom_waffle()`).

Usage

StatSketchWaffle

```
geom_sketch_waffle(
  mapping = NULL,
  data = NULL,
```

```

    stat = "sketch_waffle",
    position = "identity",
    ...,
    n_rows = 10L,
    cells = 100L,
    flip = FALSE,
    width = 0.9,
    height = 0.9,
    colour = "grey35",
    fill_style = "hachure",
    roughness = 1,
    bowing = 1,
    n_passes = 2L,
    seed = NULL,
    na.rm = FALSE,
    show.legend = NA,
    inherit.aes = TRUE
  )

```

Arguments

mapping	Aesthetic mappings created by <code>ggplot2::aes()</code> . Requires fill; optionally weight (a per-row count).
data	Data to display.
stat	Statistical transformation. Default "sketch_waffle".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
n_rows	Number of rows in the grid. Default 10.
cells	Total number of cells (the grid resolution). Default 100, i.e. a percentage waffle.
flip	Fill columns top-down instead of bottom-up? Default FALSE.
width, height	Cell size in grid units (gaps appear below 1). Default 0.9.
colour	Outline colour for each cell. Default "grey35".
fill_style	Cell fill style; see <code>geom_sketch_rect()</code> . Default "hachure".
roughness, bowing, n_passes, seed	Sketch parameters.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Value

A `ggplot2` layer object.

See Also

Other sketch-geoms: `GeomSketchAblin`, `GeomSketchArrow`, `GeomSketchBoxplot`, `GeomSketchBracket`, `GeomSketchCallout`, `GeomSketchChicklet`, `GeomSketchCol`, `GeomSketchContourFilled`, `GeomSketchCurve`, `GeomSketchDotplot`, `GeomSketchDumbbell`, `GeomSketchEdge`, `GeomSketchEllipse`, `GeomSketchEngrave`, `GeomSketchGantt`, `GeomSketchHex`, `GeomSketchLine`, `GeomSketchLinerange`, `GeomSketchLollipop`, `GeomSketchMarkCircle`, `GeomSketchMarkHull`, `GeomSketchPath`, `GeomSketchPoint`, `GeomSketchPolygon`, `GeomSketchRect`, `GeomSketchRibbon`, `GeomSketchRug`, `GeomSketchSegment`, `GeomSketchSfPolygon`, `GeomSketchSlope`, `GeomSketchSmooth`, `GeomSketchSpoke`, `GeomSketchTextRepel`, `GeomSketchViolin`, `StatSketchBeeswarm`, `StatSketchCalendar`, `StatSketchDensityRidges`, `StatSketchFunnel`, `StatSketchPie`, `StatSketchPyramid`, `StatSketchRadar`, `StatSketchStream`, `StatSketchTreemap`, `StatSketchWaterfall`, `annotate_sketch()`, `annotate_sketch_arrow()`, `annotate_sketch_callout()`, `annotate_sketch_highlight()`, `geom_sketch_alluvial()`, `geom_sketch_arc_diagram()`, `geom_sketch_bin2d()`, `geom_sketch_bump()`, `geom_sketch_chord()`, `geom_sketch_contour()`, `geom_sketch_count()`, `geom_sketch_dendrogram()`, `geom_sketch_density()`, `geom_sketch_density2d()`, `geom_sketch_ecdf()`, `geom_sketch_function()`, `geom_sketch_histogram()`, `geom_sketch_jitter()`, `geom_sketch_marimekko()`, `geom_sketch_mosaic()`, `geom_sketch_parallel()`, `geom_sketch_qq()`, `geom_sketch_quantile()`, `geom_sketch_rose()`, `geom_sketch_sunburst()`, `geom_sketch_text()`, `sketch_graph()`

Examples

```
library(ggplot2)
df <- data.frame(grp = c("Rent", "Food", "Travel", "Other"),
                 spend = c(45, 25, 20, 10))
ggplot(df, aes(fill = grp, weight = spend)) +
  geom_sketch_waffle(seed = 1L) +
  coord_equal() +
  theme_sketch()
```

StatSketchWaterfall	<i>Sketchy waterfall chart</i>
---------------------	--------------------------------

Description

Draws a hand-drawn waterfall: each step's delta (y) floats a bar from the running total before it to the running total after it, stepping the level up and down across the categories (x), with dotted hand-drawn connectors carrying the level across the gaps. Map an optional measure aesthetic with value "total" for rows that should draw the running total from zero (e.g. a closing "Net" row) instead of a delta.

Usage

```
StatSketchWaterfall

GeomSketchWaterfall

geom_sketch_waterfall(
  mapping = NULL,
```

```

data = NULL,
stat = "sketch_waterfall",
position = "identity",
...,
width = 0.62,
fill_increase = "#7fa87f",
fill_decrease = "#b56b6f",
fill_total = "#8391a7",
connectors = TRUE,
connector_colour = "grey40",
colour = "grey25",
fill_style = "hachure",
roughness = 1,
bowing = 1,
n_passes = 2L,
seed = NULL,
na.rm = FALSE,
show.legend = NA,
inherit.aes = TRUE
)

```

Arguments

mapping	Aesthetic mappings created by <code>ggplot2::aes()</code> . Requires x (step, usually a factor in ledger order) and y (the delta); optionally measure ("relative" or "total" per row).
data	Data to display.
stat	Statistical transformation. Default "sketch_waterfall".
position	Position adjustment. Default "identity".
...	Other arguments passed on to the layer.
width	Bar width in x units. Default 0.62.
fill_increase, fill_decrease, fill_total	Bar fills by direction. Set any to NULL to map fill yourself.
connectors	Draw the dotted level connectors? Default TRUE.
connector_colour	Connector colour. Default "grey40".
colour	Bar outline colour. Default "grey25".
fill_style	Bar fill style; see <code>geom_sketch_rect()</code> . Default "hachure".
roughness, bowing, n_passes, seed	Sketch parameters.
na.rm	Remove missing values silently? Default FALSE.
show.legend	Logical; include in legend?
inherit.aes	Override default aesthetics?

Details

Bars are coloured by direction (`fill_increase` / `fill_decrease` / `fill_total`); set any of them to `NULL` and map `fill` yourself (the stat exposes the direction as `after_stat(change)`).

Value

A `ggplot2` layer object.

See Also

Other sketch-geoms: [GeomSketchAbline](#), [GeomSketchArrow](#), [GeomSketchBoxplot](#), [GeomSketchBracket](#), [GeomSketchCallout](#), [GeomSketchChicklet](#), [GeomSketchCol](#), [GeomSketchContourFilled](#), [GeomSketchCurve](#), [GeomSketchDotplot](#), [GeomSketchDumbbell](#), [GeomSketchEdge](#), [GeomSketchEllipse](#), [GeomSketchEngrave](#), [GeomSketchGantt](#), [GeomSketchHex](#), [GeomSketchLine](#), [GeomSketchLinerange](#), [GeomSketchLollipop](#), [GeomSketchMarkCircle](#), [GeomSketchMarkHull](#), [GeomSketchPath](#), [GeomSketchPoint](#), [GeomSketchPolygon](#), [GeomSketchRect](#), [GeomSketchRibbon](#), [GeomSketchRug](#), [GeomSketchSegment](#), [GeomSketchSfPolygon](#), [GeomSketchSlope](#), [GeomSketchSmooth](#), [GeomSketchSpoke](#), [GeomSketchTextRepel](#), [GeomSketchViolin](#), [StatSketchBeeswarm](#), [StatSketchCalendar](#), [StatSketchDensityRidges](#), [StatSketchFunnel](#), [StatSketchPie](#), [StatSketchPyramid](#), [StatSketchRadar](#), [StatSketchStream](#), [StatSketchTreemap](#), [StatSketchWaffle](#), [annotate_sketch\(\)](#), [annotate_sketch_arrow\(\)](#), [annotate_sketch_callout\(\)](#), [annotate_sketch_highlight\(\)](#), [geom_sketch_alluvial\(\)](#), [geom_sketch_arc_diagram\(\)](#), [geom_sketch_bin2d\(\)](#), [geom_sketch_bump\(\)](#), [geom_sketch_chord\(\)](#), [geom_sketch_contour\(\)](#), [geom_sketch_count\(\)](#), [geom_sketch_dendrogram\(\)](#), [geom_sketch_density\(\)](#), [geom_sketch_density2d\(\)](#), [geom_sketch_ecdf\(\)](#), [geom_sketch_function\(\)](#), [geom_sketch_histogram\(\)](#), [geom_sketch_jitter\(\)](#), [geom_sketch_marimekko\(\)](#), [geom_sketch_mosaic\(\)](#), [geom_sketch_parallel\(\)](#), [geom_sketch_qq\(\)](#), [geom_sketch_quantile\(\)](#), [geom_sketch_rose\(\)](#), [geom_sketch_sunburst\(\)](#), [geom_sketch_text\(\)](#), [sketch_graph\(\)](#)

Examples

```
library(ggplot2)
ledger <- data.frame(
  step = factor(c("Start", "Sales", "Refunds", "Costs", "Tax", "Net"),
    levels = c("Start", "Sales", "Refunds", "Costs", "Tax",
      "Net")),
  delta = c(120, 80, -25, -60, -18, 0),
  kind = c("relative", "relative", "relative", "relative", "relative",
    "total")
)
ggplot(ledger, aes(step, delta, measure = kind)) +
  geom_sketch_waterfall(seed = 1L) +
  theme_sketch()
```

stroke_profile

Width-profile presets for [stroke_ribbon\(\)](#)

Description

Returns a vectorised pressure function $f(t)$ over the normalised arc-length t in $[0, 1]$, giving a width multiplier (≥ 0) along the stroke. Pass the result as pressure to [stroke_ribbon\(\)](#).

Usage

```
stroke_profile(kind = c("flat", "taper_in", "taper_out", "belly"))
```

Arguments

kind One of "flat" (constant), "taper_in" (thin start, thick end), "taper_out" (thick start, thin end), or "belly" (a spindle that swells in the middle and thins at both ends).

Value

A function of `t` returning a numeric multiplier of the same length.

See Also

Other sketch-core: [arrowhead\(\)](#), [curve_fill\(\)](#), [engrave_fill\(\)](#), [engrave_ladder\(\)](#), [hachure_fill\(\)](#), [hachure_fill_multi\(\)](#), [leader_path\(\)](#), [repel_layout\(\)](#), [rough_arc\(\)](#), [rough_bezier\(\)](#), [rough_ellipse\(\)](#), [roughen_polyline\(\)](#), [sketch_arrowheads\(\)](#), [sketch_fill\(\)](#), [sketch_fill_multi\(\)](#), [spray_scatter\(\)](#), [stroke_ribbon\(\)](#), [treemap_layout\(\)](#), [wash_bleed\(\)](#), [watercolor_wash\(\)](#), [watercolor_wash_multi\(\)](#)

stroke_ribbon

Build a variable-width stroke as a closed polygon ribbon

Description

Offsets a centreline left and right by a per-vertex half-width and closes the loop into a single polygon, so a hand-drawn stroke can taper, swell with pressure, or vary like a broad calligraphic nib – effects grid cannot do with a constant-lwd polyline. The centreline is used as supplied (roughen it first with [roughen_polyline\(\)](#) for a sketchy edge); this routine only offsets, so it is deterministic apart from `jitter_w`.

Usage

```
stroke_ribbon(
  x,
  y,
  width,
  taper = c("none", "both", "start", "end"),
  taper_frac = 0,
  pressure = NULL,
  nib_angle = NULL,
  nib_floor = 0.15,
  jitter_w = 0,
  cap = c("round", "butt"),
  miter_limit = 3,
  seed = NULL
)
```

Arguments

<code>x, y</code>	Numeric vectors of centreline vertices in inch space (same length).
<code>width</code>	Full stroke width in inches: a scalar, or a per-vertex vector.
<code>taper</code>	Where the stroke narrows to a tip: "none" (default), "both", "start", or "end".
<code>taper_frac</code>	Tip width as a fraction of width (0 = sharp point, 1 = no narrowing). Default 0.
<code>pressure</code>	Optional vectorised function $f(t)$ over normalised arc-length t in $[0, 1]$ returning a width multiplier (see stroke_profile()). NULL (default) is constant pressure.
<code>nib_angle</code>	Optional broad-nib angle in degrees for a calligraphic stroke: the half-width is scaled by $ \sin(\text{segment_dir} - \text{nib_angle}) $ (with a small floor), so the line is thick across the nib and thin along it. NULL (default) disables it.
<code>nib_floor</code>	Minimum nib multiplier in $[0, 1]$, so a calligraphic stroke never fully vanishes. Default 0.15.
<code>jitter_w</code>	Width roughening in $[0, 1]$: random per-vertex modulation of the half-width, for a dry / inky edge. Default 0.
<code>cap</code>	End-cap style: "round" (default) or "butt".
<code>miter_limit</code>	Clamp on the joint miter factor, capping how far an outside corner extends at a sharp turn. Default 3.
<code>seed</code>	Integer seed for <code>jitter_w</code> (ADR-0004).

Value

A 2-column (`x`, `y`) matrix giving the closed ribbon polygon (right side forward, end cap, left side back, start cap). Fill it with the stroke colour and no border for a solid variable-width stroke.

See Also

Other sketch-core: [arrowhead\(\)](#), [curve_fill\(\)](#), [engrave_fill\(\)](#), [engrave_ladder\(\)](#), [hachure_fill\(\)](#), [hachure_fill_multi\(\)](#), [leader_path\(\)](#), [repel_layout\(\)](#), [rough_arc\(\)](#), [rough_bezier\(\)](#), [rough_ellipse\(\)](#), [roughen_polyline\(\)](#), [sketch_arrowheads\(\)](#), [sketch_fill\(\)](#), [sketch_fill_multi\(\)](#), [spray_scatter\(\)](#), [stroke_profile\(\)](#), [treemap_layout\(\)](#), [wash_bleed\(\)](#), [watercolor_wash\(\)](#), [watercolor_wash_multi\(\)](#)

 theme_sketch

A hand-drawn theme for ggplot2

Description

A sketch-style theme based on [ggplot2::theme_bw\(\)](#) with a muted palette to match the rough geoms. Light (default) and dark presets are available via `dark`. The sketchiness of the *marks* comes from the geoms themselves; this theme styles the surrounding frame, typography, and background.

Usage

```
theme_sketch(
  base_size = 11,
  base_family = getOption("ggsketch.base_family", ""),
  base_line_size = base_size/22,
  base_rect_size = base_size/22,
  dark = FALSE,
  rough_frame = FALSE,
  roughness = 0.5,
  paper = "none",
  seed = NULL
)
```

Arguments

<code>base_size</code>	Base font size (default 11).
<code>base_family</code>	Base font family. Defaults to <code>getOption("ggsketch.base_family", "")</code> ; "" uses the device default. "auto" picks the first installed handwriting font (see ggsketch_check_fonts()), falling back to the device default. Set <code>options(ggsketch.base_family = "auto")</code> to make every sketch plot's text (titles, axes, legend) use handwriting, not just the labels drawn by geom_sketch_text() / geom_sketch_bracket() . Or pass an explicit family name.
<code>base_line_size</code>	Line size (default <code>base_size / 22</code>).
<code>base_rect_size</code>	Rect size (default <code>base_size / 22</code>).
<code>dark</code>	If TRUE, use the dark "chalkboard" preset. Default FALSE (light "paper" preset).
<code>rough_frame</code>	If TRUE, draw the <i>frame</i> itself hand-drawn: the major gridlines, panel border, axis ticks, facet strip backgrounds, and the continuous-scale colourbar frame and ticks become roughened sketch grobs (via element_sketch_line() / element_sketch_rect()) so the whole frame matches the marks. Default FALSE.
<code>roughness</code>	Roughness for the rough frame (only used when <code>rough_frame = TRUE</code>). Default 0.5.
<code>paper</code>	Paper ground drawn behind the data: one of sketch_papers() ("none" (default), "notebook", "graph", "dotted", "aged", "blueprint", "chalkboard", "kraft"). A non-"none" paper paints a simulated texture as the panel background, recolours the plot ground and text to suit it (light text on the dark blueprint / chalkboard grounds), and suppresses the default gridlines where the paper supplies its own ruling.
<code>seed</code>	Integer seed for the rough frame, for reproducible wobble. NULL uses <code>getOption("ggsketch.seed", 1L)</code> .

Value

A `ggplot2::theme` object.

See Also

Other sketch-theme: [CoordSketch](#), [CoordSketchPolar](#), [element_sketch_line\(\)](#), [ggsketch_check_fonts\(\)](#), [ggsketch_save\(\)](#), [register_sketch_font\(\)](#), [scale_pressure_continuous\(\)](#), [scale_roughness_continuous\(\)](#), [scale_sketch](#), [scale_tone_continuous\(\)](#), [sketch_palette\(\)](#)

Examples

```
library(ggplot2)
p <- ggplot(mtcars, aes(wt, mpg)) + geom_sketch_point(seed = 1L)
p + theme_sketch()
p + theme_sketch(dark = TRUE)
p + theme_sketch(rough_frame = TRUE)
p + theme_sketch(paper = "notebook")
```

treemap_layout

Squarified treemap layout

Description

Lays out one rectangle per value inside the box $[x, x + \text{width}] \times [y, y + \text{height}]$, with area proportional to the value and aspect ratios kept close to 1. Returns rectangles in the original input order.

Usage

```
treemap_layout(values, x = 0, y = 0, width = 1, height = 1)
```

Arguments

values	Non-negative numeric vector (one per tile). Zero / negative values produce zero-area tiles.
x, y	Lower-left corner of the bounding box. Default 0.
width, height	Bounding box size. Default 1.

Value

A data frame with columns xmin, xmax, ymin, ymax, one row per input value, in input order.

See Also

Other sketch-core: [arrowhead\(\)](#), [curve_fill\(\)](#), [engrave_fill\(\)](#), [engrave_ladder\(\)](#), [hachure_fill\(\)](#), [hachure_fill_multi\(\)](#), [leader_path\(\)](#), [repel_layout\(\)](#), [rough_arc\(\)](#), [rough_bezier\(\)](#), [rough_ellipse\(\)](#), [roughen_polyline\(\)](#), [sketch_arrowheads\(\)](#), [sketch_fill\(\)](#), [sketch_fill_multi\(\)](#), [spray_scatter\(\)](#), [stroke_profile\(\)](#), [stroke_ribbon\(\)](#), [wash_bleed\(\)](#), [watercolor_wash\(\)](#), [watercolor_wash_multi\(\)](#)

Examples

```
treemap_layout(c(6, 3, 2, 1))
```

wash_bleed

*Pigment bleed between two overlapping wash regions***Description**

Where two wet watercolour washes overlap the pigments diffuse and the colours mix - the "wet-on-wet" bleed. This approximates it without polygon clipping: it samples points lying inside *both* polygons (the overlap region) and returns soft translucent specks tinted with the blended colour. The grob layer paints the specks at low alpha over the two washes, so the shared area reads as mingled pigment. Pure geometry + colour math; reproduces on every device.

Usage

```
wash_bleed(
  ax,
  ay,
  bx,
  by,
  col_a,
  col_b,
  density = 0.5,
  bleed = NULL,
  seed = NULL
)
```

Arguments

ax, ay, bx, by	Vertices (inch space) of the two wash polygons.
col_a, col_b	The two wash colours (any R colour spec).
density	Fraction in $[0, 1]$: speck density in the overlap. Default 0.5.
bleed	Speck radius scale in inches. NULL (default) scales to ~2.5% of the overlap's bounding diagonal.
seed	Integer seed.

Value

A list(x, y, r, fill) of bleed specks (inch space), or NULL when the polygons' bounding boxes - or the sampled overlap - do not meet.

See Also

Other sketch-core: [arrowhead\(\)](#), [curve_fill\(\)](#), [engrave_fill\(\)](#), [engrave_ladder\(\)](#), [hachure_fill\(\)](#), [hachure_fill_multi\(\)](#), [leader_path\(\)](#), [repel_layout\(\)](#), [rough_arc\(\)](#), [rough_bezier\(\)](#), [rough_ellipse\(\)](#), [roughen_polyline\(\)](#), [sketch_arrowheads\(\)](#), [sketch_fill\(\)](#), [sketch_fill_multi\(\)](#), [spray_scatter\(\)](#), [stroke_profile\(\)](#), [stroke_ribbon\(\)](#), [treemap_layout\(\)](#), [watercolor_wash\(\)](#), [watercolor_wash_multi\(\)](#)

watercolor_wash	<i>Build a watercolour wash for a polygon region</i>
-----------------	--

Description

Returns a stack of translucent boundary copies plus optional granulation specks; the grob layer paints the copies at a low alpha so overlap accumulates tone. The look the line-based fill styles cannot give: soft, pooled, bleeding colour.

Usage

```
watercolor_wash(
  px,
  py,
  n_layers = 6L,
  bleed = NULL,
  granulation = 0,
  grain = 0,
  seed = NULL
)
```

Arguments

px, py	Polygon vertices (inch space).
n_layers	Number of wash copies. More = smoother, deeper, slower. Default 6.
bleed	Edge irregularity in inches. NULL (default) scales to ~2% of the shape's bounding diagonal.
granulation	Fraction in [0, 1]: density of pigment specks (0 = none). Default 0.
grain	Paper-grain coupling in [0, ~1]: how strongly the edge feathers along the paper tooth. 0 (default) is the historical pure-uniform jitter; higher values wick the edge in coherent capillary channels (see paper_grain()). 0 draws no extra randomness, so existing seeds reproduce.
seed	Integer seed.

Value

A list with washes (a list of 2-column (x, y) polygon matrices, outermost/lightest first) and granules (list(x, y, r) in inches, or NULL).

See Also

Other sketch-core: [arrowhead\(\)](#), [curve_fill\(\)](#), [engrave_fill\(\)](#), [engrave_ladder\(\)](#), [hachure_fill\(\)](#), [hachure_fill_multi\(\)](#), [leader_path\(\)](#), [repel_layout\(\)](#), [rough_arc\(\)](#), [rough_bezier\(\)](#), [rough_ellipse\(\)](#), [roughen_polyline\(\)](#), [sketch_arrowheads\(\)](#), [sketch_fill\(\)](#), [sketch_fill_multi\(\)](#), [spray_scatter\(\)](#), [stroke_profile\(\)](#), [stroke_ribbon\(\)](#), [treemap_layout\(\)](#), [wash_bleed\(\)](#), [watercolor_wash_multi\(\)](#)

watercolor_wash_multi *Build a hole-aware watercolour wash for a multi-ring region*

Description

The multi-ring analogue of [watercolor_wash\(\)](#): each wash layer is a jittered, resized copy of *every* ring, so the grob can paint a layer as one even-odd path and keep holes empty (rings shrink/grow about their own centroid). Used by the band / multi-ring grobs (filled contours, density bands).

Usage

```
watercolor_wash_multi(
  rings,
  n_layers = 6L,
  bleed = NULL,
  granulation = 0,
  grain = 0,
  seed = NULL
)
```

Arguments

rings	A list of rings, each a list with inch-space x and y vertex vectors. Even-odd nesting defines holes.
n_layers	Number of wash copies. Default 6.
bleed	Edge irregularity in inches. NULL (default) scales to ~2% of the combined bounding diagonal.
granulation	Fraction in [0, 1]: density of pigment specks (0 = none). Default 0. Specks land inside the even-odd region (never in holes).
grain	Paper-grain coupling in [0, ~1]: how strongly each ring's edge feathers along the paper tooth. 0 (default) is the historical pure-uniform jitter and draws no extra randomness. See paper_grain() .
seed	Integer seed.

Value

A list with washes (a list of layers; each layer is a list of 2-column (x, y) ring matrices, outermost/lightest first) and granules (list(x, y, r) in inches, or NULL).

See Also

Other sketch-core: [arrowhead\(\)](#), [curve_fill\(\)](#), [engrave_fill\(\)](#), [engrave_ladder\(\)](#), [hachure_fill\(\)](#), [hachure_fill_multi\(\)](#), [leader_path\(\)](#), [repel_layout\(\)](#), [rough_arc\(\)](#), [rough_bezier\(\)](#), [rough_ellipse\(\)](#), [roughen_polyline\(\)](#), [sketch_arrowheads\(\)](#), [sketch_fill\(\)](#), [sketch_fill_multi\(\)](#), [spray_scatter\(\)](#), [stroke_profile\(\)](#), [stroke_ribbon\(\)](#), [treemap_layout\(\)](#), [wash_bleed\(\)](#), [watercolor_wash\(\)](#)

Index

* **grob-layer**

- sketch_arrow_grob, [155](#)
- sketch_band_grob, [157](#)
- sketch_callout_grob, [158](#)
- sketch_dotplot_grob, [160](#)
- sketch_ellipse_grob, [161](#)
- sketch_engrave_grob, [162](#)
- sketch_path_grob, [169](#)
- sketch_polygon_grob, [170](#)
- sketch_repel_grob, [171](#)
- sketch_spray_grob, [172](#)
- sketch_stroke_grob, [173](#)
- sketch_wedge_grob, [176](#)

* **sketch-core**

- arrowhead, [13](#)
- curve_fill, [18](#)
- engrave_fill, [21](#)
- engrave_ladder, [22](#)
- hachure_fill, [139](#)
- hachure_fill_multi, [140](#)
- leader_path, [141](#)
- repel_layout, [145](#)
- rough_arc, [146](#)
- rough_bezier, [147](#)
- rough_ellipse, [148](#)
- roughen_polyline, [149](#)
- sketch_arrowheads, [156](#)
- sketch_fill, [163](#)
- sketch_fill_multi, [164](#)
- spray_scatter, [177](#)
- stroke_profile, [200](#)
- stroke_ribbon, [201](#)
- treemap_layout, [204](#)
- wash_bleed, [205](#)
- watercolor_wash, [206](#)
- watercolor_wash_multi, [207](#)

* **sketch-geoms**

- annotate_sketch, [6](#)
- annotate_sketch_arrow, [8](#)

- annotate_sketch_callout, [9](#)
- annotate_sketch_highlight, [11](#)
- geom_sketch_alluvial, [24](#)
- geom_sketch_arc_diagram, [26](#)
- geom_sketch_bin2d, [28](#)
- geom_sketch_bump, [30](#)
- geom_sketch_chord, [32](#)
- geom_sketch_contour, [34](#)
- geom_sketch_count, [35](#)
- geom_sketch_dendrogram, [37](#)
- geom_sketch_density, [39](#)
- geom_sketch_density2d, [40](#)
- geom_sketch_ecdf, [42](#)
- geom_sketch_function, [44](#)
- geom_sketch_histogram, [46](#)
- geom_sketch_jitter, [48](#)
- geom_sketch_marimekko, [50](#)
- geom_sketch_mosaic, [52](#)
- geom_sketch_parallel, [53](#)
- geom_sketch_qq, [55](#)
- geom_sketch_quantile, [57](#)
- geom_sketch_rose, [59](#)
- geom_sketch_sunburst, [61](#)
- geom_sketch_text, [63](#)
- GeomSketchAblin, [65](#)
- GeomSketchArrow, [67](#)
- GeomSketchBoxplot, [69](#)
- GeomSketchBracket, [71](#)
- GeomSketchCallout, [73](#)
- GeomSketchChicklet, [76](#)
- GeomSketchCol, [78](#)
- GeomSketchContourFilled, [80](#)
- GeomSketchCurve, [83](#)
- GeomSketchDotplot, [85](#)
- GeomSketchDumbbell, [87](#)
- GeomSketchEdge, [89](#)
- GeomSketchEllipse, [91](#)
- GeomSketchEngrave, [93](#)
- GeomSketchGantt, [96](#)

- GeomSketchHex, [98](#)
- GeomSketchLine, [100](#)
- GeomSketchLinerange, [102](#)
- GeomSketchLollipop, [105](#)
- GeomSketchMarkCircle, [107](#)
- GeomSketchMarkHull, [110](#)
- GeomSketchPath, [112](#)
- GeomSketchPoint, [114](#)
- GeomSketchPolygon, [116](#)
- GeomSketchRect, [117](#)
- GeomSketchRibbon, [120](#)
- GeomSketchRug, [122](#)
- GeomSketchSegment, [124](#)
- GeomSketchSfPolygon, [126](#)
- GeomSketchSlope, [128](#)
- GeomSketchSmooth, [129](#)
- GeomSketchSpoke, [131](#)
- GeomSketchTextRepel, [133](#)
- GeomSketchViolin, [135](#)
- sketch_graph, [165](#)
- StatSketchBeeswarm, [178](#)
- StatSketchCalendar, [180](#)
- StatSketchDensityRidges, [182](#)
- StatSketchFunnel, [184](#)
- StatSketchPie, [186](#)
- StatSketchPyramid, [188](#)
- StatSketchRadar, [190](#)
- StatSketchStream, [192](#)
- StatSketchTreemap, [194](#)
- StatSketchWaffle, [196](#)
- StatSketchWaterfall, [198](#)
- * **sketch-media**
 - scale_medium_discrete, [149](#)
 - sketch_media, [167](#)
- * **sketch-paper**
 - element_sketch_paper, [20](#)
 - paper_grain, [142](#)
 - paper_primitives, [142](#)
 - paper_spec, [143](#)
 - sketch_papers, [168](#)
- * **sketch-style**
 - sketch_style, [175](#)
 - sketch_styles, [176](#)
- * **sketch-theme**
 - CoordSketch, [15](#)
 - CoordSketchPolar, [17](#)
 - element_sketch_line, [19](#)
 - ggsketch_check_fonts, [137](#)
 - ggsketch_save, [138](#)
 - register_sketch_font, [144](#)
 - scale_pressure_continuous, [150](#)
 - scale_roughness_continuous, [152](#)
 - scale_sketch, [153](#)
 - scale_tone_continuous, [154](#)
 - sketch_palette, [167](#)
 - theme_sketch, [202](#)
- animate_sketch, [5](#)
- animate_sketch(), [14](#), [15](#)
- annotate_sketch, [6](#)
- annotate_sketch(), [9](#), [10](#), [12](#), [25](#), [27](#), [30](#), [31](#), [33](#), [35](#), [37](#), [38](#), [40](#), [42](#), [44](#), [45](#), [48](#), [49](#), [51](#), [53](#), [55](#), [57](#), [58](#), [60](#), [62](#), [64](#), [67](#), [69](#), [71](#), [73](#), [75](#), [77](#), [80](#), [83](#), [84](#), [86](#), [88](#), [90](#), [93](#), [96](#), [98](#), [100](#), [102](#), [104](#), [106](#), [109](#), [111](#), [113](#), [115](#), [117](#), [119](#), [122](#), [123](#), [125](#), [127](#), [129](#), [131](#), [133](#), [135](#), [137](#), [166](#), [180](#), [181](#), [184](#), [186](#), [188](#), [190](#), [192](#), [194](#), [196](#), [198](#), [200](#)
- annotate_sketch_arrow, [8](#)
- annotate_sketch_arrow(), [8](#), [10](#), [12](#), [25](#), [27](#), [30](#), [31](#), [33](#), [35](#), [37](#), [38](#), [40](#), [42](#), [44](#), [45](#), [48](#), [49](#), [51](#), [53](#), [55](#), [57](#), [58](#), [60](#), [62](#), [64](#), [67–69](#), [71](#), [73](#), [75](#), [77](#), [80](#), [83](#), [84](#), [86](#), [88](#), [90](#), [93](#), [96](#), [98](#), [100](#), [102](#), [104](#), [106](#), [109](#), [111](#), [113](#), [115](#), [117](#), [119](#), [122](#), [123](#), [125](#), [127](#), [129](#), [131](#), [133](#), [135](#), [137](#), [156](#), [166](#), [180](#), [181](#), [184](#), [186](#), [188](#), [190](#), [192](#), [194](#), [196](#), [198](#), [200](#)
- annotate_sketch_callout, [9](#)
- annotate_sketch_callout(), [8](#), [9](#), [12](#), [25](#), [27](#), [30](#), [31](#), [33](#), [35](#), [37](#), [38](#), [40](#), [42](#), [44](#), [45](#), [48](#), [49](#), [51](#), [53](#), [55](#), [57](#), [58](#), [60](#), [62](#), [64](#), [67](#), [69](#), [71](#), [73](#), [75](#), [77](#), [80](#), [83](#), [84](#), [86](#), [88](#), [90](#), [93](#), [96](#), [98](#), [100](#), [102](#), [104](#), [106](#), [109](#), [111](#), [113](#), [115](#), [117](#), [119](#), [122](#), [123](#), [125](#), [127](#), [129](#), [131](#), [133](#), [135](#), [137](#), [166](#), [180](#), [181](#), [184](#), [186](#), [188](#), [190](#), [192](#), [194](#), [196](#), [198](#), [200](#)
- annotate_sketch_highlight, [11](#)
- annotate_sketch_highlight(), [8–10](#), [25](#), [27](#), [30](#), [31](#), [33](#), [35](#), [37](#), [38](#), [40](#), [42](#), [44](#), [45](#), [48](#), [49](#), [51](#), [53](#), [55](#), [57](#), [58](#), [60](#), [62](#), [64](#), [67](#), [69](#), [71](#), [73](#), [75](#), [77](#), [80](#), [83](#), [84](#), [86](#), [88](#), [90](#), [93](#), [96](#), [98](#), [100](#), [102](#), [104](#), [106](#), [109](#), [111](#), [113](#), [115](#), [117](#), [119](#),

- [122, 123, 125, 127, 129, 131, 133, 135, 137, 166, 180, 181, 184, 186, 188, 190, 192, 194, 196, 198, 200](#)
- `annotate_sketch_underline`
 (`annotate_sketch_highlight`), 11
- `arrowhead`, 13
- `arrowhead()`, [18, 22, 23, 140, 141, 145, 147–149, 156, 157, 164, 165, 178, 201, 202, 204–207](#)
- `base::I()`, [113, 115, 150, 152, 154](#)
- `boil_gganimate`, 14
- `coord_sketch` (`CoordSketch`), 15
- `coord_sketch()`, 17
- `coord_sketch_polar` (`CoordSketchPolar`), 17
- `CoordSketch`, [15, 18, 20, 138, 139, 144, 151–154, 168, 204](#)
- `CoordSketchPolar`, [16, 17, 20, 138, 139, 144, 151–154, 168, 204](#)
- `curve_fill`, 18
- `curve_fill()`, [13, 22, 23, 140, 141, 145, 147–149, 157, 164, 165, 178, 201, 202, 204–207](#)
- `element_sketch_line`, 19
- `element_sketch_line()`, [16, 18, 138, 139, 144, 151–154, 168, 203, 204](#)
- `element_sketch_paper`, 20
- `element_sketch_paper()`, [142, 143, 168](#)
- `element_sketch_rect`
 (`element_sketch_line`), 19
- `element_sketch_rect()`, 203
- `engrave_fill`, 21
- `engrave_fill()`, [13, 18, 23, 93, 140, 141, 145, 147–149, 157, 162, 164, 165, 178, 201, 202, 204–207](#)
- `engrave_ladder`, 22
- `engrave_ladder()`, [13, 18, 21, 22, 140, 141, 145, 147–149, 157, 163–165, 178, 201, 202, 204–207](#)
- `force_layout`, 23
- `force_layout()`, [89, 90, 165, 166](#)
- `geom_sketch_abline` (`GeomSketchAbline`), 65
- `geom_sketch_alluvial`, 24
- `geom_sketch_alluvial()`, [8–10, 12, 27, 30, 31, 33, 35, 37, 38, 40, 42, 44, 45, 48, 49, 51, 53, 55, 57, 58, 60, 62, 64, 67, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 125, 127, 129, 131, 133, 135, 137, 166, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200](#)
- `geom_sketch_arc_diagram`, 26
- `geom_sketch_arc_diagram()`, [8–10, 12, 25, 30, 31, 33, 35, 37, 38, 40, 42, 44, 45, 48, 49, 51, 53, 55, 57, 58, 60, 62, 64, 67, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 125, 127, 129, 131, 133, 135, 137, 166, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200](#)
- `geom_sketch_area` (`GeomSketchRibbon`), 120
- `geom_sketch_arrow` (`GeomSketchArrow`), 67
- `geom_sketch_arrow()`, [8, 9, 156](#)
- `geom_sketch_bar` (`GeomSketchCol`), 78
- `geom_sketch_beeswarm`
 (`StatSketchBeeswarm`), 178
- `geom_sketch_bin2d`, 28
- `geom_sketch_bin2d()`, [8–10, 12, 25, 27, 31, 33, 35, 37, 38, 40, 42, 44, 45, 48, 49, 51, 53, 55, 57, 58, 60, 62, 64, 67, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 125, 127, 129, 131, 133, 135, 137, 166, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200](#)
- `geom_sketch_bin_2d` (`geom_sketch_bin2d`), 28
- `geom_sketch_boxplot`
 (`GeomSketchBoxplot`), 69
- `geom_sketch_bracket`
 (`GeomSketchBracket`), 71
- `geom_sketch_bracket()`, 203
- `geom_sketch_bump`, 30
- `geom_sketch_bump()`, [8–10, 12, 25, 27, 30, 33, 35, 37, 38, 40, 42, 44, 45, 48, 49, 51, 53, 55, 57, 58, 60, 62, 64, 67, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109,](#)

- [111, 113, 115, 117, 119, 122, 123, 125, 127, 129, 131, 133, 135, 137, 166, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200](#)
- `geom_sketch_calendar`
(`StatSketchCalendar`), [180](#)
- `geom_sketch_callout`
(`GeomSketchCallout`), [73](#)
- `geom_sketch_callout()`, [9, 10, 156](#)
- `geom_sketch_chicklet`
(`GeomSketchChicklet`), [76](#)
- `geom_sketch_chord`, [32](#)
- `geom_sketch_chord()`, [8–10, 12, 24–27, 30, 31, 35, 37, 38, 40, 42, 44, 45, 48–53, 55, 57–62, 64, 67, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 125, 127, 129, 131, 133, 135, 137, 166, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200](#)
- `geom_sketch_circle` (`GeomSketchEllipse`), [91](#)
- `geom_sketch_circle()`, [109](#)
- `geom_sketch_col` (`GeomSketchCol`), [78](#)
- `geom_sketch_col()`, [77](#)
- `geom_sketch_contour`, [34](#)
- `geom_sketch_contour()`, [8–10, 12, 25, 27, 30, 31, 33, 37, 38, 40, 42, 44, 45, 48, 49, 51, 53, 55, 57, 58, 60, 62, 64, 67, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 125, 127, 129, 131, 133, 135, 137, 166, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200](#)
- `geom_sketch_contour_filled`
(`GeomSketchContourFilled`), [80](#)
- `geom_sketch_count`, [35](#)
- `geom_sketch_count()`, [8–10, 12, 25, 27, 30, 31, 33, 35, 38, 40, 42, 44, 45, 48, 49, 51, 53, 55, 57, 58, 60, 62, 64, 67, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 125, 127, 129, 131, 133, 135, 137, 166, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200](#)
- `geom_sketch_crossbar`
(`GeomSketchLinerange`), [102](#)
- `geom_sketch_curve` (`GeomSketchCurve`), [83](#)
- `geom_sketch_curve()`, [90](#)
- `geom_sketch_dendrogram`, [37](#)
- `geom_sketch_dendrogram()`, [8–10, 12, 25, 27, 30, 31, 33, 35, 37, 40, 42, 44, 45, 48, 49, 51, 53, 55, 57, 58, 60, 62, 64, 67, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 125, 127, 129, 131, 133, 135, 137, 166, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200](#)
- `geom_sketch_density`, [39](#)
- `geom_sketch_density()`, [8–10, 12, 25, 27, 30, 31, 33, 35, 37, 38, 42, 44, 45, 48, 49, 51, 53, 55, 57, 58, 60, 62, 64, 67, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 126, 127, 129, 131, 133, 135, 137, 166, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200](#)
- `geom_sketch_density2d`, [40](#)
- `geom_sketch_density2d()`, [8–10, 12, 25, 27, 30, 31, 33, 35, 37, 38, 40, 44, 45, 48, 49, 51, 53, 55, 57, 58, 60, 62, 64, 67, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 126, 127, 129, 131, 133, 135, 137, 166, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200](#)
- `geom_sketch_density2d_filled`
(`GeomSketchContourFilled`), [80](#)
- `geom_sketch_density_2d`
(`geom_sketch_density2d`), [40](#)
- `geom_sketch_density_2d_filled`
(`GeomSketchContourFilled`), [80](#)
- `geom_sketch_donut` (`StatSketchPie`), [186](#)
- `geom_sketch_dotplot`
(`GeomSketchDotplot`), [85](#)
- `geom_sketch_dumbbell`
(`GeomSketchDumbbell`), [87](#)
- `geom_sketch_ecdf`, [42](#)
- `geom_sketch_ecdf()`, [8–10, 12, 25, 27, 30, 31, 33, 35, 37, 38, 40, 42, 45, 48, 49,](#)

- 51, 53, 55, 57, 58, 60, 62, 64, 67, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 126, 127, 129, 131, 133, 135, 137, 166, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200*
- `geom_sketch_edge` (`GeomSketchEdge`), 89
- `geom_sketch_edge()`, *23, 165, 166*
- `geom_sketch_ellipse` (`GeomSketchEllipse`), 91
- `geom_sketch_engrave` (`GeomSketchEngrave`), 93
- `geom_sketch_errorbar` (`GeomSketchLinerange`), 102
- `geom_sketch_freqpoly` (`geom_sketch_histogram`), 46
- `geom_sketch_function`, 44
- `geom_sketch_function()`, *8–10, 12, 25, 27, 30, 31, 33, 35, 37, 38, 40, 42, 44, 48, 49, 51, 53, 55, 57, 58, 60, 62, 64, 67, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 126, 127, 129, 131, 133, 135, 137, 166, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200*
- `geom_sketch_funnel` (`StatSketchFunnel`), 184
- `geom_sketch_gantt` (`GeomSketchGantt`), 96
- `geom_sketch_hex` (`GeomSketchHex`), 98
- `geom_sketch_histogram`, 46
- `geom_sketch_histogram()`, *8–10, 12, 25, 27, 30, 31, 33, 35, 37, 38, 40, 42, 44, 45, 49, 51, 53, 55, 57, 58, 60, 62, 64, 67, 69, 71, 73, 75, 77, 80, 83, 85, 87, 88, 91, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 126, 127, 129, 131, 133, 135, 137, 166, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200*
- `geom_sketch_hline` (`GeomSketchAbline`), 65
- `geom_sketch_jitter`, 48
- `geom_sketch_jitter()`, *8–10, 12, 25, 27, 30, 31, 33, 35, 37, 38, 40, 42, 44, 45, 48, 51, 53, 55, 57, 58, 60, 62, 64, 67, 69, 71, 73, 75, 77, 80, 83, 85, 87, 88, 91, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 126, 127, 129, 131, 133, 135, 137, 166, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200*
- `geom_sketch_label` (`geom_sketch_text`), 63
- `geom_sketch_label_repel` (`GeomSketchTextRepel`), 133
- `geom_sketch_label_repel()`, *145, 171*
- `geom_sketch_line` (`GeomSketchLine`), 100
- `geom_sketch_line()`, *149, 150*
- `geom_sketch_linerange` (`GeomSketchLinerange`), 102
- `geom_sketch_lollipop` (`GeomSketchLollipop`), 105
- `geom_sketch_marimekko`, 50
- `geom_sketch_marimekko()`, *8–10, 12, 25, 27, 30, 31, 33, 35, 37, 38, 40, 42, 44, 45, 48, 49, 53, 55, 57, 58, 60, 62, 64, 67, 69, 71, 73, 75, 77, 80, 83, 85, 87, 88, 91, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 126, 127, 129, 131, 133, 135, 137, 166, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200*
- `geom_sketch_mark_circle` (`GeomSketchMarkCircle`), 107
- `geom_sketch_mark_ellipse` (`GeomSketchMarkCircle`), 107
- `geom_sketch_mark_hull` (`GeomSketchMarkHull`), 110
- `geom_sketch_mark_hull()`, *107*
- `geom_sketch_mark_rect` (`GeomSketchMarkCircle`), 107
- `geom_sketch_mosaic`, 52
- `geom_sketch_mosaic()`, *8–10, 12, 25, 27, 30, 31, 33, 35, 37, 38, 40, 42, 44, 45, 48–51, 55, 57, 58, 60, 62, 64, 67, 69, 71, 73, 75, 77, 80, 83, 85, 87, 88, 91, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 126, 127, 129, 131, 133, 135, 137, 166, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200*
- `geom_sketch_node` (`GeomSketchEdge`), 89
- `geom_sketch_node()`, *23, 165*
- `geom_sketch_parallel`, 53
- `geom_sketch_parallel()`, *8–10, 12, 25, 27, 30, 31, 33, 35, 37, 38, 40, 42, 44, 45,*

- 48, 49, 51, 53, 57, 58, 60, 62, 64, 67,
69, 71, 73, 75, 77, 80, 83, 85, 87, 88,
91, 93, 96, 98, 100, 102, 104, 106,
109, 111, 113, 115, 117, 119, 122,
123, 126, 127, 129, 131, 133, 135,
137, 166, 180, 182, 184, 186, 188,
190, 192, 194, 196, 198, 200
- geom_sketch_path (GeomSketchPath), 112
- geom_sketch_path(), 19, 90, 127, 149, 150
- geom_sketch_pie (StatSketchPie), 186
- geom_sketch_pie(), 192
- geom_sketch_point (GeomSketchPoint), 114
- geom_sketch_point(), 48, 152, 178
- geom_sketch_pointrange
(GeomSketchLinerange), 102
- geom_sketch_polygon
(GeomSketchPolygon), 116
- geom_sketch_polygon(), 25, 33, 60, 62, 127,
191
- geom_sketch_pyramid
(StatSketchPyramid), 188
- geom_sketch_qq, 55
- geom_sketch_qq(), 8–10, 12, 25, 27, 30, 31,
33, 35, 37, 38, 40, 42, 44, 45, 48, 49,
51, 53, 55, 58, 60, 62, 64, 67, 69, 71,
73, 75, 77, 80, 83, 85, 87, 88, 91, 93,
96, 98, 100, 102, 104, 106, 109, 111,
113, 115, 117, 119, 122, 123, 126,
127, 129, 131, 133, 135, 137, 166,
180, 182, 184, 186, 188, 190, 192,
194, 196, 198, 200
- geom_sketch_qq_line (geom_sketch_qq), 55
- geom_sketch_quantile, 57
- geom_sketch_quantile(), 8–10, 12, 25, 27,
30, 31, 33, 35, 37, 38, 40, 42, 44, 45,
48, 49, 51, 53, 55, 57, 60, 62, 64, 67,
69, 71, 73, 75, 77, 80, 83, 85, 87, 88,
91, 93, 96, 98, 100, 102, 104, 106,
109, 111, 113, 115, 117, 119, 122,
123, 126, 127, 129, 131, 133, 135,
137, 166, 180, 182, 184, 186, 188,
190, 192, 194, 196, 198, 200
- geom_sketch_radar (StatSketchRadar), 190
- geom_sketch_rect (GeomSketchRect), 117
- geom_sketch_rect(), 50, 52, 97, 181, 185,
189, 195, 197, 199
- geom_sketch_ribbon (GeomSketchRibbon),
120
- geom_sketch_ribbon(), 193
- geom_sketch_ridgeline
(StatSketchDensityRidges), 182
- geom_sketch_rose, 59
- geom_sketch_rose(), 8–10, 12, 25, 27, 30,
31, 33, 35, 37, 38, 40, 42, 44, 45, 48,
49, 51, 53, 55, 57, 58, 62, 64, 67, 69,
71, 73, 75, 77, 80, 83, 85, 87, 88, 91,
93, 96, 98, 100, 102, 104, 106, 109,
111, 113, 115, 117, 119, 122, 123,
126, 127, 129, 131, 133, 135, 137,
166, 180, 182, 184, 186, 188, 190,
192, 194, 196, 198, 200
- geom_sketch_rug (GeomSketchRug), 122
- geom_sketch_segment
(GeomSketchSegment), 124
- geom_sketch_segment(), 12, 149
- geom_sketch_sf (GeomSketchSfPolygon),
126
- geom_sketch_sf(), 32
- geom_sketch_shade (GeomSketchEngrave),
93
- geom_sketch_shade(), 154
- geom_sketch_slope (GeomSketchSlope), 128
- geom_sketch_smooth (GeomSketchSmooth),
129
- geom_sketch_spoke (GeomSketchSpoke), 131
- geom_sketch_step (GeomSketchSegment),
124
- geom_sketch_step(), 149
- geom_sketch_streamgraph
(StatSketchStream), 192
- geom_sketch_sunburst, 61
- geom_sketch_sunburst(), 8–10, 12, 25, 27,
30, 31, 33, 35, 37, 38, 40, 42, 44, 45,
48, 49, 51, 53, 55, 57, 58, 60, 64, 67,
69, 71, 73, 75, 77, 80, 83, 85, 87, 88,
91, 93, 96, 98, 100, 102, 104, 106,
109, 111, 113, 115, 117, 119, 122,
123, 126, 127, 129, 131, 133, 135,
137, 166, 180, 182, 184, 186, 188,
190, 192, 194, 196, 198, 200
- geom_sketch_text, 63
- geom_sketch_text(), 8–10, 12, 25, 27, 30,
31, 33, 35, 37, 38, 40, 42, 44, 45, 48,
49, 51, 53, 55, 57, 58, 60, 62, 67, 69,
71, 73, 75, 77, 80, 83, 85, 87, 88, 90,
91, 93, 96, 98, 100, 102, 104, 106,

- [109, 111, 113, 115, 117, 119, 122, 123, 126, 127, 129, 131, 133, 135, 137, 144, 166, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200, 203](#)
 geom_sketch_text_repel
 (GeomSketchTextRepel), [133](#)
 geom_sketch_text_repel(), [145, 171](#)
 geom_sketch_tile (GeomSketchRect), [117](#)
 geom_sketch_tile(), [180, 196](#)
 geom_sketch_treemap
 (StatSketchTreemap), [194](#)
 geom_sketch_violin (GeomSketchViolin), [135](#)
 geom_sketch_vline (GeomSketchAblin), [65](#)
 geom_sketch_waffle (StatSketchWaffle), [196](#)
 geom_sketch_waterfall
 (StatSketchWaterfall), [198](#)
 GeomSketchAblin, [7, 9, 10, 12, 25, 27, 29, 31, 33, 35, 36, 38, 40, 42, 43, 45, 47, 49, 51, 53, 54, 57, 58, 60, 62, 64, 65, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 95, 98, 100, 101, 104, 106, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 132, 135, 137, 166, 179, 181, 184, 185, 188, 189, 192, 194, 196, 198, 200](#)
 GeomSketchArea, [39](#)
 GeomSketchArea (GeomSketchRibbon), [120](#)
 GeomSketchArrow, [7, 9, 10, 12, 25, 27, 29, 31, 33, 35, 36, 38, 40, 42, 43, 45, 47, 49, 51, 53, 54, 57, 58, 60, 62, 64, 66, 67, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 95, 98, 100, 101, 104, 106, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 132, 135, 137, 166, 179, 181, 184, 185, 188, 189, 192, 194, 196, 198, 200](#)
 GeomSketchBoxplot, [7, 9, 10, 12, 25, 27, 29, 31, 33, 35, 36, 38, 40, 42, 43, 45, 47, 49, 51, 53, 54, 57, 58, 60, 62, 64, 66, 69, 69, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 95, 98, 100, 101, 104, 106, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 132, 135, 137, 166, 179, 181, 184, 185, 188, 189, 192, 194, 196, 198, 200](#)
 GeomSketchBracket, [7, 9, 10, 12, 25, 27, 29, 31, 33, 35, 36, 38, 40, 42, 43, 45, 47, 49, 51, 53, 54, 57, 58, 60, 62, 64, 66, 69, 71, 71, 75, 77, 80, 83, 84, 86, 88, 90, 93, 95, 98, 100, 101, 104, 106, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 132, 135, 137, 166, 179, 181, 184, 185, 188, 189, 192, 194, 196, 198, 200](#)
 GeomSketchCallout, [7, 9, 10, 12, 25, 27, 29, 31, 33, 35, 36, 38, 40, 42, 43, 45, 47, 49, 51, 53, 54, 57, 58, 60, 62, 64, 66, 69, 71, 73, 73, 77, 80, 83, 84, 86, 88, 90, 93, 95, 98, 100, 101, 104, 106, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 132, 135, 137, 166, 179, 181, 184, 185, 188, 189, 192, 194, 196, 198, 200](#)
 GeomSketchChicklet, [7, 9, 10, 12, 25, 27, 29, 31, 33, 35, 36, 38, 40, 42, 43, 45, 47, 49, 51, 53, 54, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 76, 80, 83, 84, 86, 88, 90, 93, 95, 98, 100, 101, 104, 106, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 132, 135, 137, 166, 179, 181, 184, 185, 188, 189, 192, 194, 196, 198, 200](#)
 GeomSketchCircle (GeomSketchEllipse), [91](#)
 GeomSketchCol, [7, 9, 10, 12, 25, 27, 29, 31, 33, 35, 36, 38, 40, 42, 43, 45, 47, 49, 51, 53, 54, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 78, 83, 84, 86, 88, 90, 93, 95, 98, 100, 101, 104, 106, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 132, 135, 137, 166, 179, 181, 184, 185, 188, 189, 192, 194, 196, 198, 200](#)
 GeomSketchContourFilled, [7, 9, 10, 12, 25, 27, 29, 31, 33, 35, 36, 38, 40, 42, 43, 45, 47, 49, 51, 53, 54, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 80, 80, 84, 86, 88, 90, 93, 95, 98, 100, 101, 104, 106, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 132, 135, 137, 166, 179, 181, 184, 185, 188, 189, 192, 194, 196, 198, 200](#)
 GeomSketchCrossbar
 (GeomSketchLinerange), [102](#)

- GeomSketchCurve, 7, 9, 10, 12, 25, 27, 29, 31, 33, 35, 36, 38, 40, 42, 43, 45, 47, 49, 51, 53, 54, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 80, 83, 83, 86, 88, 90, 93, 95, 98, 100, 101, 104, 106, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 132, 135, 137, 166, 179, 181, 184, 185, 188, 189, 192, 194, 196, 198, 200
- GeomSketchDotplot, 7, 9, 10, 12, 25, 27, 29, 31, 33, 35, 36, 38, 40, 42, 43, 45, 47, 49, 51, 53, 54, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 80, 83, 84, 85, 88, 90, 93, 95, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 132, 135, 137, 166, 179, 181, 184, 185, 188, 190, 192, 194, 196, 198, 200
- GeomSketchDumbbell, 7, 9, 10, 12, 25, 27, 29, 31, 33, 35, 36, 38, 40, 42, 43, 45, 47, 49, 51, 53, 54, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 80, 83, 84, 86, 87, 90, 93, 95, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 132, 135, 137, 166, 179, 181, 184, 185, 188, 190, 192, 194, 196, 198, 200
- GeomSketchEdge, 7, 9, 10, 12, 25, 27, 29, 31, 33, 35, 36, 38, 40, 42, 43, 45, 47, 49, 51, 53, 54, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 89, 93, 95, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 132, 135, 137, 166, 179, 181, 184, 185, 188, 190, 192, 194, 196, 198, 200
- GeomSketchEllipse, 7, 9, 10, 12, 25, 27, 29, 31, 33, 35, 36, 38, 40, 42, 43, 45, 47, 49, 51, 53, 54, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 91, 95, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 132, 135, 137, 166, 179, 181, 184, 185, 188, 190, 192, 194, 196, 198, 200
- GeomSketchEngrave, 7, 9, 10, 12, 25, 27, 29, 31, 33, 35, 36, 38, 40, 42, 43, 45, 47, 49, 51, 53, 54, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 95, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 132, 135, 137, 166, 179, 181, 184, 185, 188, 190, 192, 194, 196, 198, 200
- GeomSketchErrorbar (GeomSketchLinerange), 102
- GeomSketchFunnel (StatSketchFunnel), 184
- GeomSketchGantt, 7, 9, 10, 12, 25, 27, 29, 31, 33, 35, 36, 38, 40, 42, 43, 45, 47, 49, 51, 53, 55, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 95, 96, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 132, 135, 137, 166, 179, 181, 184, 185, 188, 190, 192, 194, 196, 198, 200
- GeomSketchHex, 7, 9, 10, 12, 25, 27, 29, 31, 33, 35, 36, 38, 40, 42, 43, 45, 47, 49, 51, 53, 55, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 95, 98, 98, 102, 104, 106, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 132, 135, 137, 166, 179, 181, 184, 185, 188, 190, 192, 194, 196, 198, 200
- GeomSketchHline (GeomSketchAbline), 65
- GeomSketchLabelRepel (GeomSketchTextRepel), 133
- GeomSketchLine, 7, 9, 10, 12, 25, 27, 29, 31, 33, 35, 36, 38, 40, 42, 43, 45, 47, 49, 51, 53, 55, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 95, 98, 100, 100, 104, 106, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 132, 135, 137, 166, 179, 181, 184, 185, 188, 190, 192, 194, 196, 198, 200
- GeomSketchLinerange, 7, 9, 10, 12, 25, 27, 29, 31, 33, 35, 36, 38, 40, 42, 43, 45, 47, 49, 51, 53, 55, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 95, 98, 100, 102, 102, 106, 109, 111, 113, 115, 117, 119, 121, 123, 125, 127, 129, 131, 132, 135, 137, 166, 179, 181, 184, 185, 188, 190, 192, 194, 196, 198, 200

- GeomSketchLollipop, [7](#), [9](#), [10](#), [12](#), [25](#), [27](#), [29](#),
[31](#), [33](#), [35](#), [36](#), [38](#), [40](#), [42](#), [43](#), [45](#), [47](#),
[49](#), [51](#), [53](#), [55](#), [57](#), [58](#), [60](#), [62](#), [64](#), [66](#),
[69](#), [71](#), [73](#), [75](#), [77](#), [80](#), [83](#), [84](#), [86](#), [88](#),
[90](#), [93](#), [95](#), [98](#), [100](#), [102](#), [104](#), [105](#),
[109](#), [111](#), [113](#), [115](#), [117](#), [119](#), [121](#),
[123](#), [125](#), [127](#), [129](#), [131](#), [132](#), [135](#),
[137](#), [166](#), [179](#), [181](#), [184](#), [185](#), [188](#),
[190](#), [192](#), [194](#), [196](#), [198](#), [200](#)
- GeomSketchMarkCircle, [7](#), [9](#), [10](#), [12](#), [25](#), [27](#),
[29](#), [31](#), [33](#), [35](#), [36](#), [38](#), [40](#), [42](#), [43](#), [45](#),
[48](#), [49](#), [51](#), [53](#), [55](#), [57](#), [58](#), [60](#), [62](#), [64](#),
[66](#), [69](#), [71](#), [73](#), [75](#), [77](#), [80](#), [83](#), [84](#), [86](#),
[88](#), [90](#), [93](#), [95](#), [98](#), [100](#), [102](#), [104](#),
[106](#), [107](#), [111](#), [113](#), [115](#), [117](#), [119](#),
[122](#), [123](#), [125](#), [127](#), [129](#), [131](#), [132](#),
[135](#), [137](#), [166](#), [179](#), [181](#), [184](#), [185](#),
[188](#), [190](#), [192](#), [194](#), [196](#), [198](#), [200](#)
- GeomSketchMarkEllipse
 (GeomSketchMarkCircle), [107](#)
- GeomSketchMarkHull, [7](#), [9](#), [10](#), [12](#), [25](#), [27](#), [29](#),
[31](#), [33](#), [35](#), [36](#), [38](#), [40](#), [42](#), [43](#), [45](#), [48](#),
[49](#), [51](#), [53](#), [55](#), [57](#), [58](#), [60](#), [62](#), [64](#), [66](#),
[69](#), [71](#), [73](#), [75](#), [77](#), [80](#), [83](#), [84](#), [86](#), [88](#),
[90](#), [93](#), [96](#), [98](#), [100](#), [102](#), [104](#), [106](#),
[109](#), [110](#), [113](#), [115](#), [117](#), [119](#), [122](#),
[123](#), [125](#), [127](#), [129](#), [131](#), [132](#), [135](#),
[137](#), [166](#), [179](#), [181](#), [184](#), [185](#), [188](#),
[190](#), [192](#), [194](#), [196](#), [198](#), [200](#)
- GeomSketchMarkRect
 (GeomSketchMarkCircle), [107](#)
- GeomSketchNode (GeomSketchEdge), [89](#)
- GeomSketchPath, [7](#), [9](#), [10](#), [12](#), [25](#), [27](#), [29](#), [31](#),
[33](#), [35](#), [36](#), [38](#), [40](#), [42](#), [43](#), [45](#), [48](#), [49](#),
[51](#), [53](#), [55](#), [57](#), [58](#), [60](#), [62](#), [64](#), [66](#), [69](#),
[71](#), [73](#), [75](#), [77](#), [80](#), [83](#), [84](#), [86](#), [88](#), [90](#),
[93](#), [96](#), [98](#), [100](#), [102](#), [104](#), [106](#), [109](#),
[111](#), [112](#), [115](#), [117](#), [119](#), [122](#), [123](#),
[125](#), [127](#), [129](#), [131](#), [132](#), [135](#), [137](#),
[166](#), [179](#), [181](#), [184](#), [185](#), [188](#), [190](#),
[192](#), [194](#), [196](#), [198](#), [200](#)
- GeomSketchPie (StatSketchPie), [186](#)
- GeomSketchPoint, [7](#), [9](#), [10](#), [12](#), [25](#), [27](#), [29](#), [31](#),
[33](#), [35](#), [36](#), [38](#), [40](#), [42](#), [43](#), [45](#), [48](#), [49](#),
[51](#), [53](#), [55](#), [57](#), [58](#), [60](#), [62](#), [64](#), [66](#), [69](#),
[71](#), [73](#), [75](#), [77](#), [80](#), [83](#), [84](#), [86](#), [88](#), [90](#),
[93](#), [96](#), [98](#), [100](#), [102](#), [104](#), [106](#), [109](#),
[111](#), [113](#), [114](#), [117](#), [119](#), [122](#), [123](#),
[125](#), [127](#), [129](#), [131](#), [132](#), [135](#), [137](#),
[166](#), [179](#), [181](#), [184](#), [185](#), [188](#), [190](#),
[192](#), [194](#), [196](#), [198](#), [200](#)
- GeomSketchPointrange
 (GeomSketchLinerange), [102](#)
- GeomSketchPolygon, [7](#), [9](#), [10](#), [12](#), [25](#), [27](#), [29](#),
[31](#), [33](#), [35](#), [36](#), [38](#), [40](#), [42](#), [43](#), [45](#), [48](#),
[49](#), [51](#), [53](#), [55](#), [57](#), [58](#), [60](#), [62](#), [64](#), [66](#),
[69](#), [71](#), [73](#), [75](#), [77](#), [80](#), [83](#), [84](#), [86](#), [88](#),
[90](#), [93](#), [96](#), [98](#), [100](#), [102](#), [104](#), [106](#),
[109](#), [111](#), [113](#), [115](#), [116](#), [119](#), [122](#),
[123](#), [125](#), [127](#), [129](#), [131](#), [132](#), [135](#),
[137](#), [166](#), [179](#), [181](#), [184](#), [185](#), [188](#),
[190](#), [192](#), [194](#), [196](#), [198](#), [200](#)
- GeomSketchPyramid (StatSketchPyramid),
[188](#)
- GeomSketchRadar (StatSketchRadar), [190](#)
- GeomSketchRect, [7](#), [9](#), [10](#), [12](#), [25](#), [27](#), [29](#), [31](#),
[33](#), [35](#), [36](#), [38](#), [40](#), [42](#), [44](#), [45](#), [48](#), [49](#),
[51](#), [53](#), [55](#), [57](#), [58](#), [60](#), [62](#), [64](#), [66](#), [69](#),
[71](#), [73](#), [75](#), [77](#), [80](#), [83](#), [84](#), [86](#), [88](#), [90](#),
[93](#), [96](#), [98](#), [100](#), [102](#), [104](#), [106](#), [109](#),
[111](#), [113](#), [115](#), [117](#), [119](#), [122](#), [123](#),
[125](#), [127](#), [129](#), [131](#), [132](#), [135](#), [137](#),
[166](#), [179](#), [181](#), [184](#), [185](#), [188](#), [190](#),
[192](#), [194](#), [196](#), [198](#), [200](#)
- GeomSketchRibbon, [7](#), [9](#), [10](#), [12](#), [25](#), [27](#), [29](#),
[31](#), [33](#), [35](#), [36](#), [38](#), [40](#), [42](#), [44](#), [45](#), [48](#),
[49](#), [51](#), [53](#), [55](#), [57](#), [58](#), [60](#), [62](#), [64](#), [66](#),
[69](#), [71](#), [73](#), [75](#), [77](#), [80](#), [83](#), [84](#), [86](#), [88](#),
[90](#), [93](#), [96](#), [98](#), [100](#), [102](#), [104](#), [106](#),
[109](#), [111](#), [113](#), [115](#), [117](#), [119](#), [120](#),
[123](#), [125](#), [127](#), [129](#), [131](#), [132](#), [135](#),
[137](#), [166](#), [179](#), [181](#), [184](#), [185](#), [188](#),
[190](#), [192](#), [194](#), [196](#), [198](#), [200](#)
- GeomSketchRidgeline
 (StatSketchDensityRidges), [182](#)
- GeomSketchRug, [7](#), [9](#), [10](#), [12](#), [25](#), [27](#), [29](#), [31](#),
[33](#), [35](#), [36](#), [38](#), [40](#), [42](#), [44](#), [45](#), [48](#), [49](#),
[51](#), [53](#), [55](#), [57](#), [58](#), [60](#), [62](#), [64](#), [66](#), [69](#),
[71](#), [73](#), [75](#), [77](#), [80](#), [83](#), [84](#), [86](#), [88](#), [90](#),
[93](#), [96](#), [98](#), [100](#), [102](#), [104](#), [106](#), [109](#),
[111](#), [113](#), [115](#), [117](#), [119](#), [122](#), [122](#),
[125](#), [127](#), [129](#), [131](#), [132](#), [135](#), [137](#),
[166](#), [179](#), [181](#), [184](#), [185](#), [188](#), [190](#),
[192](#), [194](#), [196](#), [198](#), [200](#)
- GeomSketchSegment, [7](#), [9](#), [10](#), [12](#), [25](#), [27](#), [29](#),
[31](#), [33](#), [35](#), [36](#), [38](#), [40](#), [42](#), [44](#), [45](#), [48](#),

- 49, 51, 53, 55, 57, 58, 60, 62, 64, 66,
69, 71, 73, 75, 77, 80, 83, 84, 86, 88,
90, 93, 96, 98, 100, 102, 104, 106,
109, 111, 113, 115, 117, 119, 122,
123, 124, 127, 129, 131, 132, 135,
137, 166, 179, 181, 184, 185, 188,
190, 192, 194, 196, 198, 200
- GeomSketchSfPolygon, 7, 9, 10, 12, 25, 27,
29, 31, 33, 35, 36, 38, 40, 42, 44, 45,
48, 49, 51, 53, 55, 57, 58, 60, 62, 64,
66, 69, 71, 73, 75, 77, 80, 83, 84, 86,
88, 90, 93, 96, 98, 100, 102, 104,
106, 109, 111, 113, 115, 117, 119,
122, 123, 125, 126, 129, 131, 132,
135, 137, 166, 179, 181, 184, 185,
188, 190, 192, 194, 196, 198, 200
- GeomSketchShade (GeomSketchEngrave), 93
- GeomSketchSlope, 7, 9, 10, 12, 25, 27, 30, 31,
33, 35, 36, 38, 40, 42, 44, 45, 48, 49,
51, 53, 55, 57, 58, 60, 62, 64, 66, 69,
71, 73, 75, 77, 80, 83, 84, 86, 88, 90,
93, 96, 98, 100, 102, 104, 106, 109,
111, 113, 115, 117, 119, 122, 123,
125, 127, 128, 131, 132, 135, 137,
166, 179, 181, 184, 185, 188, 190,
192, 194, 196, 198, 200
- GeomSketchSmooth, 7, 9, 10, 12, 25, 27, 30,
31, 33, 35, 36, 38, 40, 42, 44, 45, 48,
49, 51, 53, 55, 57, 58, 60, 62, 64, 66,
69, 71, 73, 75, 77, 80, 83, 84, 86, 88,
90, 93, 96, 98, 100, 102, 104, 106,
109, 111, 113, 115, 117, 119, 122,
123, 125, 127, 129, 129, 132, 135,
137, 166, 179, 181, 184, 185, 188,
190, 192, 194, 196, 198, 200
- GeomSketchSpoke, 7, 9, 10, 12, 25, 27, 30, 31,
33, 35, 36, 38, 40, 42, 44, 45, 48, 49,
51, 53, 55, 57, 58, 60, 62, 64, 66, 69,
71, 73, 75, 77, 80, 83, 84, 86, 88, 90,
93, 96, 98, 100, 102, 104, 106, 109,
111, 113, 115, 117, 119, 122, 123,
125, 127, 129, 131, 131, 135, 137,
166, 179, 181, 184, 185, 188, 190,
192, 194, 196, 198, 200
- GeomSketchStep (GeomSketchSegment), 124
- GeomSketchTextRepel, 7, 9, 10, 12, 25, 27,
30, 31, 33, 35, 36, 38, 40, 42, 44, 45,
48, 49, 51, 53, 55, 57, 58, 60, 62, 64,
66, 69, 71, 73, 75, 77, 80, 83, 84, 86,
88, 90, 93, 96, 98, 100, 102, 104,
106, 109, 111, 113, 115, 117, 119,
122, 123, 125, 127, 129, 131, 132,
133, 137, 166, 179, 181, 184, 185,
188, 190, 192, 194, 196, 198, 200
- GeomSketchTile (GeomSketchRect), 117
- GeomSketchTreemap (StatSketchTreemap),
194
- GeomSketchViolin, 7, 9, 10, 12, 25, 27, 30,
31, 33, 35, 36, 38, 40, 42, 44, 45, 48,
49, 51, 53, 55, 57, 58, 60, 62, 64, 66,
69, 71, 73, 75, 77, 80, 83, 84, 86, 88,
90, 93, 96, 98, 100, 102, 104, 106,
109, 111, 113, 115, 117, 119, 122,
123, 125, 127, 129, 131, 132, 135,
135, 166, 179, 181, 184, 185, 188,
190, 192, 194, 196, 198, 200
- GeomSketchVline (GeomSketchAbline), 65
- GeomSketchWaterfall
(StatSketchWaterfall), 198
- ggplot2::aes(), 29, 34, 39, 41, 43, 45, 47,
58, 64, 68, 70, 72, 74, 76, 79, 82, 84,
86, 87, 90, 92, 95, 97, 99, 101, 105,
108, 110, 112, 116, 119, 121, 123,
125, 126, 128, 130, 132, 136, 179,
181, 183, 185, 187, 189, 191, 193,
195, 197, 199
- ggplot2::annotate(), 6, 8, 9
- ggplot2::continuous_scale(), 151, 152,
154
- ggplot2::coord_cartesian(), 15, 16
- ggplot2::coord_equal(), 91, 109, 194, 196
- ggplot2::coord_flip(), 76
- ggplot2::coord_polar(), 17
- ggplot2::discrete_scale(), 150, 153
- ggplot2::element_line(), 19
- ggplot2::element_rect(), 19, 20
- ggplot2::geom_abline(), 65
- ggplot2::geom_area(), 120
- ggplot2::geom_bin_2d(), 28
- ggplot2::geom_boxplot(), 69
- ggplot2::geom_contour(), 34
- ggplot2::geom_contour_filled(), 80
- ggplot2::geom_count(), 35
- ggplot2::geom_curve(), 83
- ggplot2::geom_density(), 39, 40
- ggplot2::geom_density_2d(), 40

ggplot2::geom_density_2d_filled(), 80
 ggplot2::geom_dotplot(), 85
 ggplot2::geom_freqpoly(), 46
 ggplot2::geom_function(), 44
 ggplot2::geom_hex(), 98
 ggplot2::geom_histogram(), 46
 ggplot2::geom_hline(), 65
 ggplot2::geom_jitter(), 48
 ggplot2::geom_label(), 63
 ggplot2::geom_linerange(), 102
 ggplot2::geom_polygon(), 116
 ggplot2::geom_qq(), 55
 ggplot2::geom_qq_line(), 55
 ggplot2::geom_quantile(), 57
 ggplot2::geom_raster(), 93
 ggplot2::geom_ribbon(), 120
 ggplot2::geom_rug(), 122
 ggplot2::geom_segment(), 124
 ggplot2::geom_sf(), 126
 ggplot2::geom_smooth(), 129
 ggplot2::geom_spoke(), 131
 ggplot2::geom_step(), 124
 ggplot2::geom_text(), 63, 195
 ggplot2::geom_tile(), 117
 ggplot2::geom_violin(), 135
 ggplot2::geom_vline(), 65
 ggplot2::ggsave(), 138
 ggplot2::last_plot(), 138
 ggplot2::layer(), 64
 ggplot2::position_jitter(), 49
 ggplot2::scale_colour_gradientn(), 153
 ggplot2::scale_size_area(), 35
 ggplot2::stat_bin(), 47
 ggplot2::stat_bin_2d(), 28
 ggplot2::stat_bin_hex(), 98
 ggplot2::stat_boxplot(), 69
 ggplot2::stat_contour(), 34
 ggplot2::stat_density(), 39
 ggplot2::stat_density_2d(), 40
 ggplot2::stat_ecdf(), 42, 43
 ggplot2::stat_function(), 44
 ggplot2::stat_qq(), 55
 ggplot2::stat_quantile(), 57, 58
 ggplot2::stat_smooth(), 129, 130
 ggplot2::stat_sum(), 35
 ggplot2::stat_ydensity(), 135, 136
 ggplot2::theme(), 19, 20
 ggplot2::theme_bw(), 202
 ggplot2::theme_void(), 186
 ggsketch_check_fonts, 137
 ggsketch_check_fonts(), 16, 18, 20, 63,
 139, 144, 151–154, 168, 203, 204
 ggsketch_save, 138
 ggsketch_save(), 16, 18, 20, 138, 144,
 151–154, 168, 204
 grid::gpar(), 173, 174
 grid::gTree(), 173, 174
 hatchure_fill, 139
 hatchure_fill(), 13, 18, 22, 23, 140, 141,
 145, 147–149, 157, 164, 165, 178,
 201, 202, 204–207
 hatchure_fill_multi, 140
 hatchure_fill_multi(), 13, 18, 21–23, 140,
 141, 145, 147–149, 157, 164, 165,
 178, 201, 202, 204–207
 leader_path, 141
 leader_path(), 13, 18, 22, 23, 140, 141, 145,
 147–149, 157, 164, 165, 178, 201,
 202, 204–207
 paper_grain, 142
 paper_grain(), 21, 143, 168, 206, 207
 paper_primitives, 142
 paper_primitives(), 21, 142, 143, 168
 paper_spec, 143
 paper_spec(), 21, 142, 143, 168
 quantreg::rq(), 58
 register_sketch_font, 144
 register_sketch_font(), 16, 18, 20, 138,
 139, 151–154, 168, 204
 repel_layout, 145
 repel_layout(), 13, 18, 22, 23, 133, 140,
 141, 147–149, 157, 164, 165, 171,
 178, 201, 202, 204–207
 rough_arc, 146
 rough_arc(), 13, 18, 22, 23, 140, 141, 145,
 148, 149, 157, 164, 165, 178, 201,
 202, 204–207
 rough_bezier, 147
 rough_bezier(), 13, 18, 22, 23, 140, 141,
 145, 147–149, 157, 164, 165, 178,
 201, 202, 204–207
 rough_ellipse, 148

- `rough_ellipse()`, [13](#), [18](#), [22](#), [23](#), [140](#), [141](#),
[145–149](#), [157](#), [164](#), [165](#), [178](#), [201](#),
[202](#), [204–207](#)
- `roughen_polyline`, [149](#)
- `roughen_polyline()`, [13](#), [18](#), [22](#), [23](#), [140](#),
[141](#), [145](#), [147](#), [148](#), [157](#), [164](#), [165](#),
[178](#), [201](#), [202](#), [204–207](#)
- `scale_color_sketch` (`scale_sketch`), [153](#)
- `scale_color_sketch_c` (`scale_sketch`), [153](#)
- `scale_colour_sketch` (`scale_sketch`), [153](#)
- `scale_colour_sketch()`, [26](#), [53](#)
- `scale_colour_sketch_c` (`scale_sketch`),
[153](#)
- `scale_engrave` (`scale_tone_continuous`),
[154](#)
- `scale_fill_sketch` (`scale_sketch`), [153](#)
- `scale_fill_sketch()`, [25](#), [33](#), [59](#), [61](#)
- `scale_fill_sketch_c` (`scale_sketch`), [153](#)
- `scale_medium_discrete`, [149](#)
- `scale_medium_discrete()`, [101](#), [113](#), [167](#)
- `scale_pressure`
(`scale_pressure_continuous`),
[150](#)
- `scale_pressure_continuous`, [150](#)
- `scale_pressure_continuous()`, [16](#), [18](#), [20](#),
[113](#), [138](#), [139](#), [144](#), [152–154](#), [168](#),
[204](#)
- `scale_roughness`
(`scale_roughness_continuous`),
[152](#)
- `scale_roughness_continuous`, [152](#)
- `scale_roughness_continuous()`, [16](#), [18](#), [20](#),
[29](#), [43](#), [47](#), [77](#), [79](#), [84](#), [92](#), [99](#), [115](#),
[119](#), [125](#), [132](#), [138](#), [139](#), [144](#), [151](#),
[153](#), [154](#), [168](#), [204](#)
- `scale_sketch`, [16](#), [18](#), [20](#), [138](#), [139](#), [144](#), [151](#),
[152](#), [153](#), [154](#), [168](#), [204](#)
- `scale_tone_continuous`, [154](#)
- `scale_tone_continuous()`, [16](#), [18](#), [20](#), [138](#),
[139](#), [144](#), [151–153](#), [168](#), [204](#)
- `sf::st_transform()`, [127](#)
- `sketch_arrow_grob`, [155](#)
- `sketch_arrow_grob()`, [158](#), [159](#), [161–163](#),
[169](#), [171–174](#), [177](#)
- `sketch_arrowheads`, [156](#)
- `sketch_arrowheads()`, [13](#), [18](#), [22](#), [23](#), [68](#), [74](#),
[140](#), [141](#), [145](#), [147–149](#), [156](#), [159](#),
[164](#), [165](#), [178](#), [201](#), [202](#), [204–207](#)
- `sketch_band_grob`, [157](#)
- `sketch_band_grob()`, [156](#), [159](#), [161–163](#),
[169](#), [171–174](#), [177](#)
- `sketch_callout_grob`, [158](#)
- `sketch_callout_grob()`, [156](#), [158](#), [161–163](#),
[169](#), [171–174](#), [177](#)
- `sketch_dotplot_grob`, [160](#)
- `sketch_dotplot_grob()`, [156](#), [158](#), [159](#), [162](#),
[163](#), [169](#), [171–174](#), [177](#)
- `sketch_ellipse_grob`, [161](#)
- `sketch_ellipse_grob()`, [156](#), [158](#), [159](#), [161](#),
[163](#), [169](#), [171–174](#), [177](#)
- `sketch_engrave_grob`, [162](#)
- `sketch_engrave_grob()`, [156](#), [158](#), [159](#), [161](#),
[162](#), [169](#), [171–174](#), [177](#)
- `sketch_fill`, [163](#)
- `sketch_fill()`, [13](#), [18](#), [22](#), [23](#), [140](#), [141](#), [145](#),
[147–149](#), [157](#), [164](#), [165](#), [178](#), [201](#),
[202](#), [204–207](#)
- `sketch_fill_multi`, [164](#)
- `sketch_fill_multi()`, [13](#), [18](#), [22](#), [23](#), [140](#),
[141](#), [145](#), [147–149](#), [157](#), [164](#), [178](#),
[201](#), [202](#), [204–207](#)
- `sketch_graph`, [165](#)
- `sketch_graph()`, [8–10](#), [12](#), [25](#), [27](#), [30](#), [31](#), [33](#),
[35](#), [37](#), [38](#), [40](#), [42](#), [44](#), [45](#), [48](#), [49](#), [51](#),
[53](#), [55](#), [57](#), [58](#), [60](#), [62](#), [64](#), [67](#), [69](#), [71](#),
[73](#), [75](#), [77](#), [80](#), [83](#), [85](#), [87–91](#), [93](#), [96](#),
[98](#), [100](#), [102](#), [104](#), [106](#), [109](#), [111](#),
[113](#), [115](#), [117](#), [119](#), [122](#), [123](#), [126](#),
[127](#), [129](#), [131](#), [133](#), [135](#), [137](#), [180](#),
[182](#), [184](#), [186](#), [188](#), [190](#), [192](#), [194](#),
[196](#), [198](#), [200](#)
- `sketch_media`, [167](#)
- `sketch_media()`, [101](#), [112](#), [125](#), [149](#), [150](#)
- `sketch_palette`, [167](#)
- `sketch_palette()`, [16](#), [18](#), [20](#), [138](#), [139](#), [144](#),
[151–154](#), [204](#)
- `sketch_papers`, [168](#)
- `sketch_papers()`, [20](#), [21](#), [142](#), [143](#), [203](#)
- `sketch_path_grob`, [169](#)
- `sketch_path_grob()`, [156](#), [158](#), [159](#),
[161–163](#), [171–174](#), [177](#)
- `sketch_polygon_grob`, [170](#)
- `sketch_polygon_grob()`, [156](#), [158](#), [159](#),
[161–163](#), [169](#), [172–174](#), [177](#)
- `sketch_repel_grob`, [171](#)
- `sketch_repel_grob()`, [156](#), [158](#), [159](#),

- 161–163, 169, 171, 173, 174, 177*
- `sketch_spray_grob`, 172
- `sketch_spray_grob()`, *101, 113, 156, 158, 159, 161–163, 169, 171, 172, 174, 177*
- `sketch_stroke_grob`, 173
- `sketch_stroke_grob()`, *156, 158, 159, 161–163, 169, 171–173, 177*
- `sketch_style`, 175
- `sketch_style()`, 176
- `sketch_styles`, 176
- `sketch_styles()`, 175
- `sketch_wedge_grob`, 176
- `sketch_wedge_grob()`, *156, 158, 159, 161–163, 169, 171–174*
- `spray_scatter`, 177
- `spray_scatter()`, *13, 18, 22, 23, 140, 141, 145, 147–149, 157, 164, 165, 172, 173, 201, 202, 204–207*
- `stats::density()`, 183
- `stats::dist()`, 38
- `stats::hclust()`, 37, 38
- `stats::qnorm`, 56
- `StatSketchBeeswarm`, *7, 9, 10, 12, 25, 27, 30, 31, 33, 35, 36, 38, 40, 42, 44, 45, 48, 49, 51, 53, 55, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 125, 127, 129, 131, 132, 135, 137, 166, 178, 181, 184, 186, 188, 190, 192, 194, 196, 198, 200*
- `StatSketchCalendar`, *7, 9, 10, 12, 25, 27, 30, 31, 33, 35, 36, 38, 40, 42, 44, 45, 48, 49, 51, 53, 55, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 125, 127, 129, 131, 132, 135, 137, 166, 180, 180, 184, 186, 188, 190, 192, 194, 196, 198, 200*
- `StatSketchDensityRidges`, *7, 9, 10, 12, 25, 27, 30, 31, 33, 35, 36, 38, 40, 42, 44, 45, 48, 49, 51, 53, 55, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 125, 127, 129, 131, 132, 135, 137, 166, 180, 181, 184, 186, 188, 190, 192, 193, 196, 198, 200*
- `StatSketchFunnel`, *7, 9, 10, 12, 25, 27, 30, 31, 33, 35, 36, 38, 40, 42, 44, 45, 48, 49, 51, 53, 55, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 125, 127, 129, 131, 132, 135, 137, 166, 180, 181, 184, 184, 188, 190, 192, 194, 196, 198, 200*
- `StatSketchPie`, *8–10, 12, 25, 27, 30, 31, 33, 35, 37, 38, 40, 42, 44, 45, 48, 49, 51, 53, 55, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 125, 127, 129, 131, 132, 135, 137, 166, 180, 181, 184, 186, 186, 190, 192, 194, 196, 198, 200*
- `StatSketchPyramid`, *8–10, 12, 25, 27, 30, 31, 33, 35, 37, 38, 40, 42, 44, 45, 48, 49, 51, 53, 55, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 125, 127, 129, 131, 132, 135, 137, 166, 180, 181, 184, 186, 188, 188, 192, 194, 196, 198, 200*
- `StatSketchRadar`, *8–10, 12, 25, 27, 30, 31, 33, 35, 37, 38, 40, 42, 44, 45, 48, 49, 51, 53, 55, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 125, 127, 129, 131, 133, 135, 137, 166, 180, 181, 184, 186, 188, 190, 190, 194, 196, 198, 200*
- `StatSketchStream`, *8–10, 12, 25, 27, 30, 31, 33, 35, 37, 38, 40, 42, 44, 45, 48, 49, 51, 53, 55, 57, 58, 60, 62, 64, 66, 69, 71, 73, 75, 77, 80, 83, 84, 86, 88, 90, 93, 96, 98, 100, 102, 104, 106, 109, 111, 113, 115, 117, 119, 122, 123, 125, 127, 129, 131, 133, 135, 137, 166, 180, 181, 184, 186, 188, 190, 192, 192, 193, 196, 198, 200*

- StatSketchTreemap, [8–10](#), [12](#), [25](#), [27](#), [30](#), [31](#),
[33](#), [35](#), [37](#), [38](#), [40](#), [42](#), [44](#), [45](#), [48](#), [49](#),
[51](#), [53](#), [55](#), [57](#), [58](#), [60](#), [62](#), [64](#), [66](#), [69](#),
[71](#), [73](#), [75](#), [77](#), [80](#), [83](#), [84](#), [86](#), [88](#), [90](#),
[93](#), [96](#), [98](#), [100](#), [102](#), [104](#), [106](#), [109](#),
[111](#), [113](#), [115](#), [117](#), [119](#), [122](#), [123](#),
[125](#), [127](#), [129](#), [131](#), [133](#), [135](#), [137](#),
[166](#), [180](#), [181](#), [184](#), [186](#), [188](#), [190](#),
[192](#), [194](#), [194](#), [198](#), [200](#)
- StatSketchWaffle, [8–10](#), [12](#), [25](#), [27](#), [30](#), [31](#),
[33](#), [35](#), [37](#), [38](#), [40](#), [42](#), [44](#), [45](#), [48](#), [49](#),
[51](#), [53](#), [55](#), [57](#), [58](#), [60](#), [62](#), [64](#), [66](#), [69](#),
[71](#), [73](#), [75](#), [77](#), [80](#), [83](#), [84](#), [86](#), [88](#), [90](#),
[93](#), [96](#), [98](#), [100](#), [102](#), [104](#), [106](#), [109](#),
[111](#), [113](#), [115](#), [117](#), [119](#), [122](#), [123](#),
[125](#), [127](#), [129](#), [131](#), [133](#), [135](#), [137](#),
[166](#), [180](#), [181](#), [184](#), [186](#), [188](#), [190](#),
[192](#), [194](#), [196](#), [196](#), [200](#)
- StatSketchWaterfall, [8–10](#), [12](#), [25](#), [27](#), [30](#),
[31](#), [33](#), [35](#), [37](#), [38](#), [40](#), [42](#), [44](#), [45](#), [48](#),
[49](#), [51](#), [53](#), [55](#), [57](#), [58](#), [60](#), [62](#), [64](#), [66](#),
[69](#), [71](#), [73](#), [75](#), [77](#), [80](#), [83](#), [84](#), [86](#), [88](#),
[90](#), [93](#), [96](#), [98](#), [100](#), [102](#), [104](#), [106](#),
[109](#), [111](#), [113](#), [115](#), [117](#), [119](#), [122](#),
[123](#), [125](#), [127](#), [129](#), [131](#), [133](#), [135](#),
[137](#), [166](#), [180](#), [181](#), [184](#), [186](#), [188](#),
[190](#), [192](#), [194](#), [196](#), [198](#), [198](#)
- stroke_profile, [200](#)
- stroke_profile(), [13](#), [18](#), [22](#), [23](#), [140](#), [141](#),
[146–149](#), [157](#), [164](#), [165](#), [178](#), [202](#),
[204–207](#)
- stroke_ribbon, [201](#)
- stroke_ribbon(), [13](#), [18](#), [22](#), [23](#), [101](#), [112](#),
[113](#), [125](#), [140](#), [141](#), [146–149](#), [151](#),
[157](#), [164](#), [165](#), [167](#), [173](#), [174](#), [178](#),
[200](#), [201](#), [204–207](#)
- systemfonts::register_font(), [144](#)
- theme_sketch, [202](#)
- theme_sketch(), [15](#), [16](#), [18](#), [20](#), [68](#), [72](#), [75](#),
[138](#), [139](#), [144](#), [151–154](#), [168](#), [175](#),
[186](#)
- treemap_layout, [204](#)
- treemap_layout(), [13](#), [18](#), [22](#), [23](#), [140](#), [141](#),
[146–149](#), [157](#), [164](#), [165](#), [178](#), [194](#),
[201](#), [202](#), [205–207](#)
- wash_bleed, [205](#)
- wash_bleed(), [13](#), [18](#), [22](#), [23](#), [140](#), [141](#),
[146–149](#), [157](#), [164](#), [165](#), [178](#), [201](#),
[202](#), [204](#), [206](#), [207](#)
- watercolor_wash, [206](#)
- watercolor_wash(), [13](#), [18](#), [22](#), [23](#), [140–142](#),
[146–149](#), [157](#), [164](#), [165](#), [178](#), [201](#),
[202](#), [204](#), [205](#), [207](#)
- watercolor_wash_multi, [207](#)
- watercolor_wash_multi(), [13](#), [18](#), [22](#), [23](#),
[140](#), [141](#), [146–149](#), [157](#), [164](#), [165](#),
[178](#), [201](#), [202](#), [204–206](#)