r42

DATA VISUALIZATION DESIGN

Make informed decisions with data.

The meaning behind data is rarely obvious. Getting from raw numbers to a clear message that stakeholders can act on takes collaboration between subject experts, data engineers, and visualization designers.

r42 is a data visualization design studio. We work with your teams to turn complex datasets into clear, actionable reports, tailored for your audience.

THE LAST MILE

where r42 comes in

The last mile in your data pipeline is where the data meets the audience. Metrics have been collected, cleaned, and analyzed — now you need to make them talk. r42 specializes in this final step, and we go the extra mile: we don't just place data into charts, we design reports that communicate clearly, respect your brand, and are built from the ground up when off-the-shelf tools aren't enough.

Focus on communication
Data visualization is more than choosing the right chart. r42 designs reports that encode your data into formats your audience can actually read and act on. We control how information is layered, labeled, and sequenced, so every section guides the reader toward a clear conclusion, not just a collection of numbers.

Focus on brand
Every report carries your brand. r42 makes sure all visuals follow a consistent theme, color system, and layout, so your reporting feels like a coherent system. And when standard chart types fall short, we build visuals from the ground up using libraries like d3, SveltePlot or Vega/Deneb, giving you full control over how your brand shows up in data.

Focus on technology
Most teams already know their tools. r42 works within your existing stack, whether that's Power BI, Looker Studio, or web-based platforms, and extends it. Certified custom visuals on the Microsoft Marketplace, advanced charting with Deneb, or custom web frameworks when the project goes beyond BI tools: we bring capabilities your stack doesn't offer out of the box.

Focus on process
Data engineers and analysts know the data. Report readers need to act on it. r42 bridges the two, working with the people who prepare the data and the people who use it, so the final output is accurate, clear, and ready for the audience.

Ready to go the extra mile?

Let's talk.

ABOUT

Ralph Spandl founded r42 over 20 years ago as a web agency, building websites for major Canadian brands like CN, Transat, and Laurentian Bank. After years in web development, he moved into data visualization.

For over three years, he worked with Supermetrics, developing a library of custom visualizations for Looker Studio and Power BI.

In 2025, Ralph returned to r42 and dived into Power BI reporting, developing a family of custom visuals now certified and available on the Microsoft Marketplace. Built on a modern web stack, these visuals led him deeper into web-based data visualization, working with frameworks like Svelte, SveltePlot, d3, and Vega.

PORTFOLIO

Power BI
custom visuals

Looker Studio
visualizations

Data report
style guides

Web
platforms

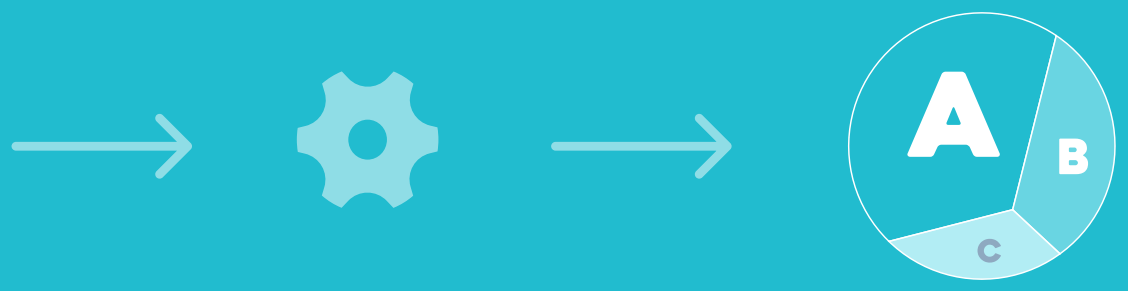
ENCODING DATA

This portfolio covers a wide range of visualizations, from simple scorecards to experimental 3D animations.

What they share: every one is built from a dataset and generated entirely through code. No illustration tools, no manual adjustments, no post-production. When the data changes, the visual updates — no tweaking layouts, adjusting labels, or fixing alignment.

That's the difference between design and process.
Code-driven visuals don't just look right once.
They stay right.

A	50
B	20
C	10



POWER BI

custom visuals

Power BI ships with a fixed set of chart types, and for many reporting needs, they're not enough.

That's why r42 built a new series of custom visuals from the ground up. Designed as a family, they share a consistent look, feel, and interaction model. All are certified and available on the Microsoft Marketplace. They prove that best-practice data visualization is possible even within large enterprise platforms.

If your reporting needs go further, we can build the same for you.

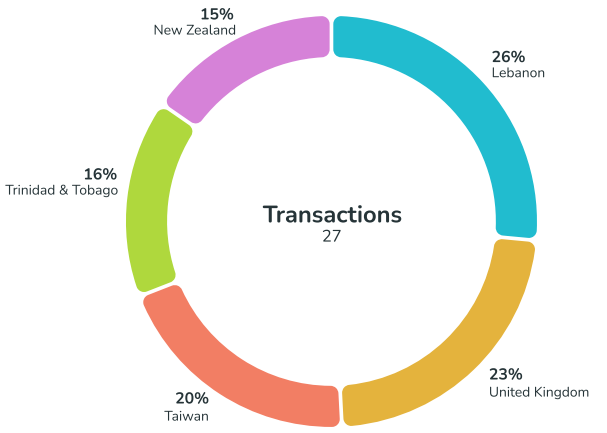
Part of whole

Donut

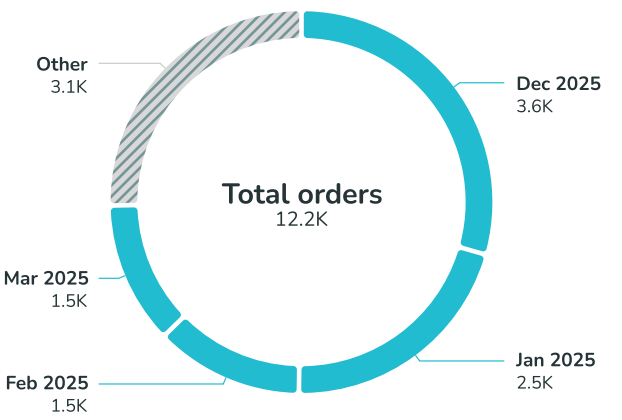
The donut chart is one of the most debated chart types in data visualization. It works best when the number of segments is small and labels are placed directly on each segment rather than in a separate legend.

The r42 donut solves these common challenges: multiple clean options for data label placement and the ability to group small segments with a pattern fill to keep them visually distinct.

explore



Direct data labels and conditional colors offer flexibility in design.



Group small segments with a single click and mark them with a pattern fill.

Small multiples allow report editors to manage multiple donut charts at once.

KPI

42K

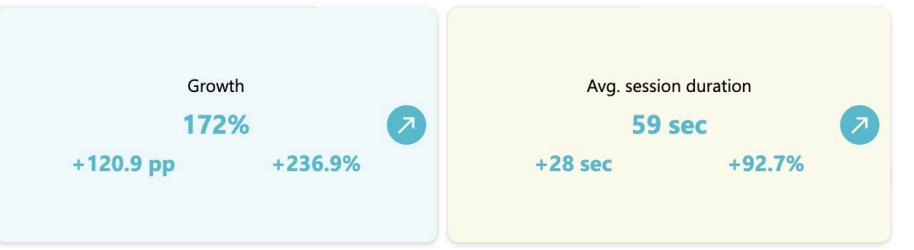
Scorecard

Even simple charts need attention to detail to work well in a dashboard. Scorecards display a single metric and optionally compare it to a target. But a metric is rarely just a number. It may represent a currency, a percentage, or a duration, and it needs to work across languages.

The r42 scorecard handles all of these cases and lets editors assign colors to any element.

explore

Conditional colors allow report editors to highlight metrics based on goals or specific business rules.



The scorecards format metrics as numbers, currency, percentages or duration. The editor can show growth and trend as comparison indicators .

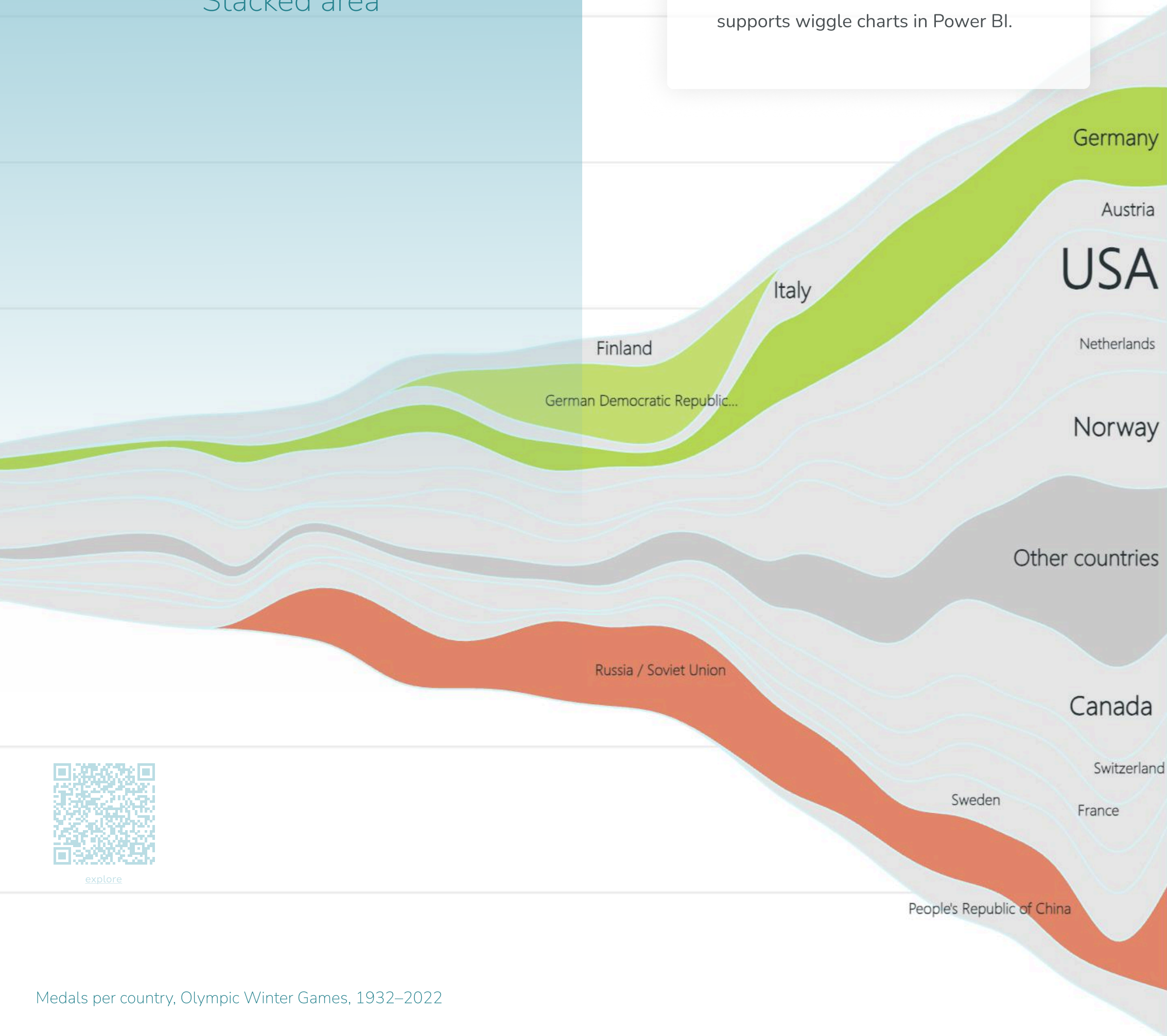
Small multiples allow report editors to manage multiple scorecards at once, without sacrificing flexibilty.

Time series · Part of whole

Stacked area

The stacked area chart is a strong alternative to the stacked bar chart, putting the focus on flow rather than individual data points.

Placing labels within irregular shapes is a common challenge. The r42 stacked area chart solves this and also supports wiggle charts in Power BI.



explore

Medals per country, Olympic Winter Games, 1932–2022

KPI · Part of whole

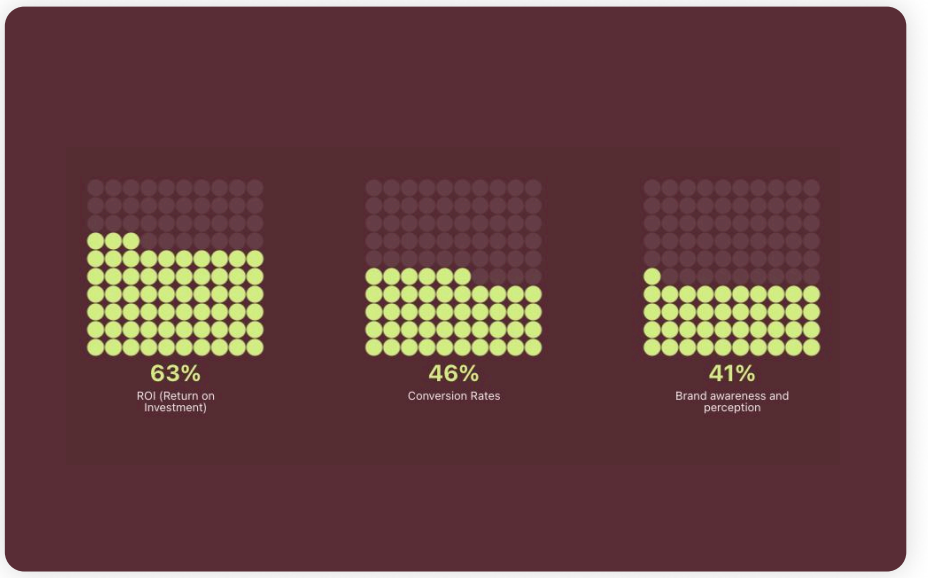
Waffle

The waffle chart turns simple metrics into clear visual statements.

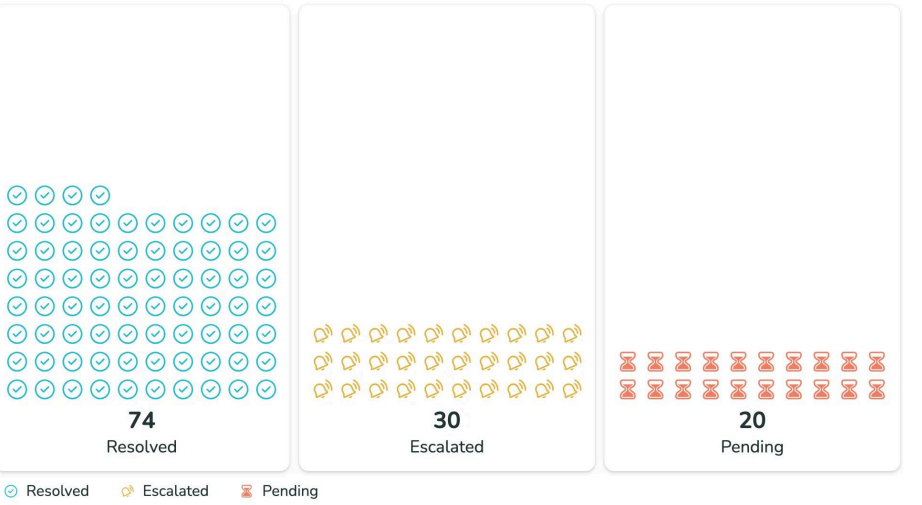
Each square or icon represents a fixed unit or percentage of the whole. Waffle charts work as alternatives to scorecards, donut charts, or stacked bar charts.

Beyond single metrics, they can track progress toward a target or break down a total into categories.

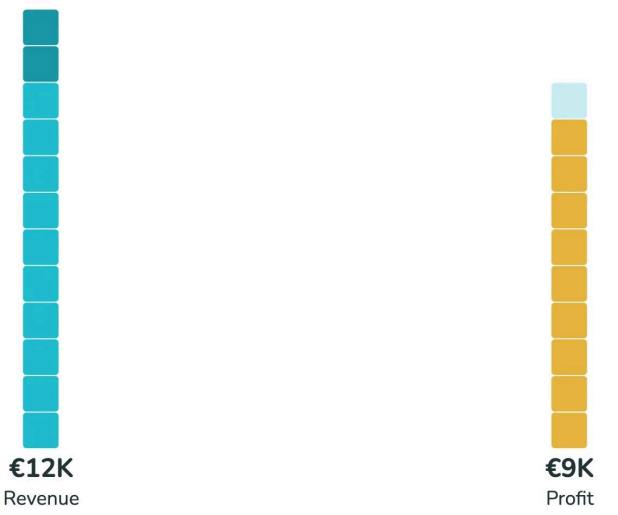
explore



The basic form of a waffle chart. Each dot represents a percentage point, the lighter dots represent the total of 100%.



Squares can be replaced by icons to make the visual more illustrative.



The waffle can be arranged in different layouts. Darker squares show that the metric is above the target.

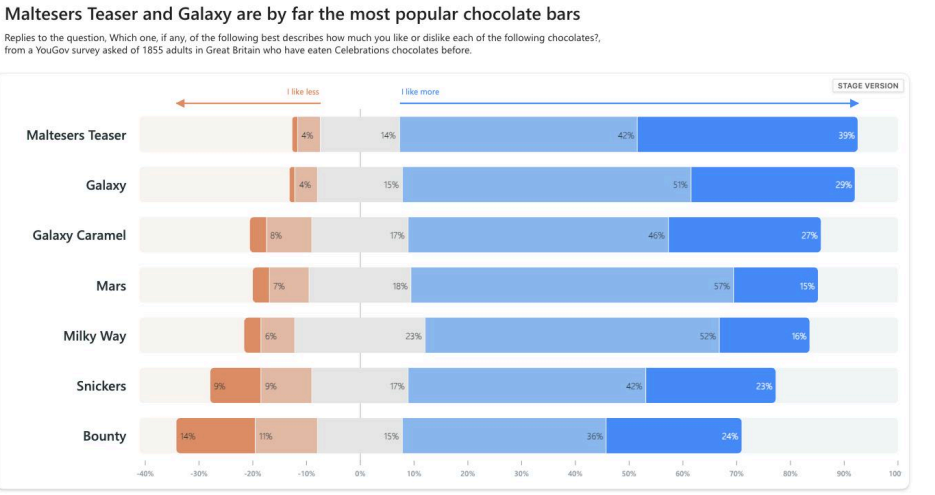
KPI · Part of whole

Likert

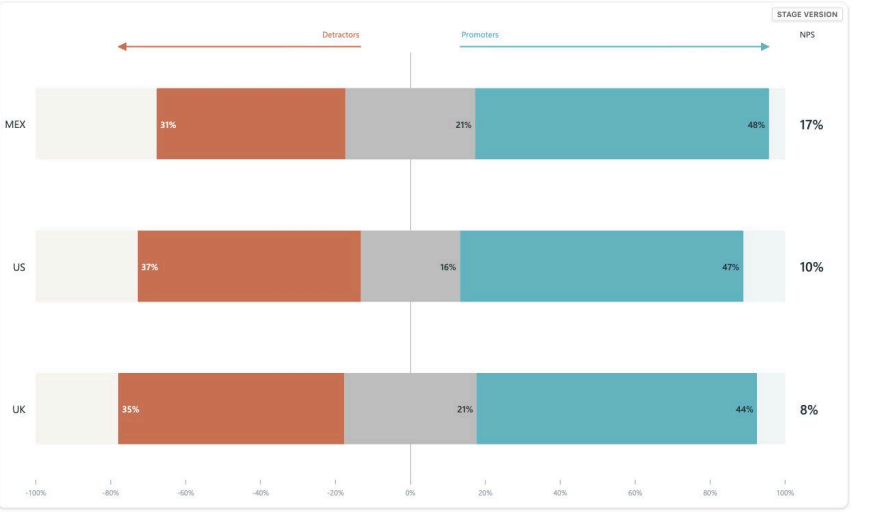
The Likert scale is a standard tool in sentiment analysis, measuring whether respondents lean positive or negative on a topic.

Results appear as stacked bars arranged around a neutral midpoint, sorted by overall rating using methods like NPS, Net score, or Top-2.

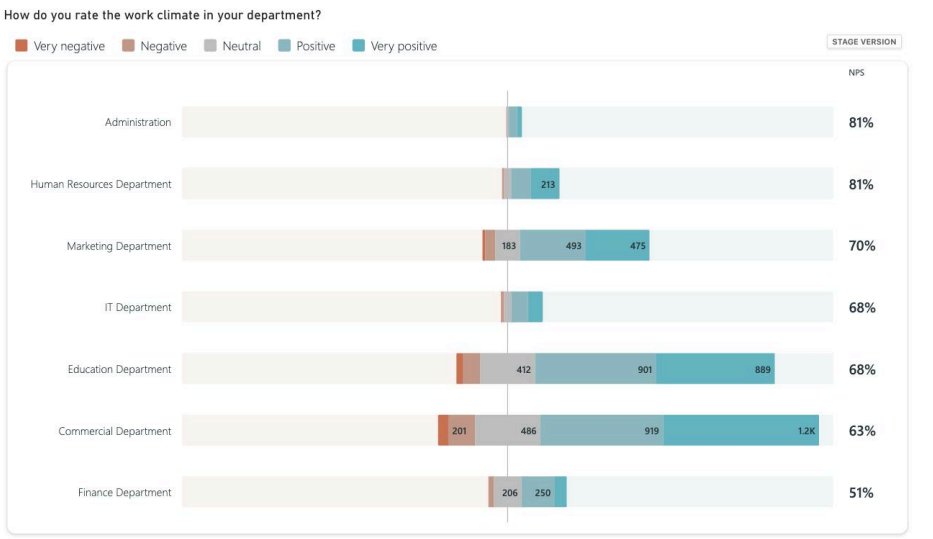
Depending on the audience, the visual can show either the full rating scale or simplified polarity indicators.



What chocolate bars are most popular?

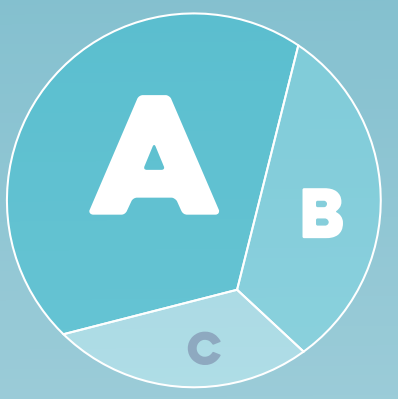


NPS: Are there more detractors than promoters in different markets?



Not all departments show the same level of work climate.

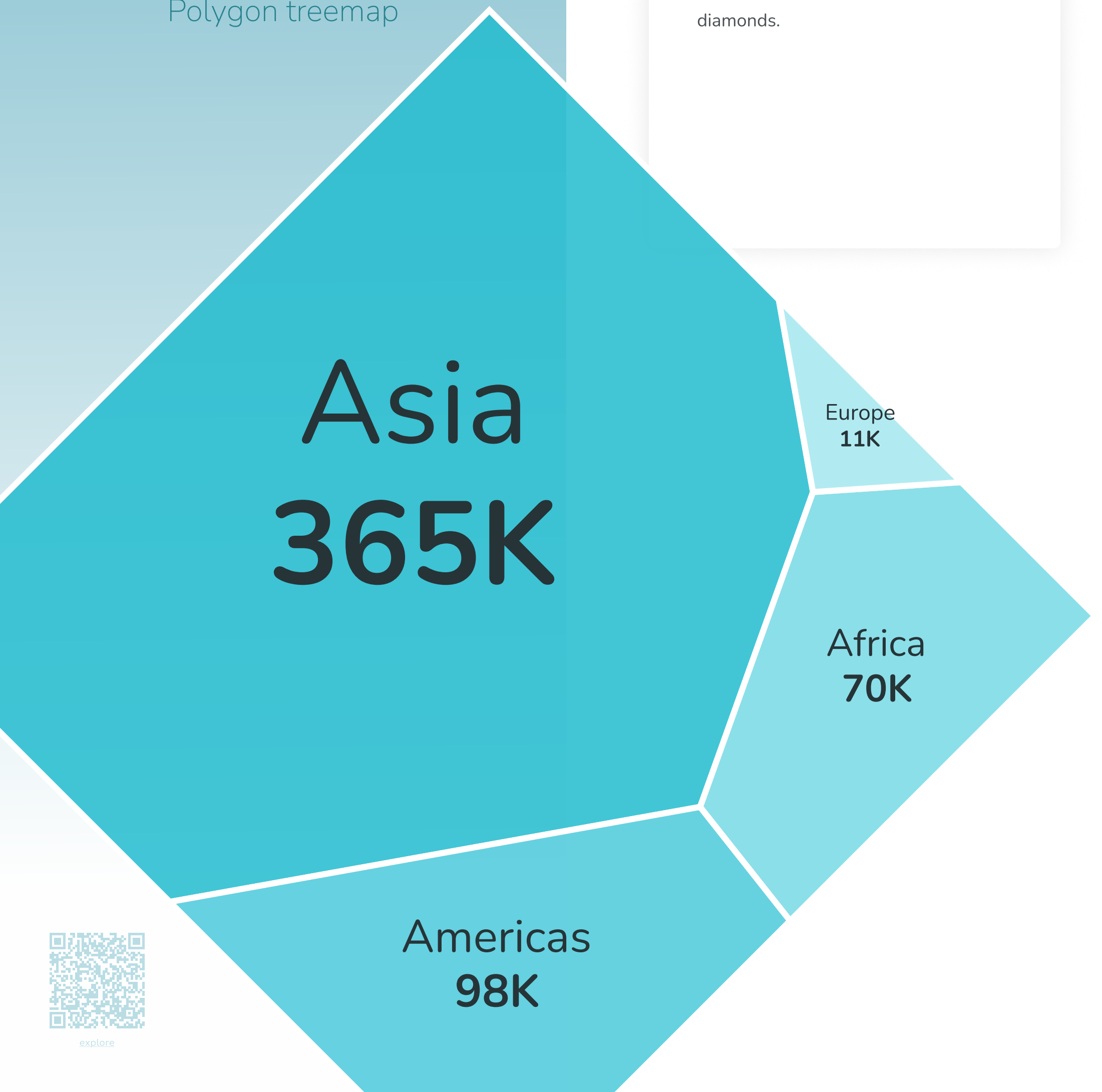
Part of whole



Polygon treemap

Like a donut chart, the Polygon Treemap shows parts of a whole, but handles many more segments across two hierarchy levels.

Its compact polygons, generated through Voronoi tessellation, can be arranged in six container shapes, from circles and triangles to hexagons and diamonds.



explore

KPI · Part of whole

Line graph

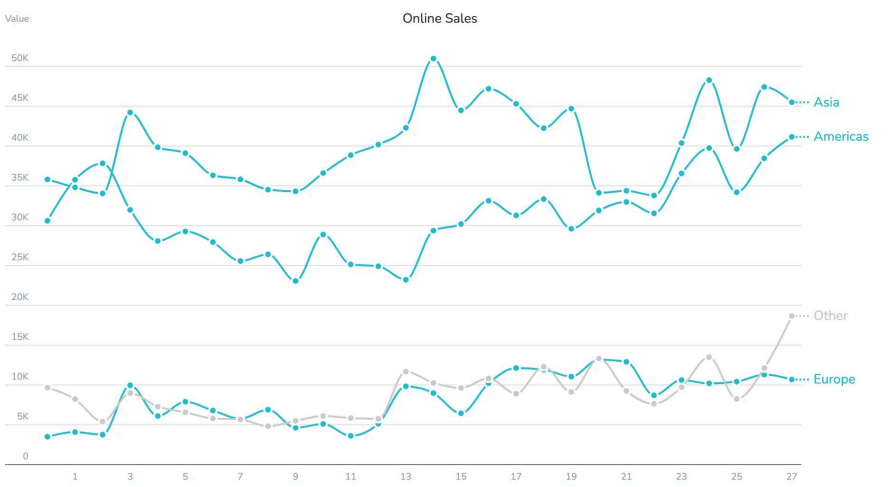
Line graphs are among the most common chart types, but they only work well when every element serves a purpose.

What sets a good line graph apart are its labels: direct dimension labels, clear data labels, a modern date axis, and reduced gridlines help readers understand the data at a glance.

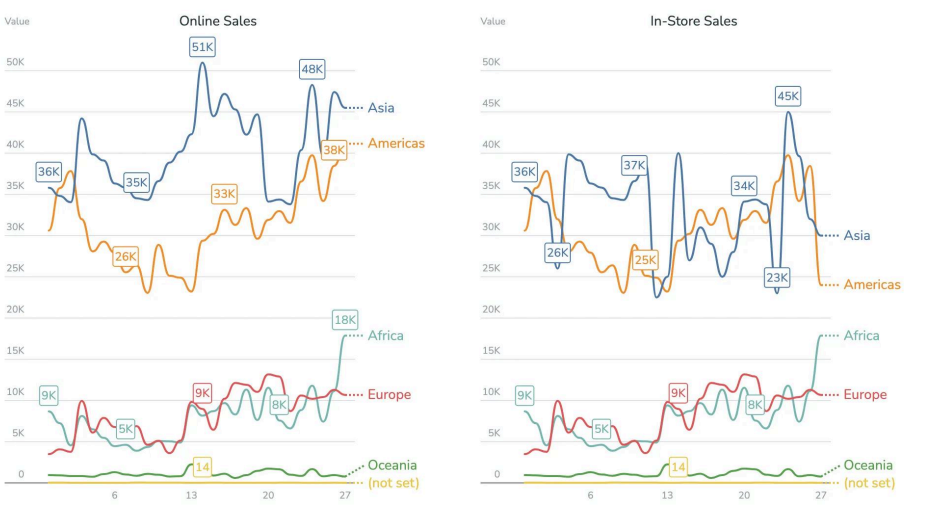
Small multiples that share the same scale make this one of the most versatile chart types in reporting.

explore

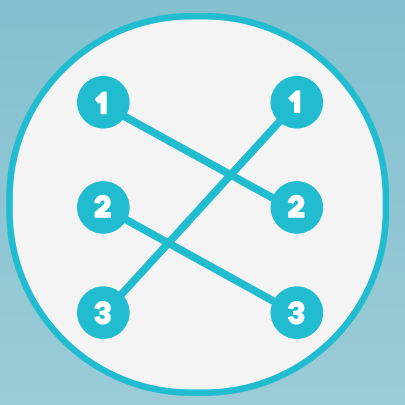
Direct labels, an uncluttered date axis, reduced gridlines, and a slightly smooth line style keep the chart readable without creating artifacts.



Combining smaller segments into a single line keeps the chart uncluttered.



In small multiples, space is limited. Controlling the number of visible data labels prevents the chart from becoming unreadable.



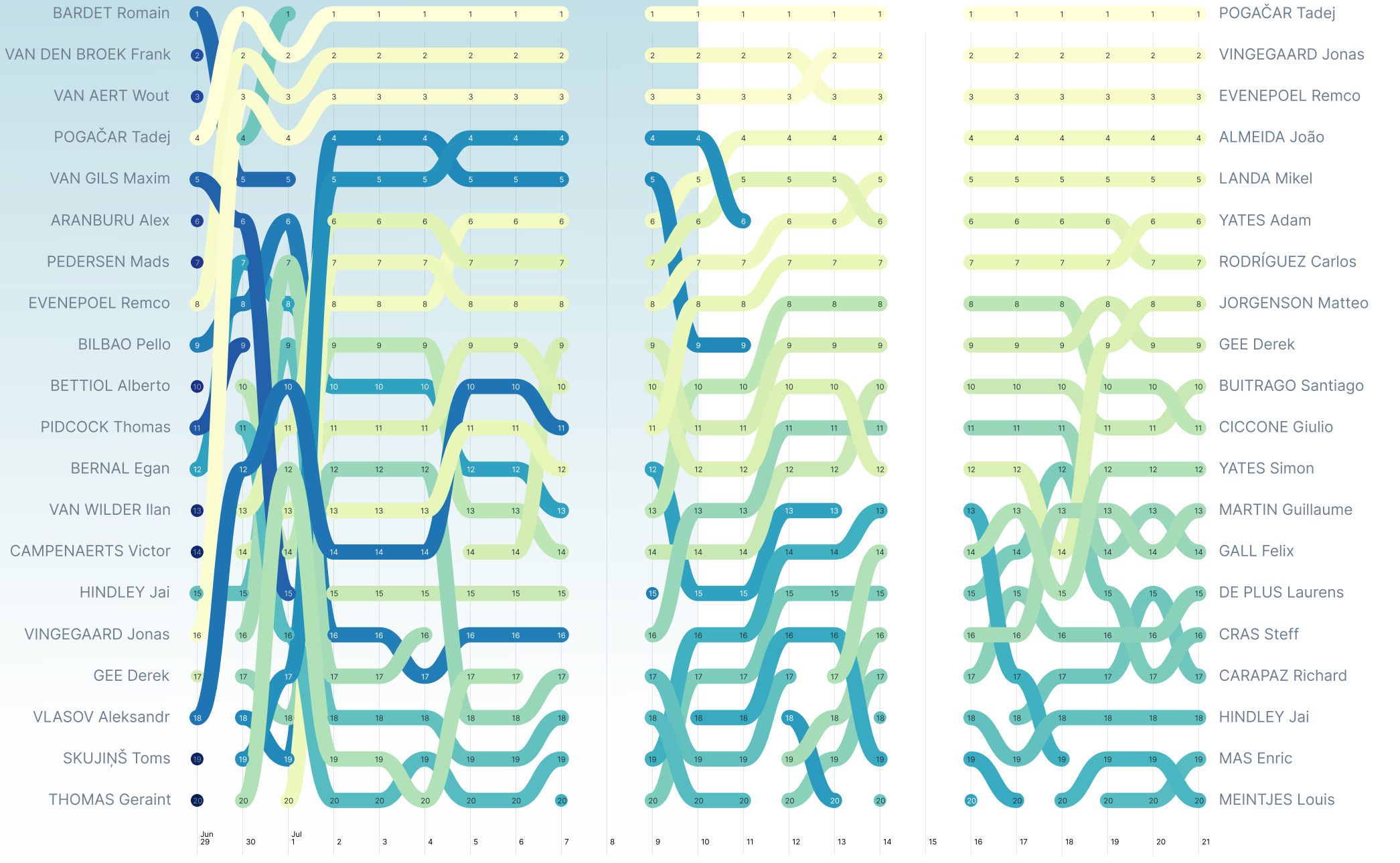
Bump chart

When line graphs have too many overlapping lines, they become hard to read.

The bump chart focuses on rank rather than metric values, showing change over time in a cleaner layout.

The example below shows the ranking of the top 20 riders during the Tour de France 2024.

explore



Vega · Vega lite

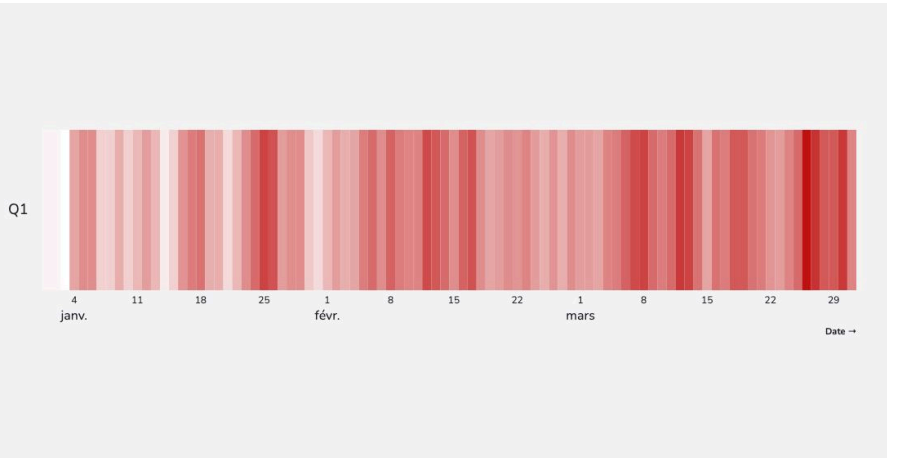
Deneb

Custom visuals cover many chart types, but not every reporting need fits a predefined format. Deneb, a free certified custom visual developed by Daniel Marsh-Patrick, brings the Vega and Vega Lite visualization libraries into Power BI, making it possible to build virtually any chart type directly inside the platform.

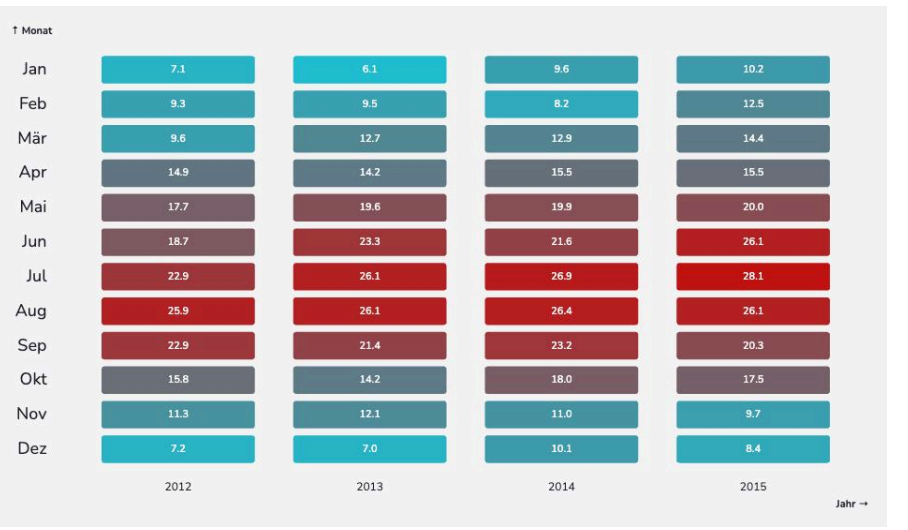
The catch: Vega is powerful, but complex. r42 has a deep understanding of Vega's visualization grammar and uses Deneb to create tailored visuals for reporting needs that no off-the-shelf chart can solve.

The templates on this page show a small fraction of what's possible.

Heatmap showing metrics over time, organized by week.



Heatmap showing metrics of a quarter.



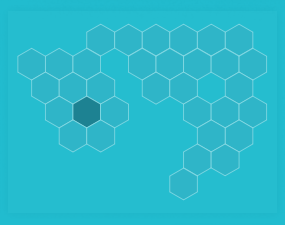
Heatmap looking at data over multiple years. Localized in German.

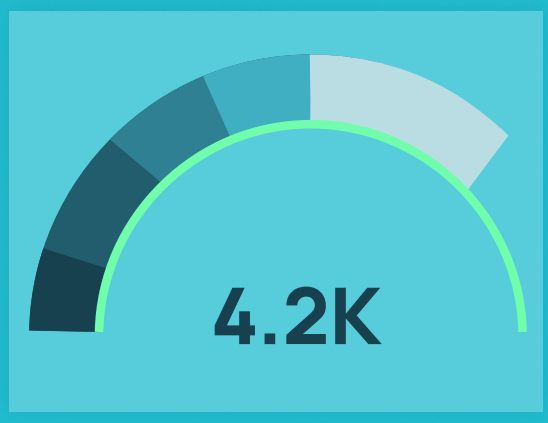
LOOKER STUDIO

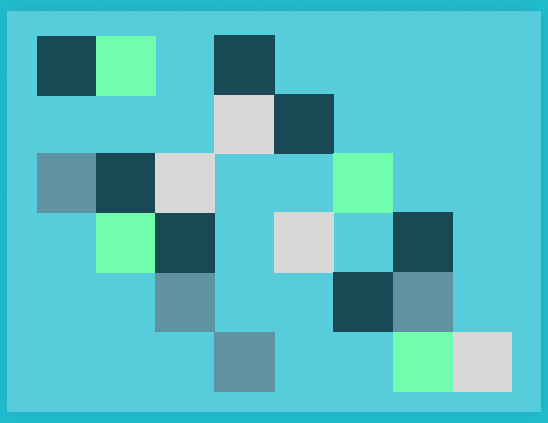
visualizations

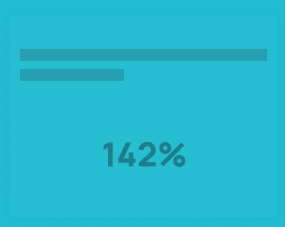
Over 20 community visualizations developed for **Supermetrics** between 2019 and 2024.

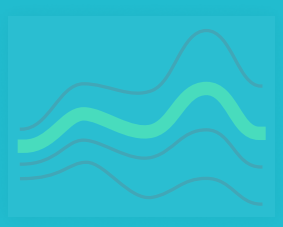
These were among the first third-party visuals for Looker Studio and are available as free visuals or as part of selected Supermetrics packages.

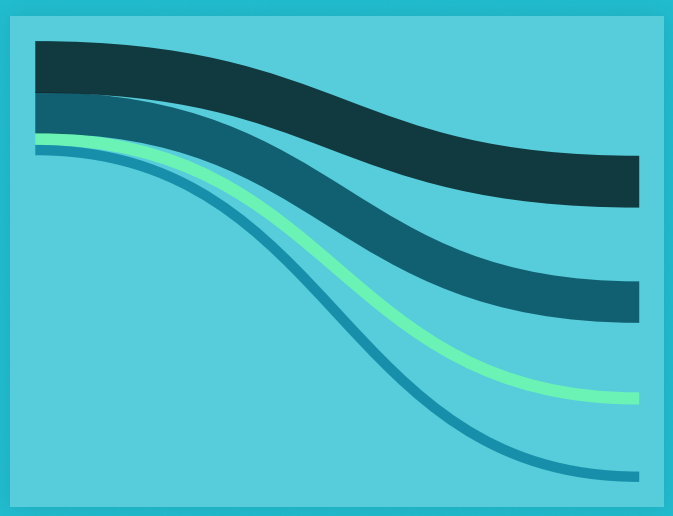












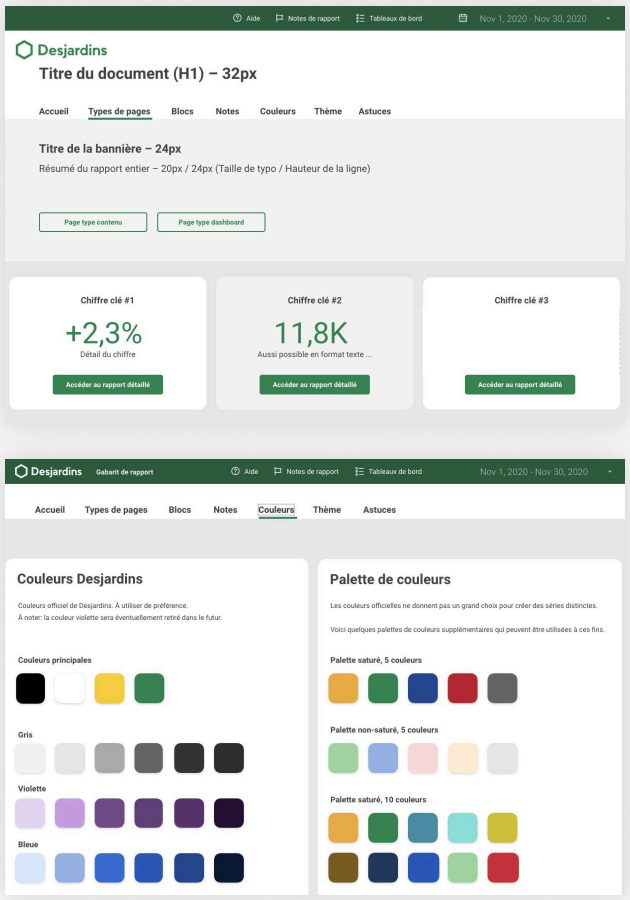
STYLE GUIDES

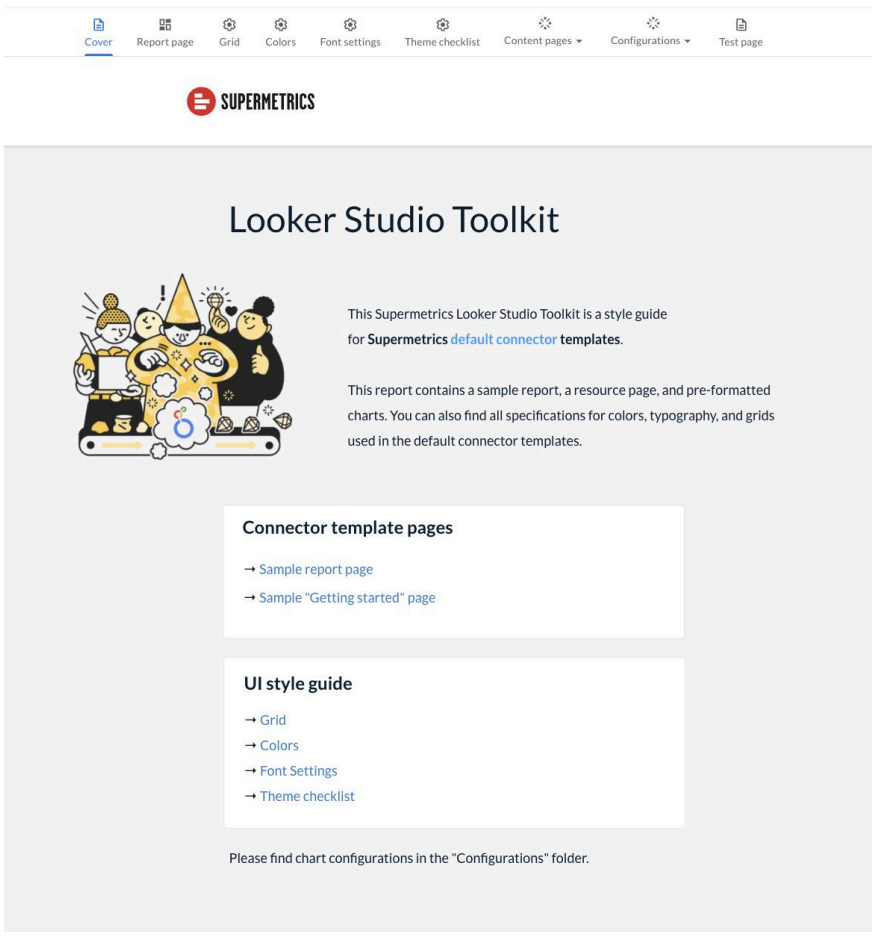
for Looker Studio

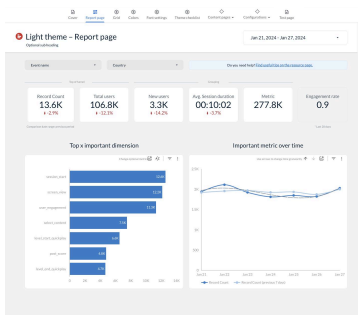
Looker Studio offers limited formatting options out of the box. Without clear guidelines, reports across an organization quickly drift apart in style, color use, and layout.

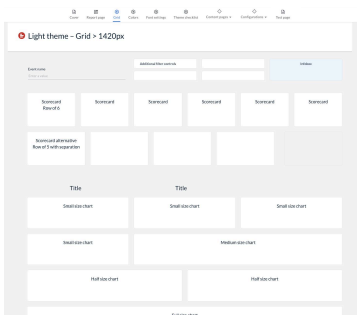
A data report style guide defines the rules: which colors to use, how charts are laid out, how labels and axes are formatted, and what each report type should look like.

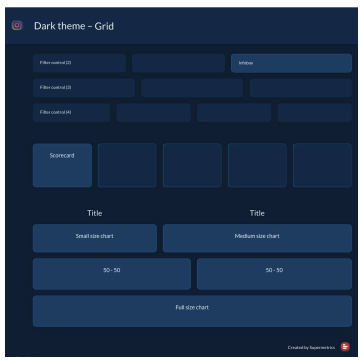
These guides give data teams a shared reference so every report follows the same visual language. They reduce back-and-forth during review, speed up report creation, and make sure the output looks consistent no matter who builds it.







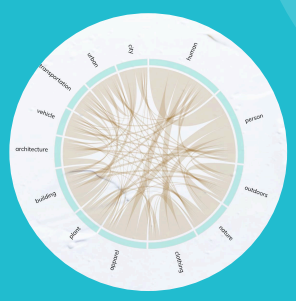


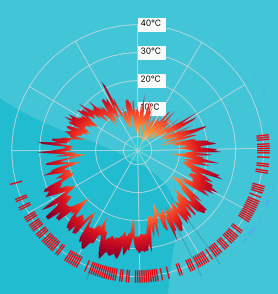


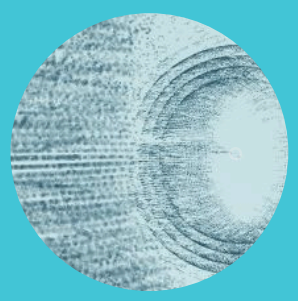
WEB PROJECTS

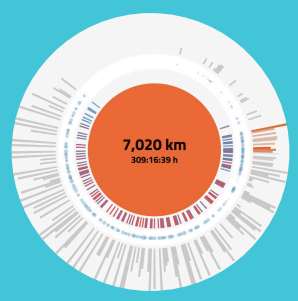
The web offers a growing number of libraries and frameworks for building and animating data visualizations. The following pages show recent web projects built for the browser.

Discover how color, sound, weather, or any kind of data can be turned into a visualization.









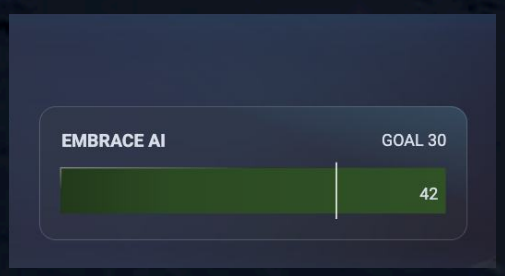
This page shows a density plot featured on the r42 website

VISUALIZING STRATEGY DATA

Some corporate dashboards need a level of graphical control that standard BI tools cannot provide. Web-based dashboards fill that gap.

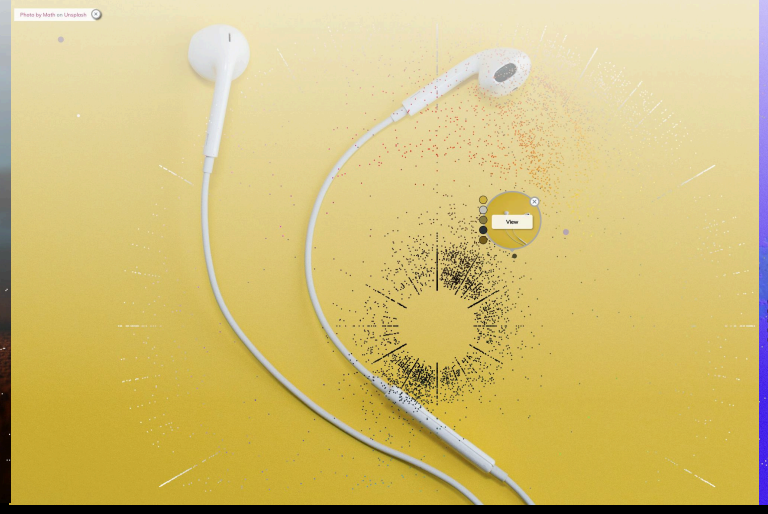
This strategic dashboard was built using Observable Framework and Plot, a JavaScript-based visualization platform. r42 also builds with Svelte and other modern web frameworks to match your existing tech stack.

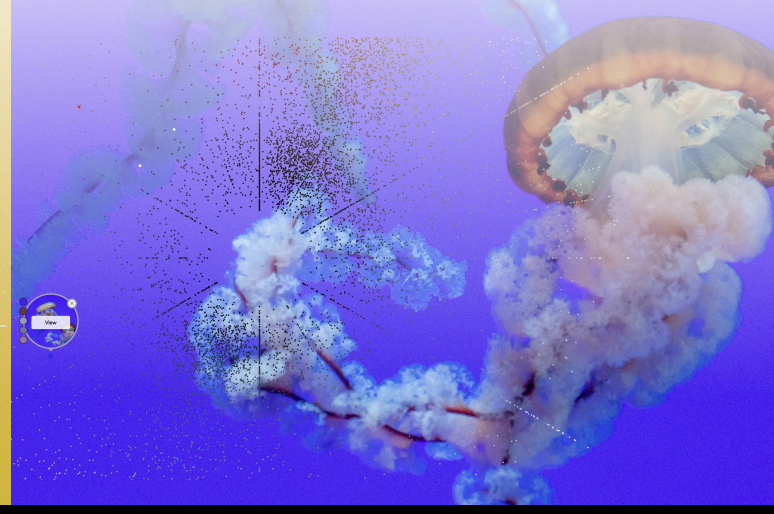
VAIMO



Teams Overview

Team												
Ctrl-Alt-Elite	96%	183	9.3%	4	7	1.4	8.9	105	22	3	97%	4.9
Byredo	94%	75	-24%	74	232	25	68	57	6.1	16	72%	9.3
Gems	77%	100	-3.8%	29	102	7.7	48	136	10	17	88%	13
Bitsplease	94%	86	-3.3%	43	51	12	79	24	5.7	1	96%	4.2
Total/Average	3/7	111	-3.6%	38	392	12	58	322	11	37	88%	32
Benchmark	6/7	109	-15%	20	N/A	4.8	24	N/A	9	N/A	88%	126





VISUALIZING COLOR

An experimental project visualizing
around 10,000 photo uploads to Unsplash,
a photo-sharing website, during May 2019.

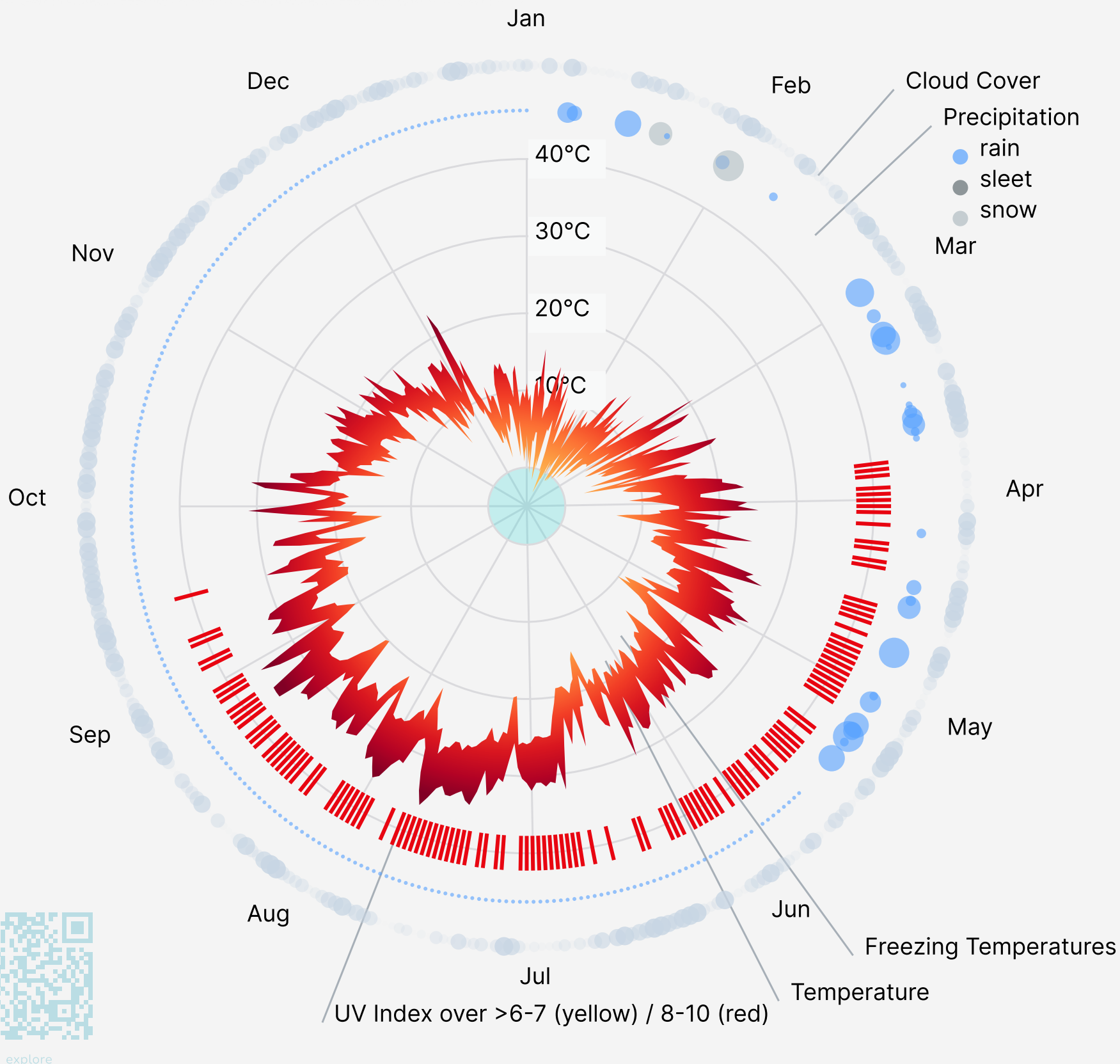
All photos were classified by color scheme,
technical specifications, and keywords.

VISUALIZING WEATHER

Data visualization can encode large amounts of data in a small space.

The human brain reads patterns faster than raw numbers, and a reader will quickly see that Tokyo's summers are hot and most rain falls in spring.

Tokyo 2018



explore

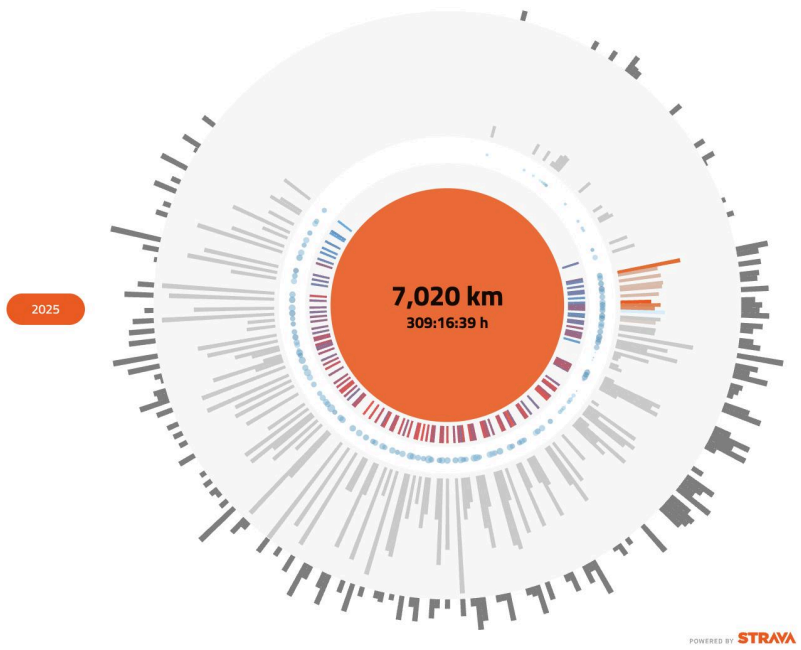
VISUALIZING ACTIVITIES

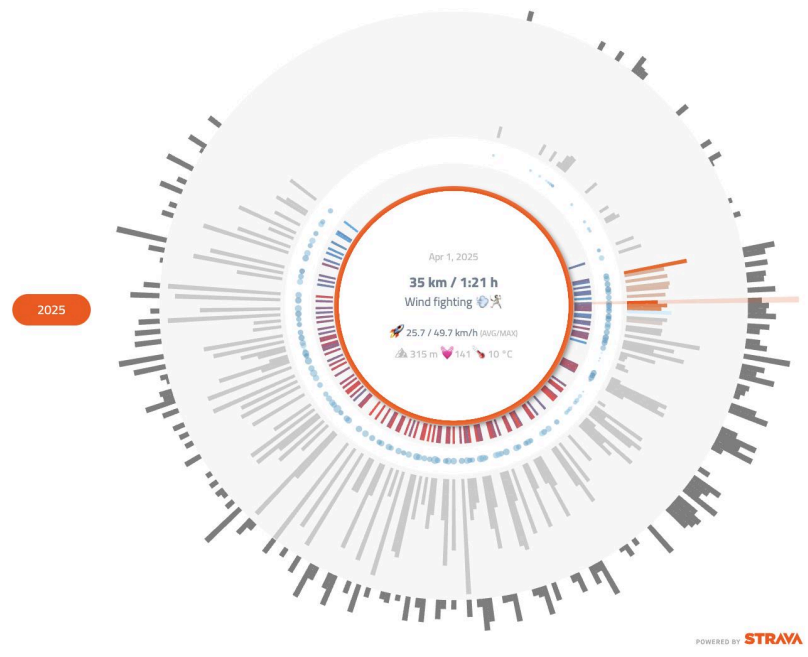
This project brings Strava activity data into Looker Studio and visualizes a full year of activities in a single chart.

Both the Looker Studio connector and the community visualization are available free of charge.

The circular visual captures multiple metrics per activity: distance, elevation gain, average speed, heart rate, and temperature, creating a unique drawing for every athlete and every year.

explore



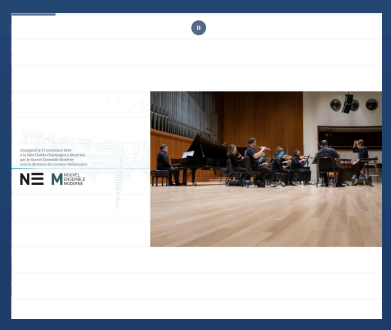


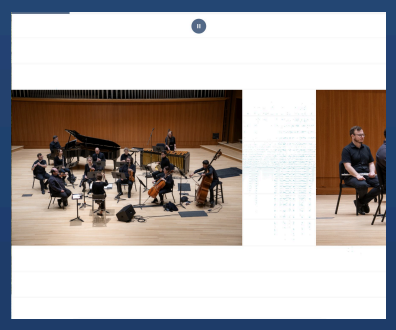
VISUALIZING SOUND

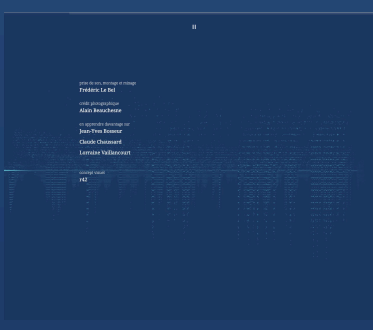
12 LIGNES

Portrait de Claude Chaussard

This single-page website features a recording of a modern classical piece performed by the NEM (Nouvel Ensemble de Montreal) in honor of artist Claude Chaussard. The visualization is an interpretation of the music that runs in real time as the piece plays.







explore

VISUALIZING CHAOS

An experimental 3D animation that visualizes a large dataset as seemingly chaotic, unstructured motion, then transitions into an interactive interface where the user walks through a process of categorizing the data step by step.

CONTACT

A portfolio looks back into the past.
Let’s look ahead instead.

What insights do you need to reveal for your audience?
Let’s find out together.

r42.ca

hello@r42.ca

@spandl.ca

@spandl