

Data Visualization

Resources

Datasets – refs - examples

“Table” of Contents

Data / datasets

- **kaggle** www.kaggle.com/datasets
-  **Reddit** www.reddit.com/r/datasets/
- **Awesome Public Datasets**
github.com/awesomedata/awesome-public-datasets
-  **Gapminder** www.gapminder.org/data/
-  **UNdata** <http://data.un.org/>
-  **World Health Organization** - www.who.int/data/gho

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InfoVis examples

- [Flowing Data](#)
- [Flowing Data - New York Times](#)
- [Tableau gallery](#) & [Tableau Public vizgallery](#) (a 3D space)
- [D3 gallery](#)
- [Data USA](#)
- [Visual Complexity](#)
- [Perceptual Edge](#)
- [Storytellingwithdata](#)
- [Kurtosis Systems](#)
- [Edward Tufte website](#)

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References (books)

- Books, papers, articles, links



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Web Development

- [W3schools HTML](#)
- [codecademy.com HTML and CSS tutorials](#)
- [Dive Into HTML5 – Homepage](#)
- [Dive Into HTML5 - Canvas](#)
- [codecademy.com JavaScript, jQuery tutorials](#)
- [W3schools SVG tutorial](#)
- [Mozilla Developer Network](#)
- [DevDocs](#) - Unified documentation on all web technologies

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InfoVis examples

- Flowing Data
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- D3 gallery
- Data USA
- Visual Complexity
- Perceptual Edge
- Storytellingwithdata
- Kurtosis Systems
- Edward Tufte website

InfoVis examples

- New York Times visual stories 2019, 2018
- Bloomberg graphics
- Reuters Graphics interactives
- The Guardian Datablog + Data visualisations
- Data visualization examples
- Visual Capitalist
- Our World in Data

InfoVis examples

- [FiveThirtyEight](#)
 - [Kantar Information is Beautiful Awards](#)
 - [Quartz data visualization](#)
 - [Graphic detail – The Economist](#)
 - [#dataviz on Twitter](#)
 - [Blockbuilder search](#)
 - [Observable](#)
 - [Information is beautiful](#)
 - [DatalsBeautiful](#)
-
- [Statistical Computing Statistical Graphics video library](#) (historical examples)

Hans Rosling, Our World in Data

- The best stats you've ever seen - TED2006
- New insights on poverty – TED2007
- Insights on HIV, in stunning data visuals – TED2009
- Let my dataset change your mindset - TED@State 2009
- Asia's rise — how and when - TEDIndia 2009
- Global population growth, box by box - TED@Cannes 2010
- The good news of the decade? We're winning the war against child mortality – TEDxChange 2010
- The magic washing machine – TEDWomen 2010
- Religions and babies - TEDxSummit 2012
- How not to be ignorant about the world - TEDSalon Berlin 2014

Scrollytelling

- What's really warming the world?
<https://www.bloomberg.com/graphics/2015-whats-warming-the-world/>
- An Incalculable Loss
<https://www.nytimes.com/interactive/2020/05/24/us/us-coronavirus-deaths-100000.html>
- The state of vaccination <https://news.sky.com/story/why-7-000-people-die-needlessly-every-day-11770982>
- Day of reckoning: The story of 24 hours that changed the world
<https://news.sky.com/story/d-day-the-story-of-24-hours-that-changed-the-world-11732907>
- The Deep Sea <https://neal.fun/deep-sea/>
-  ...and M126 E-class

Data / datasets

-  www.kaggle.com/datasets
-  [Reddit www.reddit.com/r/datasets/](https://www.reddit.com/r/datasets/)
- **Awesome Public Datasets**
github.com/awesomedata/awesome-public-datasets
-  www.gapminder.org/data/
-  <http://data.un.org/>
-  [World Health Organization - www.who.int/data/gho](https://www.who.int/data/gho)

Data / datasets

- [Eurostat databases](#)
- [data.world](#)
- [Data Is Plural](#)
- [Data.gov](#)
- [US Census Bureau](#)
- [National Centers for Environmental Information - NOAA](#)
- [CIA - The World Factbook](#)
- [UN Environment Programme GRID-Geneva](#)

Data / datasets

- [Makeover Monday](#)
- [Information Visualization Repository](#)
- [Infochimps](#)
- [Stanford Large Network Dataset Collection - social network datasets](#)
- [KD nuggets - Datasets for Data Mining and Data Science](#)
- [Digital Morphology Digital Library](#)
- [Rotten Tomatoes API](#)
- [IMDB data](#)
- [Google trends](#)
- [50 nearest star systems](#)
- [Tornado history project](#) - TornadoHistoryProject.com
- [IEEE DataPort](#)
- [IEEE VAST Challenges](#)

Data / datasets

European Data Portal and EU datasets (Eurostat):

- Participation rate in education and training (last 4 weeks) by sex and age
[https://ec.europa.eu/eurostat/databrowser/view/trng_lfse_01\\$DV_242/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/trng_lfse_01$DV_242/default/table?lang=en)
- Early leavers from education and training by sex and labour status
https://ec.europa.eu/eurostat/databrowser/view/edat_lfse_14/default/table?lang=en
- Population by educational attainment level, sex and age (%) - main indicators
[https://ec.europa.eu/eurostat/databrowser/view/edat_lfse_03\\$DV_596/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/edat_lfse_03$DV_596/default/table?lang=en)
- Tertiary education graduates
[https://ec.europa.eu/eurostat/databrowser/view/educ_itertc\\$DV_440/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/educ_itertc$DV_440/default/table?lang=en)
- Share of women researchers, by sectors of performance
<https://ec.europa.eu/eurostat/databrowser/view/tsc00005/default/table?lang=en>
- She Figures
2018 <https://www.europeandataportal.eu/data/datasets/she-figures-2018-gender-in-research-and-innovation?locale=en>
2015 <https://www.europeandataportal.eu/data/datasets/she-figures-2015-gender-in-research-and-innovation?locale=en>
- Employment rate by sex
<https://www.europeandataportal.eu/data/datasets/zdjzliveooitauzvvpngmg?locale=en>



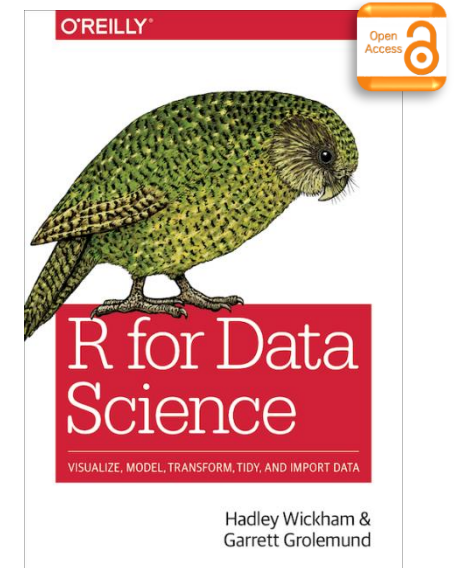
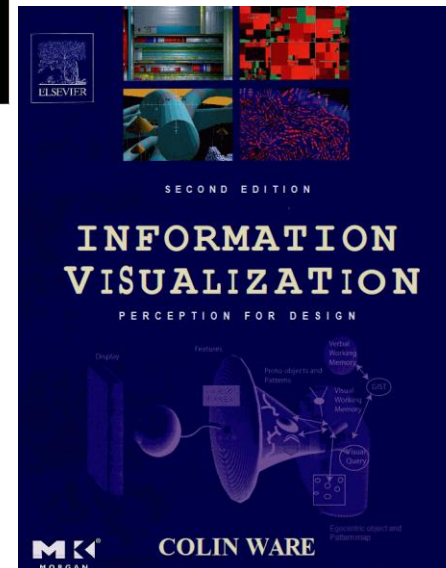
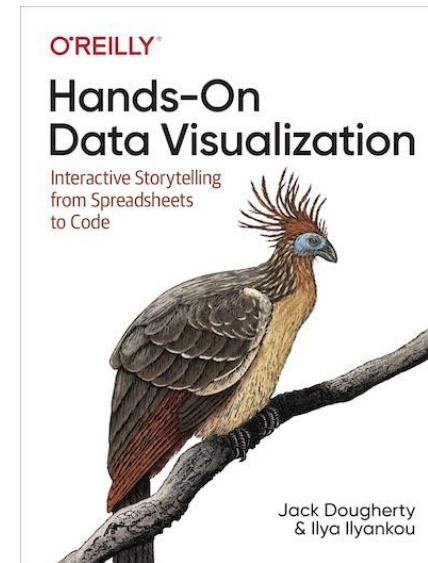
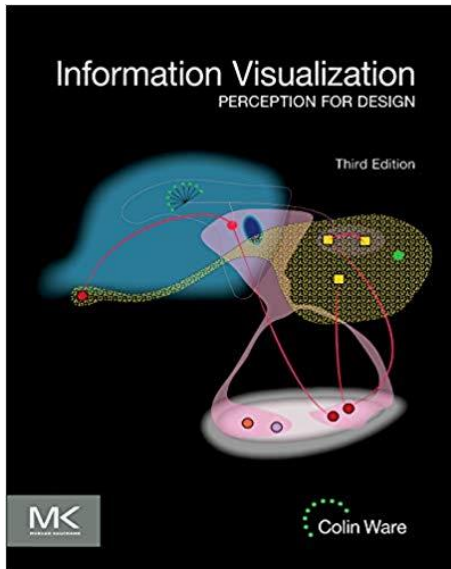
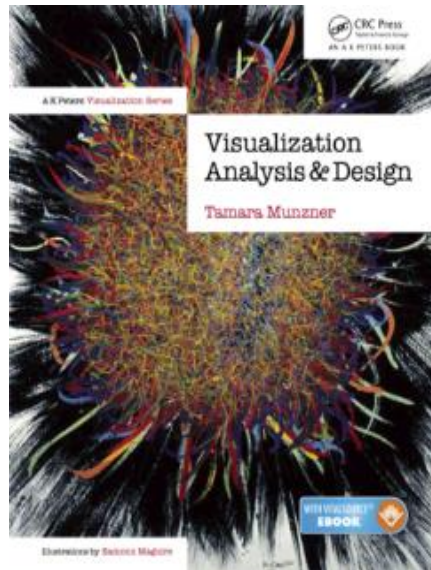
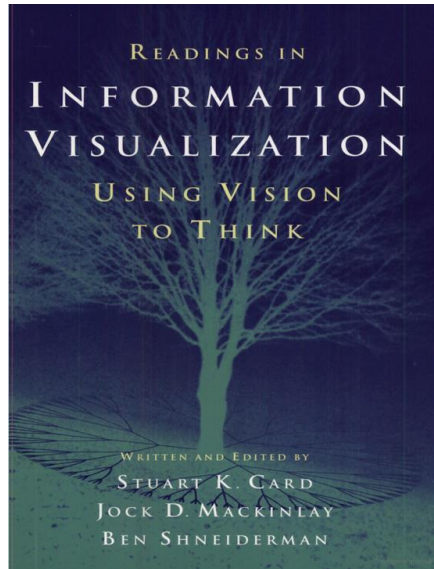
- <https://www.kaggle.com/datasets>

Awesome Public Datasets

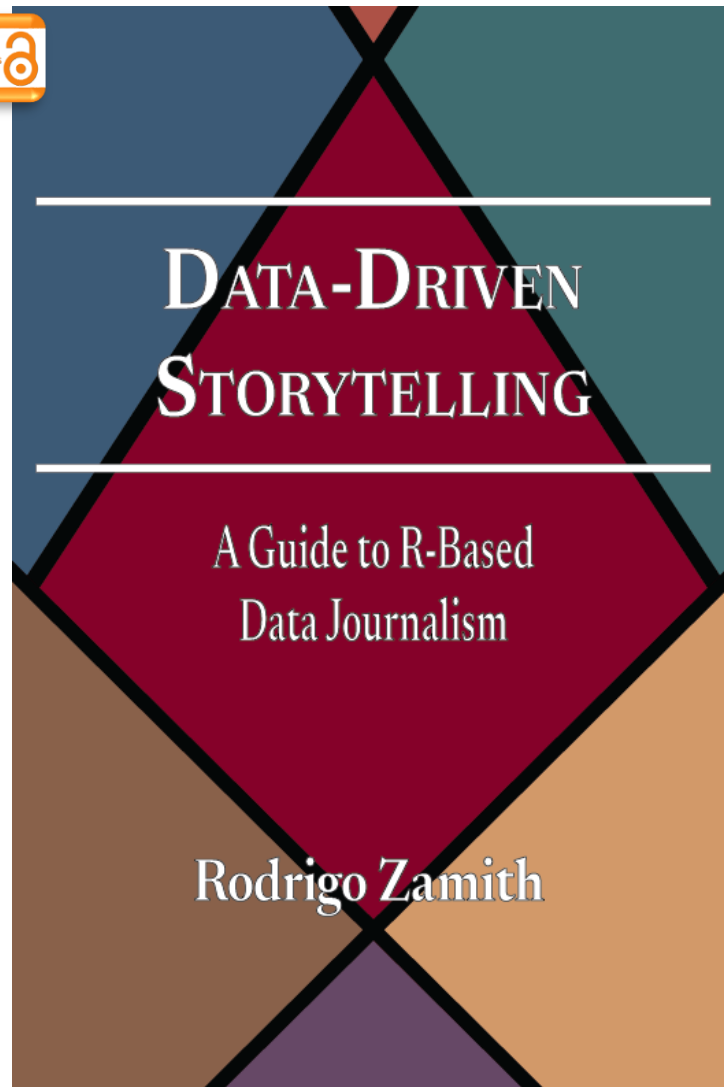
- <https://github.com/awesomedata/awesome-public-datasets>

References (books)

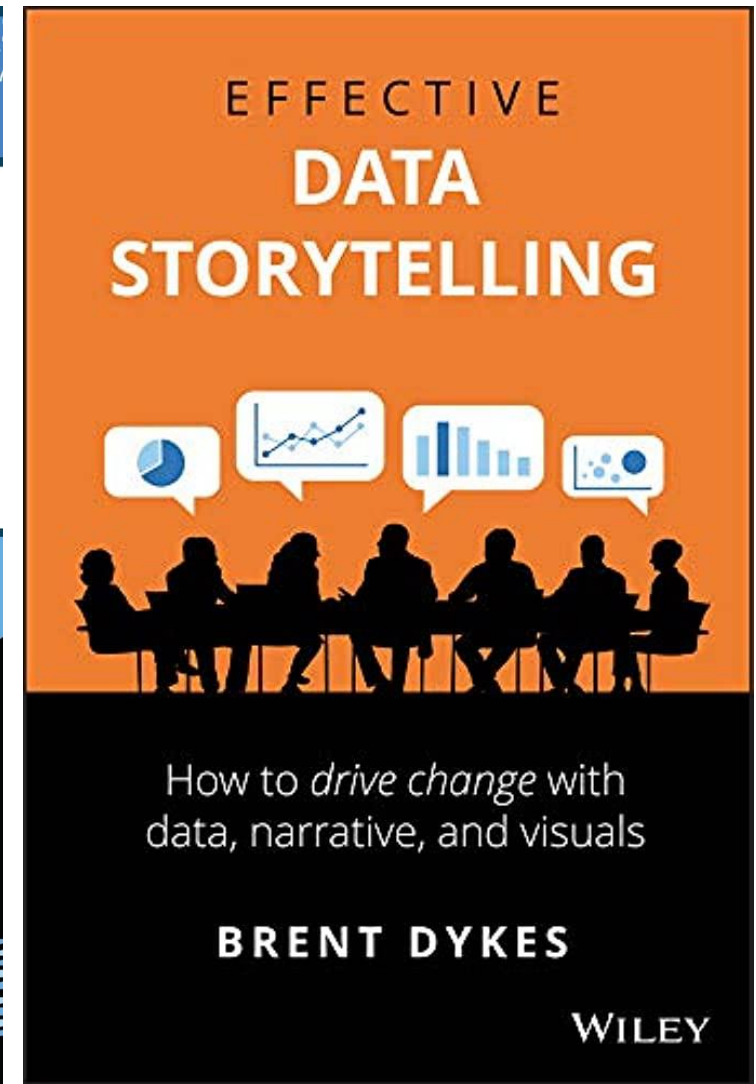
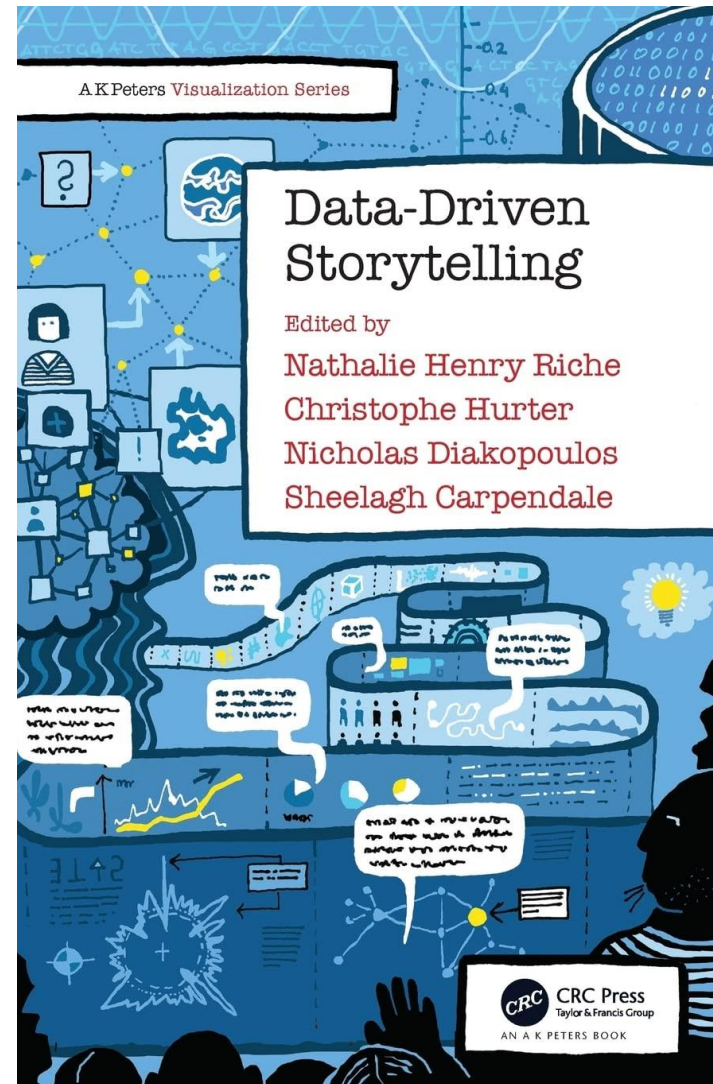
- Books, papers, articles, links



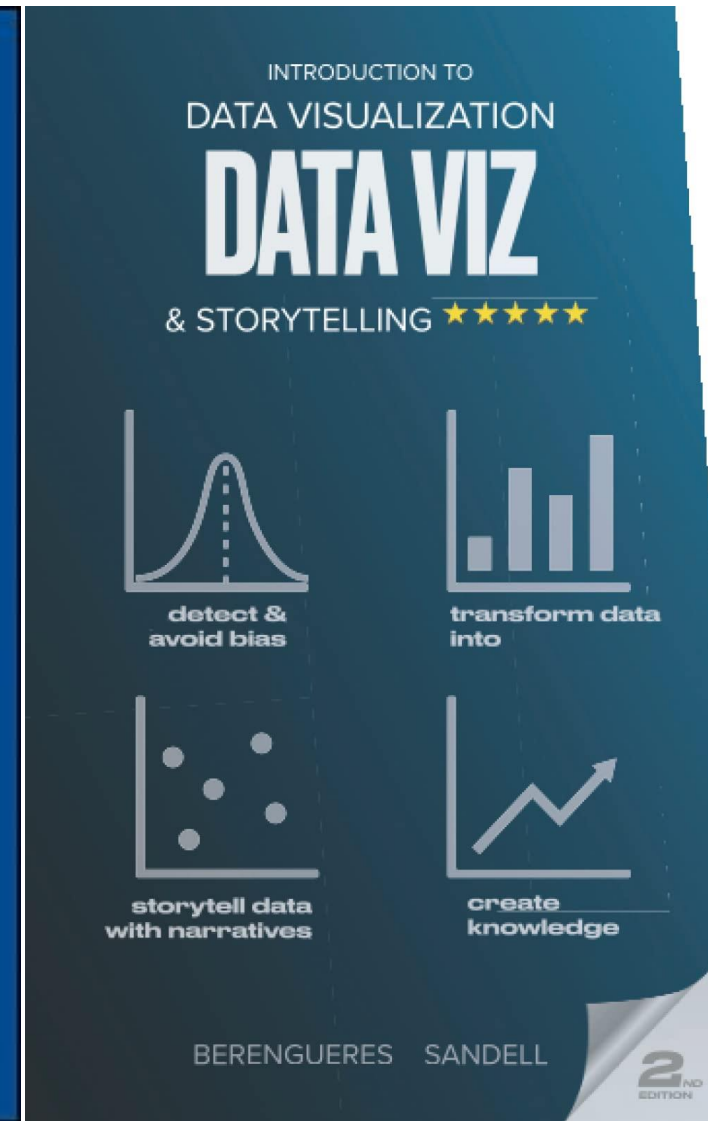
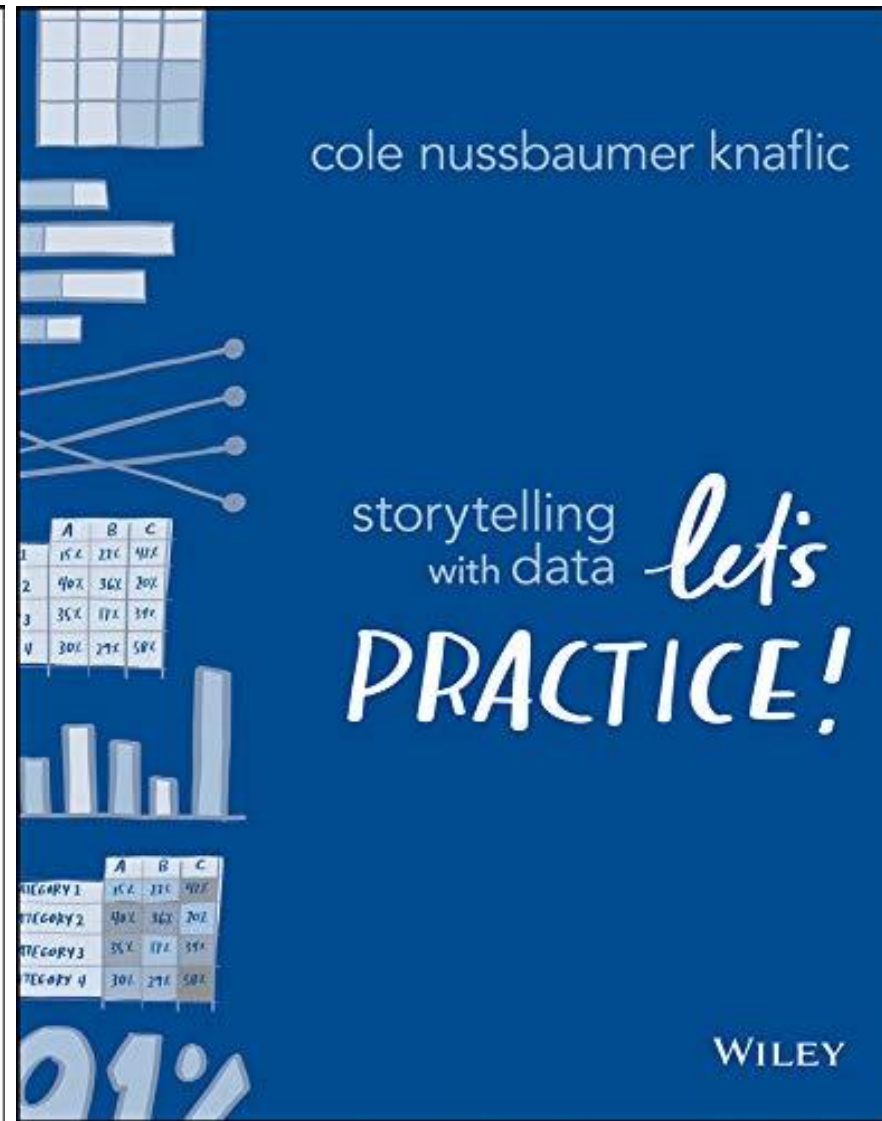
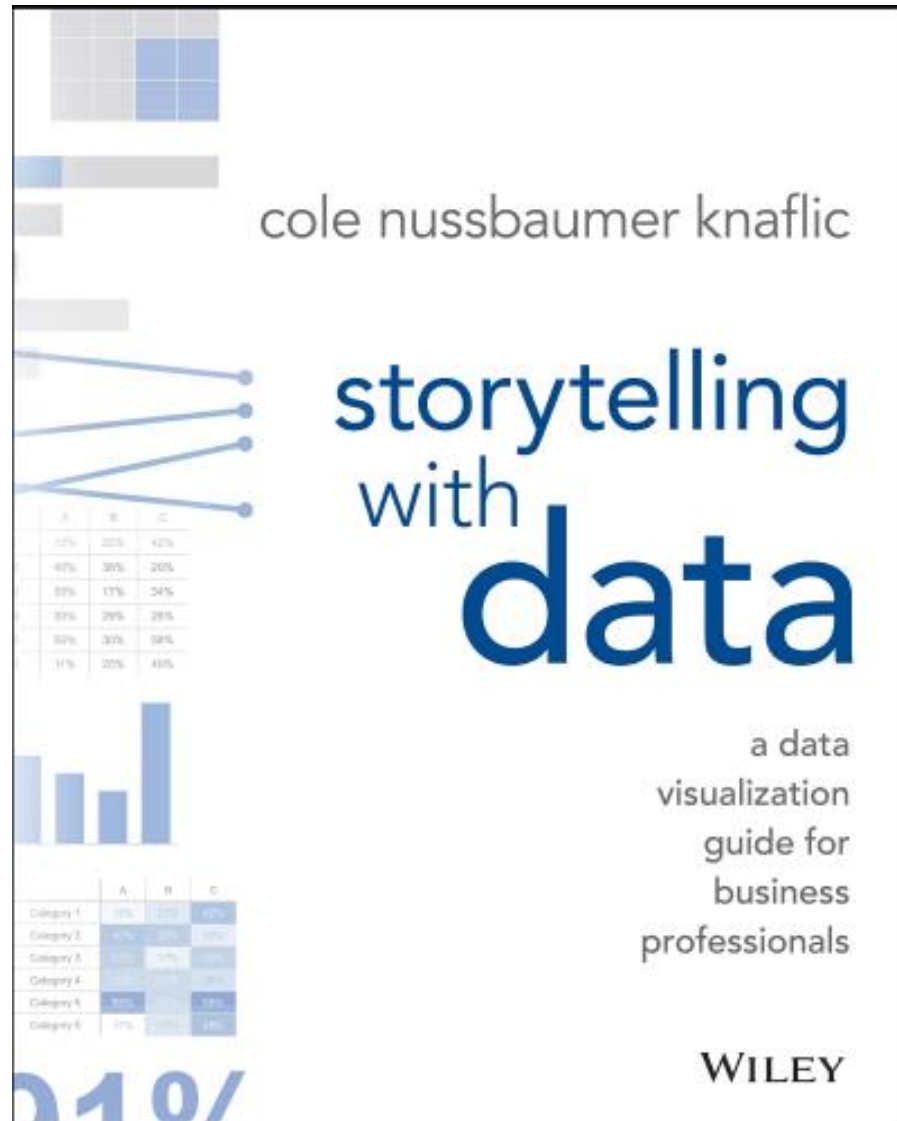
Data-driven storytelling



Zamith, R. (2021). *Data-Driven Storytelling: A Guide to R-Based Data Journalism* (1st ed.). UMass Amherst Libraries.
<https://dds.rodrigozamith.com/>



Data-driven storytelling

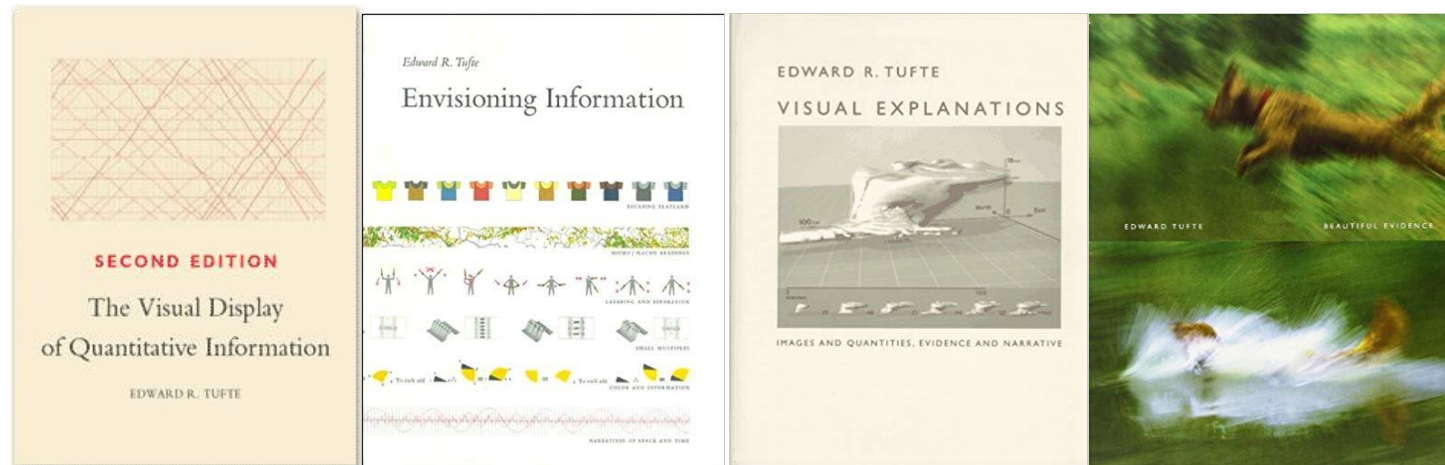


References (books)

- Bederson, B. B., & Shneiderman, B. (2003). *The Craft of Information Visualization: Readings and Reflections*. Morgan Kaufmann Publishers.
- Card, S. K., Mackinlay, J., & Shneiderman, B. (1999). *Readings in Information Visualization: Using Vision to Think*. (S. K. Card, J. Mackinlay, & B. Shneiderman, Eds.). Morgan Kaufmann.
- Munzner, T. (2014). *Visualization Analysis and Design*. CRC Press, A. K. Peters Visualization Series. Ch.1: What's Vis, and Why Do It?
- Murray, S. (2017). *Interactive Data Visualization for the Web* (2nd ed.). O'Reilly Media.
<https://alignedleft.com/tutorials/d3/>
- Spence, R. (2014). *Information Visualization: An Introduction* (3rd Editio). Springer International Publishing Switzerland.
- Ware, C. (2013). *Information Visualization: Perception for Design* (3rd Edition). Morgan Kaufmann.
- Grolemund, G., & Wickham, H. (2017). *R for Data Science*. O'Reilly Media. Retrieved from <https://r4ds.had.co.nz/>
- [*Data-Driven Storytelling: A Guide to R-Based Data Journalism*](#)

References (books)

- Tufte, E. R. (2001). *The Visual Display of Quantitative Information* (2nd ed.). Graphics Press.
- Tufte, E. R. (1990). *Envisioning Information* (4th ed.). Graphics Press.
- Tufte, E. R. (1997). *Visual Explanations: Images and Quantities, Evidence and Narrative*. Graphics Press.
- Tufte, E. R. (2006). *Beautiful Evidence* (1st ed.). Graphics Press.



<http://www.edwardtufte.com/tufte/>

References (articles)

- Franconeri, S. L., Padilla, L. M., Shah, P., Zacks, J. M., & Hullman, J. (2021). The Science of Visual Data Communication: What Works. *Psychological Science in the Public Interest*, 22(3), 110–161. <https://doi.org/10.1177/15291006211051956>
- Larkin, J. H., & Simon, H. A. (1987). Why a Diagram is (Sometimes) Worth Ten Thousand Words. *Cognitive Science*, 11(1), 65–100. <https://doi.org/10.1111/j.1551-6708.1987.tb00863.x>
- Shneiderman, B. (2003). The Eyes Have It: A Task by Data Type Taxonomy for Information Visualizations. In *The Craft of Information Visualization* (pp. 364–371). Elsevier. <https://doi.org/10.1016/B978-155860915-0/50046-9>
- van Ham, F., & Perer, A. (2009). “Search, Show Context, Expand on Demand”: Supporting Large Graph Exploration with Degree-of-Interest. *IEEE Transactions on Visualization and Computer Graphics*, 15(6), 953–960. <https://doi.org/10.1109/TVCG.2009.108>
- *more to be added...*



Web Development

- [W3schools HTML](#)
- [codecademy.com](#) [HTML](#) and [CSS](#) tutorials
- [Dive Into HTML5 – Homepage](#)
- [Dive Into HTML5 - Canvas](#)
- [codecademy.com](#) [JavaScript](#), [jQuery](#) tutorials
- [W3schools SVG tutorial](#)

- [Mozilla Developer Network](#)
- [DevDocs](#) - Unified documentation on all web technologies

Packages GUI-based systems: Tableau

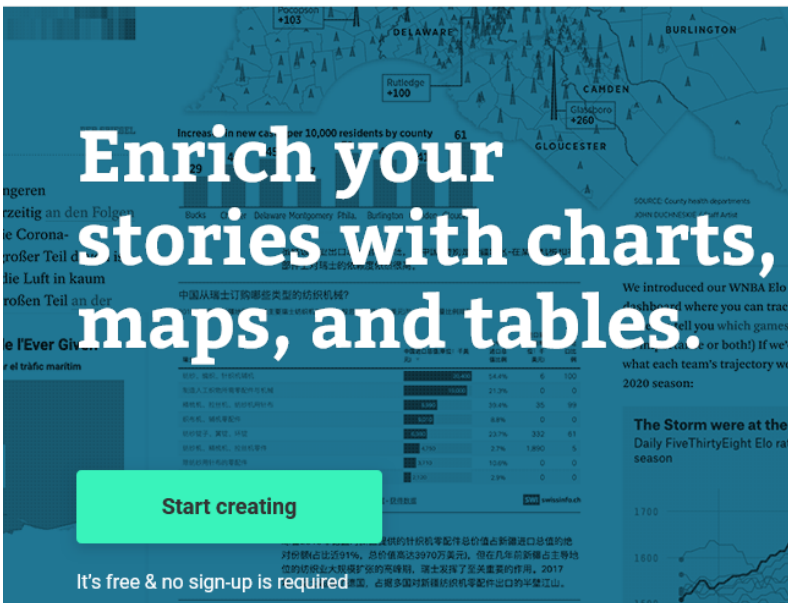
- **Tableau** <https://www.tableau.com/>
 - [Online Help](#)
 - [Quick Start Guides](#)
 - [Knowledge Base](#)
 - [Training and Tutorials](#)
 - [Tableau Public Gallery](#)
 - [Collection of tutorials for unique charts in Tableau](#)
- <https://www.tableau.com/academic/students>
- <https://www.tableau.com/academic/students#form>

Packages GUI-based systems: Datawrapper

■ Datawrapper <https://www.datawrapper.de/>

Datawrapper

Product ▾



Enrich your stories with charts, maps, and tables.

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Start creating

Datawrapper

Create new ... Sign in

Welcome to Datawrapper 🥳! [Learn how to create your first chart.](#)

1 Upload Data ✓

2 Check & Describe ✓

3 Visualize

4 Publish & Embed

Chart type Refine Annotate Layout

Labels

Alignment ☒ left ☐ right

☐ Move labels to separate line

☒ Show values

Visibility ☒ always ☐ on hover

Value alignment ☒ left ☐ diverging

Number format 0.[0]%

☐ Show totals

☐ Replace country codes with flags

☒ Show color legend

☐ Stack labels

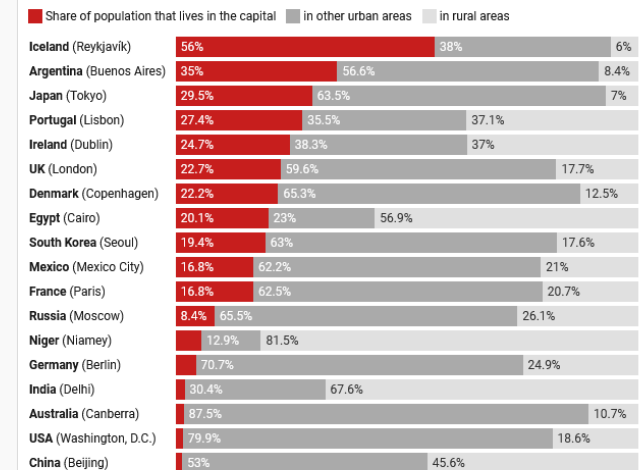
Horizontal axis

Custom range min — max

☐ Grid lines

56% of Icelanders live in their capital Reykjavik

Share of population that lives in the capital, in urban areas and in rural areas, of selected countries, 2014.



The UN defines "Urban" differently for each country. To count as "urban", Japanese settlements need to have at least 50,000 inhabitants. In Iceland, 200 inhabitants are enough.

Source: [UN Population Division](#) • [Get the data](#) • Created with [Datawrapper](#)

Packages GUI-based systems

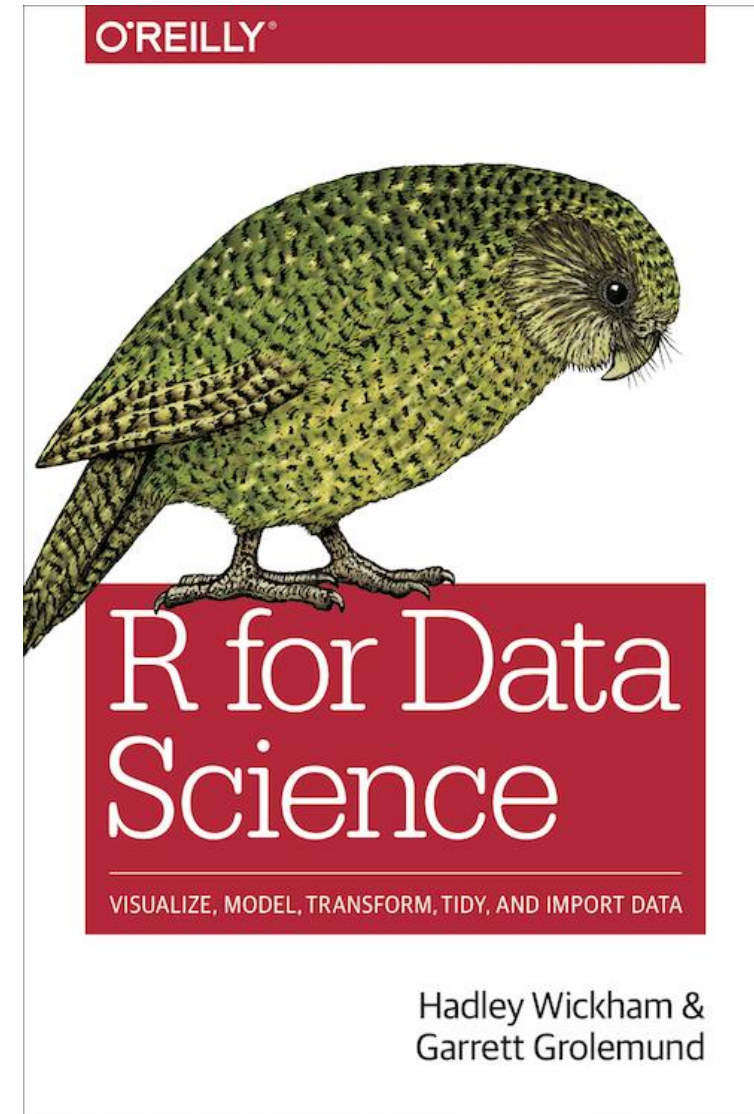
- TIBCO Spotfire Analytics
<https://www.tibco.com/products/tibco-spotfire>
- DataDesk <https://datadescription.com/>
- GGobi <http://www.ggobi.org/>
- Mondrian <http://www.theusrus.de/Mondrian/>
- JMP <https://www.jmp.co>

Other tools

- **VMD:** molecular visualization program
<http://www.ks.uiuc.edu/Research/vmd/>
- **XmdvTool:** package for the interactive visual exploration of multivariate data sets <http://davis.wpi.edu/%7Exmdv/>
- **ParaView:** open-source, multi-platform data analysis and visualization application <https://www.paraview.org/>
- **Vis5d+:** OpenGL-based volumetric visualization program for scientific datasets in 3+ dimensions <http://vis5d.sourceforge.net/>
- **The InfoVis Toolkit:** Interactive Graphics Toolkit written in Java
<http://ivtk.sourceforge.net/>
- **Protovis:** D3.js predecessor <http://mbostock.github.io/protovis/>

Grolemund, G., & Wickham, H.
(2017). *R for Data Science*.
O'Reilly Media.

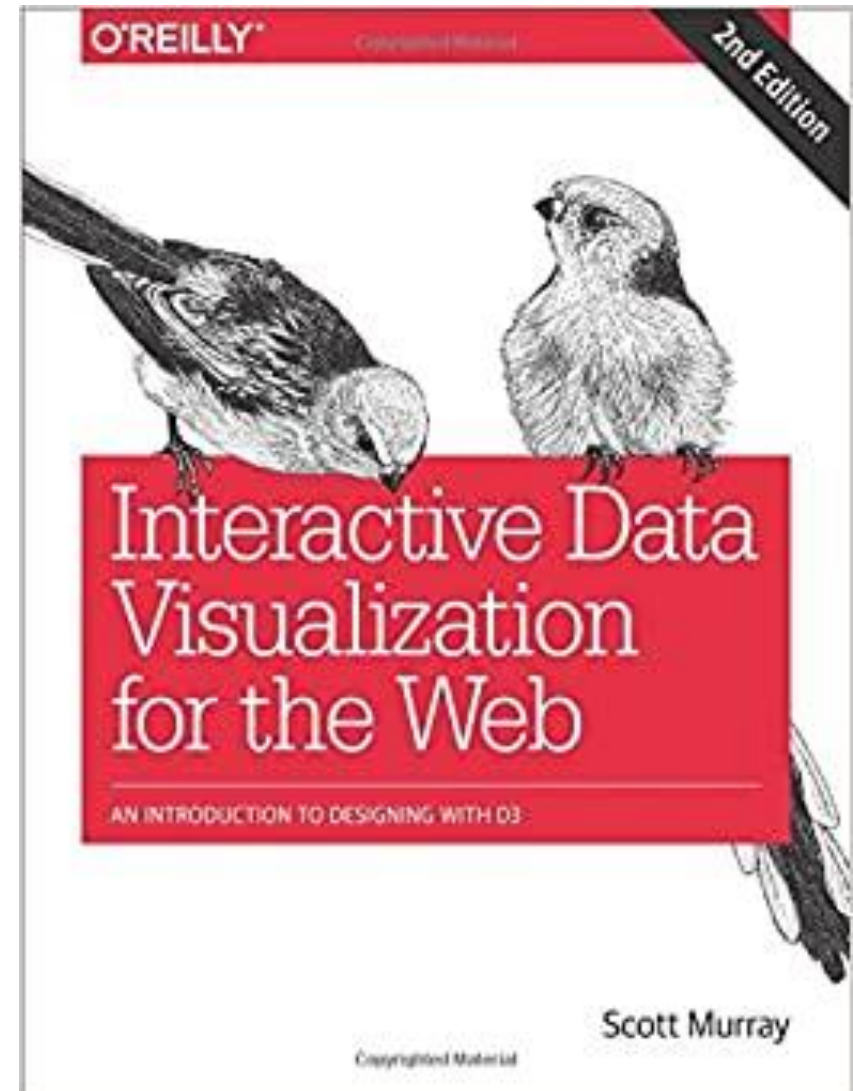
<https://r4ds.had.co.nz/>



D3

Murray, S. (2017). *Interactive Data Visualization for the Web* (2nd ed.). O'Reilly Media.

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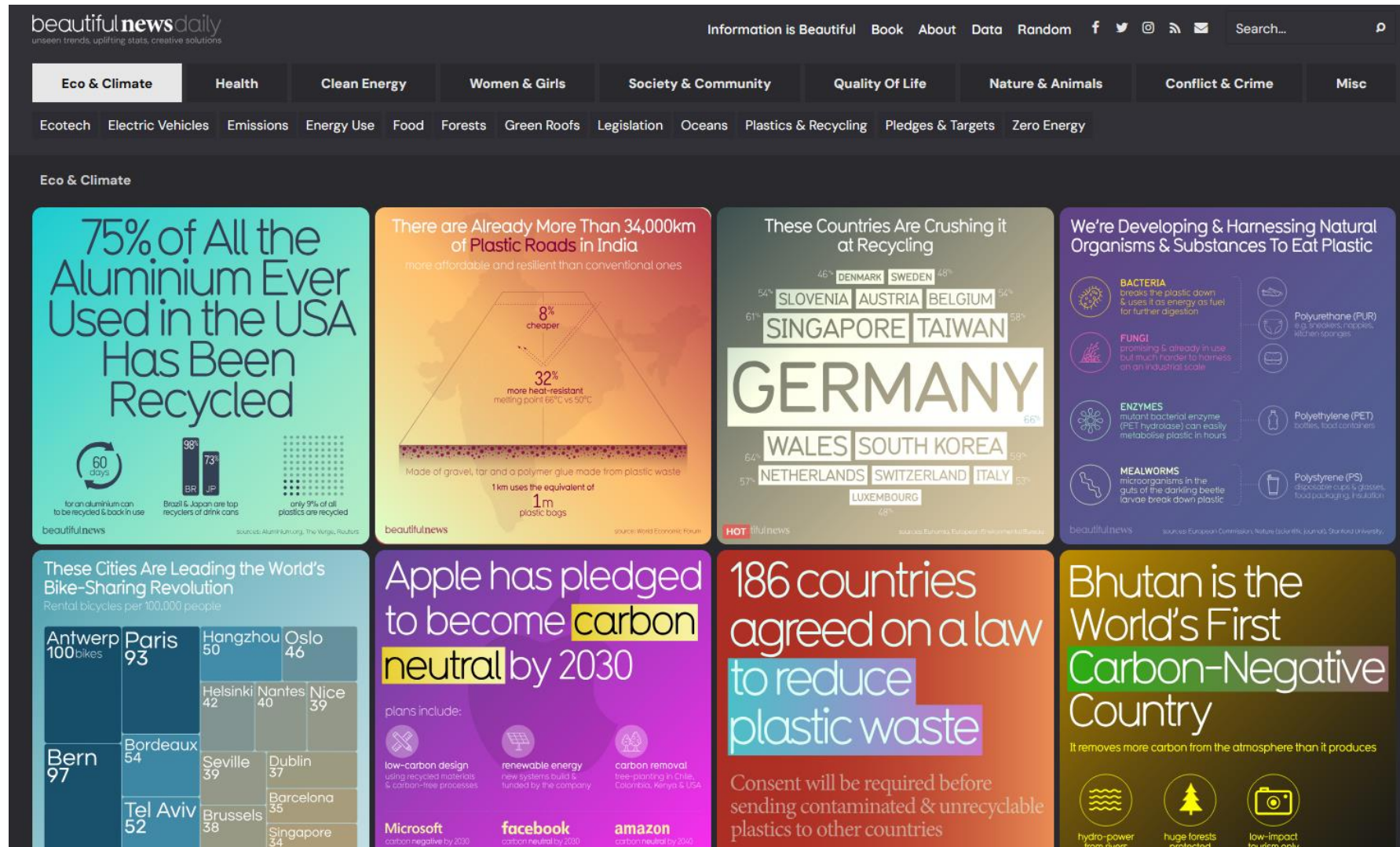


D3

- [D3 Q&A Slack](#)
- [D3 V4, What's new?](#) (explains major update from V3 to V4)
- [D3 on Stack Overflow](#)
- [Mike Bostock's site](#)
- [D3.js Gallery](#) (see also: [earlier version](#))
- [Mike Bostock on bl.ocks.org](#)
- [Jérôme Cukier and Scott Murray's D3 tutorial at the Strata Conference](#)
- [D3 For Mere Mortals](#)
- [Mike Bostock's D3 Tutorial](#)
- [Vadim's Lecture Slides, D3](#)
- [Jerome Cukier's D3 Cheat Sheet](#)
- [FlowingData D3 Tips](#)
- [D3, Conceptually](#)
- [D3 Tutorial Videos by Ian Johnson - Vol I](#) & [D3 Tutorial Videos by Ian Johnson - Vol II](#)
- [D3 Tips and Tricks](#)
- [TopoJson](#)

Beautiful news daily

- <https://informationisbeautiful.net/beautifulnews/>



Thank you!

Check course e-class for more!

mroussou@di.uoa.gr

<http://eclass.uoa.gr/courses/DI411/>