

Visualizing Data Exploring And Explaining Data With The Processing Environment

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[Visualize This](#) - Nathan Yau 2011-06-13

Practical data design tips from a data visualization expert of the modern age Data doesn't decrease; it is ever-increasing and can be overwhelming to organize in a way that makes sense to its intended audience. Wouldn't it be wonderful if we could actually visualize data in such a way that we could maximize its potential and tell a story in a clear, concise manner? Thanks to the creative genius of Nathan Yau, we can. With this full-color book, data visualization guru and author Nathan Yau uses step-by-step tutorials to show you how to visualize and tell stories with data. He explains how to gather, parse, and format data and then design high quality graphics that help you explore and present patterns, outliers, and relationships. Presents a unique approach to visualizing and telling stories with data, from a data visualization expert and the creator of [flowingdata.com](#), Nathan Yau Offers step-by-step tutorials and practical design tips for creating statistical graphics, geographical maps, and information design to find meaning in the numbers Details tools that can be used to visualize data-native graphics for the Web, such as

ActionScript, Flash libraries, PHP, and JavaScript and tools to design graphics for print, such as Adobe Illustrator Contains numerous examples and descriptions of patterns and outliers and explains how to show them Visualize This demonstrates how to explain data visually so that you can present your information in a way that is easy to understand and appealing.

Data Visualization - Kieran Healy 2018-12-18

An accessible primer on how to create effective graphics from data This book provides students and researchers a hands-on introduction to the principles and practice of data visualization. It explains what makes some graphs succeed while others fail, how to make high-quality figures from data using powerful and reproducible methods, and how to think about data visualization in an honest and effective way. Data Visualization builds the reader's expertise in ggplot2, a versatile visualization library for the R programming language. Through a series of worked examples, this accessible primer then demonstrates how to create plots piece by piece, beginning with summaries of single variables and moving on to

more complex graphics. Topics include plotting continuous and categorical variables; layering information on graphics; producing effective “small multiple” plots; grouping, summarizing, and transforming data for plotting; creating maps; working with the output of statistical models; and refining plots to make them more comprehensible. Effective graphics are essential to communicating ideas and a great way to better understand data. This book provides the practical skills students and practitioners need to visualize quantitative data and get the most out of their research findings. Provides hands-on instruction using R and ggplot2 Shows how the “tidyverse” of data analysis tools makes working with R easier and more consistent Includes a library of data sets, code, and functions

Visualizing Data - Ben Fry 2007-12-18

Enormous quantities of data go unused or underused today, simply because people can't visualize the quantities and relationships in it. Using a downloadable programming environment developed by the author, *Visualizing Data* demonstrates methods for representing data accurately on the Web and elsewhere, complete with user interaction, animation, and more. How do the 3.1 billion A, C, G and T letters of the human genome compare to those of a chimp or a mouse? What do the paths that millions of visitors take through a web site look like? With *Visualizing Data*, you learn how to answer complex questions like these with thoroughly interactive displays. We're not talking about cookie-cutter charts and graphs. This book teaches you how to design entire interfaces around large, complex data sets with the help of a powerful new design and prototyping tool called "Processing". Used by many researchers and companies to convey specific data in a clear and understandable manner, the Processing beta is available free. With this tool and *Visualizing Data* as a guide, you'll learn basic visualization principles, how to choose the right kind of display for your purposes, and how to provide interactive features that will bring users to your site over and over. This book teaches you: The seven stages of visualizing data -- acquire, parse, filter, mine, represent, refine, and interact How all data problems begin with a question and end with a narrative construct that

provides a clear answer without extraneous details Several example projects with the code to make them work Positive and negative points of each representation discussed. The focus is on customization so that each one best suits what you want to convey about your data set The book does not provide ready-made "visualizations" that can be plugged into any data set. Instead, with chapters divided by types of data rather than types of display, you'll learn how each visualization conveys the unique properties of the data it represents -- why the data was collected, what's interesting about it, and what stories it can tell. *Visualizing Data* teaches you how to answer questions, not simply display information.

Storytelling with Data - Cole Nussbaumer Knaflic 2015-10-09

Don't simply show your data—tell a story with it! *Storytelling with Data* teaches you the fundamentals of data visualization and how to communicate effectively with data. You'll discover the power of storytelling and the way to make data a pivotal point in your story. The lessons in this illuminative text are grounded in theory, but made accessible through numerous real-world examples—ready for immediate application to your next graph or presentation. Storytelling is not an inherent skill, especially when it comes to data visualization, and the tools at our disposal don't make it any easier. This book demonstrates how to go beyond conventional tools to reach the root of your data, and how to use your data to create an engaging, informative, compelling story. Specifically, you'll learn how to: Understand the importance of context and audience Determine the appropriate type of graph for your situation Recognize and eliminate the clutter clouding your information Direct your audience's attention to the most important parts of your data Think like a designer and utilize concepts of design in data visualization Leverage the power of storytelling to help your message resonate with your audience Together, the lessons in this book will help you turn your data into high impact visual stories that stick with your audience. Rid your world of ineffective graphs, one exploding 3D pie chart at a time. There is a story in your data—*Storytelling with Data* will give you the skills and power to tell it!

Python Data Science Handbook - Jake VanderPlas 2016-11-21

For many researchers, Python is a first-class tool mainly because of its libraries for storing, manipulating, and gaining insight from data. Several resources exist for individual pieces of this data science stack, but only with the Python Data Science Handbook do you get them all—IPython, NumPy, Pandas, Matplotlib, Scikit-Learn, and other related tools. Working scientists and data crunchers familiar with reading and writing Python code will find this comprehensive desk reference ideal for tackling day-to-day issues: manipulating, transforming, and cleaning data; visualizing different types of data; and using data to build statistical or machine learning models. Quite simply, this is the must-have reference for scientific computing in Python. With this handbook, you'll learn how to use: IPython and Jupyter: provide computational environments for data scientists using Python NumPy: includes the ndarray for efficient storage and manipulation of dense data arrays in Python Pandas: features the DataFrame for efficient storage and manipulation of labeled/columnar data in Python Matplotlib: includes capabilities for a flexible range of data visualizations in Python Scikit-Learn: for efficient and clean Python implementations of the most important and established machine learning algorithms

Getting Started with Processing.py - Allison Parrish 2016-05-11

Processing opened up the world of programming to artists, designers, educators, and beginners. The Processing.py Python implementation of Processing reinterprets it for today's web. This short book gently introduces the core concepts of computer programming and working with Processing. Written by the co-founders of the Processing project, Reas and Fry, along with co-author Allison Parrish, *Getting Started with Processing.py* is your fast track to using Python's Processing mode.

Visualizing Data - Ben Fry 2008

Provides information on the methods of visualizing data on the Web, along with example projects and code.

Visualizing Data Patterns with Micromaps - Daniel B. Carr 2010-04-29

After more than 15 years of development drawing on research in cognitive psychology, statistical graphics, computer science, and cartography, micromap designs are becoming part of mainstream

statistical visualizations. Bringing together the research of two leaders in this field, *Visualizing Data Patterns with Micromaps* presents the many design variations and applications of micromaps, which link statistical information to an organized set of small maps. This full-color book helps readers simultaneously explore the statistical and geographic patterns in their data. After illustrating the three main types of micromaps, the authors summarize the research behind the design of visualization tools that support exploration and communication of spatial data patterns. They then explain how these research findings can be applied to micromap designs in general and detail the specifics involved with linked, conditioned, and comparative micromap designs. To compare and contrast their purposes, limitations, and strengths, the final chapter applies all three of these techniques to the same demographic data for Louisiana before and after Hurricanes Katrina and Rita. Supplementary website Offering numerous ancillary features, the book's website at <http://mason.gmu.edu/~dcarr/Micromaps/> provides many boundary files and real data sets that address topics, such as species biodiversity and alcoholism. One complete folder of data examples presents cancer statistics, risk factors, and demographic data. The site includes CCmaps, the dynamic implementation of conditioned micromaps written in Java, as well as a link to a generalized micromaps program. It also contains R functions and scripts for linked and comparative micromaps, enabling re-creation of all the corresponding examples in the book.

The Violence Project - Jillian Peterson 2021-09-07

"Groundbreaking." —Rachel Louise Snyder, bestselling author of *No Visible Bruises* An examination of the phenomenon of mass shootings in America and an urgent call to implement evidence-based strategies to stop these tragedies Winner of the 2022 Minnesota Book Award Using data from the writers' groundbreaking research on mass shooters, including first-person accounts from the perpetrators themselves, *The Violence Project* charts new pathways to prevention and innovative ways to stop the social contagion of violence. Frustrated by reactionary policy conversations that never seemed to convert into meaningful action, special investigator and psychologist Jill Peterson and sociologist James

Densley built The Violence Project, the first comprehensive database of mass shooters. Their goal was to establish the root causes of mass shootings and figure out how to stop them by examining hundreds of data points in the life histories of more than 170 mass shooters—from their childhood and adolescence to their mental health and motives. They've also interviewed the living perpetrators of mass shootings and people who knew them, shooting survivors, victims' families, first responders, and leading experts to gain a comprehensive firsthand understanding of the real stories behind them, rather than the sensationalized media narratives that too often prevail. For the first time, instead of offering thoughts and prayers for the victims of these crimes, Peterson and Densley share their data-driven solutions for exactly what we must do, at the individual level, in our communities, and as a country, to put an end to these tragedies that have defined our modern era.

Data Visualization: Exploring and Explaining with Data - Jeffrey D. Camm
2021-05-06

DATA VISUALIZATION: Exploring and Explaining with Data is designed to introduce best practices in data visualization to undergraduate and graduate students. The book contains material on effective design, choice of chart type, effective use of color, how to explore data visually, and how to explain concepts and results visually in a compelling way with data. In an increasingly data-driven economy, these concepts are becoming more important for analysts, natural scientists, social scientists, engineers, medical professionals, business professionals, and virtually everyone who needs to interact with data. Indeed, the skills developed in this book will be helpful to all who want to influence with data or be accurately informed by data. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Effective Data Visualization - Stephanie D. H. Evergreen 2019-04-03
NOW IN FULL COLOR! Written by sought-after speaker, designer, and researcher Stephanie D. H. Evergreen, *Effective Data Visualization* shows readers how to create Excel charts and graphs that best communicate their data findings. This comprehensive how-to guide

functions as a set of blueprints—supported by both research and the author's extensive experience with clients in industries all over the world—for conveying data in an impactful way. Delivered in Evergreen's humorous and approachable style, the book covers the spectrum of graph types available beyond the default options, how to determine which one most appropriately fits specific data stories, and easy steps for building the chosen graph in Excel. Now in full color with new examples throughout, the Second Edition includes a revamped chapter on qualitative data, nine new quantitative graph types, new shortcuts in Excel, and an entirely new chapter on Sharing Your Data With the World, which provides advice on using dashboards. New from Stephanie Evergreen! *The Data Visualization Sketchbook* provides advice on getting started with sketching and offers tips, guidance, and completed sample sketches for a number of reporting formats. Bundle *Effective Data Visualization, 2e*, and *The Data Visualization Sketchbook*, using ISBN 978-1-5443-7178-8!

[Data Visualization](#) - Frits H. Post 2012-12-06

Data visualization is currently a very active and vital area of research, teaching and development. The term unites the established field of scientific visualization and the more recent field of information visualization. The success of data visualization is due to the soundness of the basic idea behind it: the use of computer-generated images to gain insight and knowledge from data and its inherent patterns and relationships. A second premise is the utilization of the broad bandwidth of the human sensory system in steering and interpreting complex processes, and simulations involving data sets from diverse scientific disciplines and large collections of abstract data from many sources. These concepts are extremely important and have a profound and widespread impact on the methodology of computational science and engineering, as well as on management and administration. The interplay between various application areas and their specific problem solving visualization techniques is emphasized in this book. Reflecting the heterogeneous structure of *Data Visualization*, emphasis was placed on these topics: -Visualization Algorithms and Techniques; -Volume

Visualization; -Information Visualization; -Multiresolution Techniques; -Interactive Data Exploration. Data Visualization: The State of the Art presents the state of the art in scientific and information visualization techniques by experts in this field. It can serve as an overview for the inquiring scientist, and as a basic foundation for developers. This edited volume contains chapters dedicated to surveys of specific topics, and a great deal of original work not previously published illustrated by examples from a wealth of applications. The book will also provide basic material for teaching the state of the art techniques in data visualization. Data Visualization: The State of the Art is designed to meet the needs of practitioners and researchers in scientific and information visualization. This book is also suitable as a secondary text for graduate level students in computer science and engineering.

Graph Analysis and Visualization - Richard Brath 2015-01-30

Wring more out of the data with a scientific approach to analysis Graph Analysis and Visualization brings graph theory out of the lab and into the real world. Using sophisticated methods and tools that span analysis functions, this guide shows you how to exploit graph and network analytic techniques to enable the discovery of new business insights and opportunities. Published in full color, the book describes the process of creating powerful visualizations using a rich and engaging set of examples from sports, finance, marketing, security, social media, and more. You will find practical guidance toward pattern identification and using various data sources, including Big Data, plus clear instruction on the use of software and programming. The companion website offers data sets, full code examples in Python, and links to all the tools covered in the book. Science has already reaped the benefit of network and graph theory, which has powered breakthroughs in physics, economics, genetics, and more. This book brings those proven techniques into the world of business, finance, strategy, and design, helping extract more information from data and better communicate the results to decision-makers. Study graphical examples of networks using clear and insightful visualizations Analyze specifically-curated, easy-to-use data sets from various industries Learn the software tools and programming

languages that extract insights from data Code examples using the popular Python programming language There is a tremendous body of scientific work on network and graph theory, but very little of it directly applies to analyst functions outside of the core sciences - until now. Written for those seeking empirically based, systematic analysis methods and powerful tools that apply outside the lab, Graph Analysis and Visualization is a thorough, authoritative resource.

Effective Data Storytelling - Brent Dykes 2019-12-10

Master the art and science of data storytelling—with frameworks and techniques to help you craft compelling stories with data. The ability to effectively communicate with data is no longer a luxury in today's economy; it is a necessity. Transforming data into visual communication is only one part of the picture. It is equally important to engage your audience with a narrative—to tell a story with the numbers. Effective Data Storytelling will teach you the essential skills necessary to communicate your insights through persuasive and memorable data stories. Narratives are more powerful than raw statistics, more enduring than pretty charts. When done correctly, data stories can influence decisions and drive change. Most other books focus only on data visualization while neglecting the powerful narrative and psychological aspects of telling stories with data. Author Brent Dykes shows you how to take the three central elements of data storytelling—data, narrative, and visuals—and combine them for maximum effectiveness. Taking a comprehensive look at all the elements of data storytelling, this unique book will enable you to: Transform your insights and data visualizations into appealing, impactful data stories Learn the fundamental elements of a data story and key audience drivers Understand the differences between how the brain processes facts and narrative Structure your findings as a data narrative, using a four-step storyboarding process Incorporate the seven essential principles of better visual storytelling into your work Avoid common data storytelling mistakes by learning from historical and modern examples Effective Data Storytelling: How to Drive Change with Data, Narrative and Visuals is a must-have resource for anyone who communicates regularly with data, including business

professionals, analysts, marketers, salespeople, financial managers, and educators.

[Handbook of Data Visualization](#) - Chun-houh Chen 2007-12-18

Visualizing the data is an essential part of any data analysis. Modern computing developments have led to big improvements in graphic capabilities and there are many new possibilities for data displays. This book gives an overview of modern data visualization methods, both in theory and practice. It details modern graphical tools such as mosaic plots, parallel coordinate plots, and linked views. Coverage also examines graphical methodology for particular areas of statistics, for example Bayesian analysis, genomic data and cluster analysis, as well software for graphics.

Interactive Data Visualization for the Web - Scott Murray 2013-03-11

Author Scott Murray teaches you the fundamental concepts and methods of D3, a JavaScript library that lets you express data visually in a web browser

Data Points - Nathan Yau 2013-03-25

A fresh look at visualization from the author of Visualize This Whether it's statistical charts, geographic maps, or the snappy graphical statistics you see on your favorite news sites, the art of data graphics or visualization is fast becoming a movement of its own. In Data Points: Visualization That Means Something, author Nathan Yau presents an intriguing complement to his bestseller Visualize This, this time focusing on the graphics side of data analysis. Using examples from art, design, business, statistics, cartography, and online media, he explores both standard-and not so standard-concepts and ideas about illustrating data. Shares intriguing ideas from Nathan Yau, author of Visualize This and creator of [flowingdata.com](#), with over 66,000 subscribers Focuses on visualization, data graphics that help viewers see trends and patterns they might not otherwise see in a table Includes examples from the author's own illustrations, as well as from professionals in statistics, art, design, business, computer science, cartography, and more Examines standard rules across all visualization applications, then explores when and where you can break those rules Create visualizations that register

at all levels, with Data Points: Visualization That Means Something.

Data Visualization in Society - Martin Engebretsen 2020-03-21

Today we are witnessing an increased use of data visualization in society. Across domains such as work, education and the news, various forms of graphs, charts and maps are used to explain, convince and tell stories. In an era in which more and more data are produced and circulated digitally, and digital tools make visualization production increasingly accessible, it is important to study the conditions under which such visual texts are generated, disseminated and thought to be of societal benefit. This book is a contribution to the multi-disciplined and multi-faceted conversation concerning the forms, uses and roles of data visualization in society. Do data visualizations do 'good' or 'bad'? Do they promote understanding and engagement, or do they do ideological work, privileging certain views of the world over others? The contributions in the book engage with these core questions from a range of disciplinary perspectives.

Dear Data - Giorgia Lupi 2016-09-13

Equal parts mail art, data visualization, and affectionate correspondence, Dear Data celebrates "the infinitesimal, incomplete, imperfect, yet exquisitely human details of life," in the words of Maria Popova (Brain Pickings), who introduces this charming and graphically powerful book. For one year, Giorgia Lupi, an Italian living in New York, and Stefanie Posavec, an American in London, mapped the particulars of their daily lives as a series of hand-drawn postcards they exchanged via mail weekly—small portraits as full of emotion as they are data, both mundane and magical. Dear Data reproduces in pinpoint detail the full year's set of cards, front and back, providing a remarkable portrait of two artists connected by their attention to the details of their lives—including complaints, distractions, phone addictions, physical contact, and desires. These details illuminate the lives of two remarkable young women and also inspire us to map our own lives, including specific suggestions on what data to draw and how. A captivating and unique book for designers, artists, correspondents, friends, and lovers everywhere.

Data Visualization Made Simple - Kristen Sosulski 2018-09-27

Data Visualization Made Simple is a practical guide to the fundamentals, strategies, and real-world cases for data visualization, an essential skill required in today's information-rich world. With foundations rooted in statistics, psychology, and computer science, data visualization offers practitioners in almost every field a coherent way to share findings from original research, big data, learning analytics, and more. In nine appealing chapters, the book: examines the role of data graphics in decision-making, sharing information, sparking discussions, and inspiring future research; scrutinizes data graphics, deliberates on the messages they convey, and looks at options for design visualization; and includes cases and interviews to provide a contemporary view of how data graphics are used by professionals across industries Both novices and seasoned designers in education, business, and other areas can use this book's effective, linear process to develop data visualization literacy and promote exploratory, inquiry-based approaches to visualization problems.

R for Data Science - Hadley Wickham 2016-12-12

Learn how to use R to turn raw data into insight, knowledge, and understanding. This book introduces you to R, RStudio, and the tidyverse, a collection of R packages designed to work together to make data science fast, fluent, and fun. Suitable for readers with no previous programming experience, *R for Data Science* is designed to get you doing data science as quickly as possible. Authors Hadley Wickham and Garrett Grolemund guide you through the steps of importing, wrangling, exploring, and modeling your data and communicating the results. You'll get a complete, big-picture understanding of the data science cycle, along with basic tools you need to manage the details. Each section of the book is paired with exercises to help you practice what you've learned along the way. You'll learn how to: Wrangle—transform your datasets into a form convenient for analysis Program—learn powerful R tools for solving data problems with greater clarity and ease Explore—examine your data, generate hypotheses, and quickly test them Model—provide a low-dimensional summary that captures true "signals" in your dataset Communicate—learn R Markdown for integrating prose,

code, and results

Big Data Visualization - James D. Miller 2017-02-28

Learn effective tools and techniques to separate big data into manageable and logical components for efficient data visualization About This Book This unique guide teaches you how to visualize your cluttered, huge amounts of big data with ease It is rich with ample options and solid use cases for big data visualization, and is a must-have book for your shelf Improve your decision-making by visualizing your big data the right way Who This Book Is For This book is for data analysts or those with a basic knowledge of big data analysis who want to learn big data visualization in order to make their analysis more useful. You need sufficient knowledge of big data platform tools such as Hadoop and also some experience with programming languages such as R. This book will be great for those who are familiar with conventional data visualizations and now want to widen their horizon by exploring big data visualizations. What You Will Learn Understand how basic analytics is affected by big data Deep dive into effective and efficient ways of visualizing big data Get to know various approaches (using various technologies) to address the challenges of visualizing big data Comprehend the concepts and models used to visualize big data Know how to visualize big data in real time and for different use cases Understand how to integrate popular dashboard visualization tools such as Splunk and Tableau Get to know the value and process of integrating visual big data with BI tools such as Tableau Make sense of the visualization options for big data, based upon the best suited visualization techniques for big data In Detail When it comes to big data, regular data visualization tools with basic features become insufficient. This book covers the concepts and models used to visualize big data, with a focus on efficient visualizations. This book works around big data visualizations and the challenges around visualizing big data and address characteristic challenges of visualizing like speed in accessing, understanding/adding context to, improving the quality of the data, displaying results, outliers, and so on. We focus on the most popular libraries to execute the tasks of big data visualization and explore "big data oriented" tools such as Hadoop and Tableau. We

will show you how data changes with different variables and for different use cases with step-through topics such as: importing data to something like Hadoop, basic analytics. The choice of visualizations depends on the most suited techniques for big data, and we will show you the various options for big data visualizations based upon industry-proven techniques. You will then learn how to integrate popular visualization tools with graphing databases to see how huge amounts of certain data. Finally, you will find out how to display the integration of visual big data with BI using Cognos BI. Style and approach With the help of insightful real-world use cases, we'll tackle data in the world of big data. The scalability and hugeness of the data makes big data visualizations different from normal data visualizations, and this book addresses all the difficulties encountered by professionals while visualizing their big data.

Head First Data Analysis - Michael Milton 2009-07-24

A guide for data managers and analyzers shares guidelines for identifying patterns, predicting future outcomes, and presenting findings to others; drawing on current research in cognitive science and learning theory while covering such additional topics as assessing data quality, handling ambiguous information, and organizing data within market groups. Original.

Better Data Visualizations - Jonathan Schwabish 2021-02-09

Now more than ever, content must be visual if it is to travel far. Readers everywhere are overwhelmed with a flow of data, news, and text. Visuals can cut through the noise and make it easier for readers to recognize and recall information. Yet many researchers were never taught how to present their work visually. This book details essential strategies to create more effective data visualizations. Jonathan Schwabish walks readers through the steps of creating better graphs and how to move beyond simple line, bar, and pie charts. Through more than five hundred examples, he demonstrates the do's and don'ts of data visualization, the principles of visual perception, and how to make subjective style decisions around a chart's design. Schwabish surveys more than eighty visualization types, from histograms to horizon charts, ridgeline plots to choropleth maps, and explains how each has its place in the visual

toolkit. It might seem intimidating, but everyone can learn how to create compelling, effective data visualizations. This book will guide you as you define your audience and goals, choose the graph that best fits for your data, and clearly communicate your message.

VISUALIZING DATA. - FRY. 2016

Data Sketches - Nadieh Bremer 2021-02-09

In *Data Sketches*, Nadieh Bremer and Shirley Wu document the deeply creative process behind 24 unique data visualization projects, and they combine this with powerful technical insights which reveal the mindset behind coding creatively. Exploring 12 different themes - from the Olympics to Presidents & Royals and from Movies to Myths & Legends - each pair of visualizations explores different technologies and forms, blurring the boundary between visualization as an exploratory tool and an artform in its own right. This beautiful book provides an intimate, behind-the-scenes account of all 24 projects and shares the authors' personal notes and drafts every step of the way. The book features: Detailed information on data gathering, sketching, and coding data visualizations for the web, with screenshots of works-in-progress and reproductions from the authors' notebooks Never-before-published technical write-ups, with beginner-friendly explanations of core data visualization concepts Practical lessons based on the data and design challenges overcome during each project Full-color pages, showcasing all 24 final data visualizations This book is perfect for anyone interested or working in data visualization and information design, and especially those who want to take their work to the next level and are inspired by unique and compelling data-driven storytelling.

[Data Visualization with Python and JavaScript](#) - Kyran Dale 2016-06-30

Learn how to turn raw data into rich, interactive web visualizations with the powerful combination of Python and JavaScript. With this hands-on guide, author Kyran Dale teaches you how build a basic dataviz toolchain with best-of-breed Python and JavaScript libraries—including Scrapy, Matplotlib, Pandas, Flask, and D3—for crafting engaging, browser-based visualizations. As a working example, throughout the book Dale walks

you through transforming Wikipedia's table-based list of Nobel Prize winners into an interactive visualization. You'll examine steps along the entire toolchain, from scraping, cleaning, exploring, and delivering data to building the visualization with JavaScript's D3 library. If you're ready to create your own web-based data visualizations—and know either Python or JavaScript—this is the book for you. Learn how to manipulate data with Python Understand the commonalities between Python and JavaScript Extract information from websites by using Python's web-scraping tools, BeautifulSoup and Scrapy Clean and explore data with Python's Pandas, Matplotlib, and Numpy libraries Serve data and create RESTful web APIs with Python's Flask framework Create engaging, interactive web visualizations with JavaScript's D3 library

Data Visualisation - Andy Kirk 2019-07-08

One of the "six best books for data geeks" - Financial Times With over 200 images and extensive how-to and how-not-to examples, this new edition has everything students and scholars need to understand and create effective data visualisations. Combining 'how to think' instruction with a 'how to produce' mentality, this book takes readers step-by-step through analysing, designing, and curating information into useful, impactful tools of communication. With this book and its extensive collection of online support, readers can: - Decide what visualisations work best for their data and their audience using the chart gallery - See data visualisation in action and learn the tools to try it themselves - Follow online checklists, tutorials, and exercises to build skills and confidence - Get advice from the UK's leading data visualisation trainer on everything from getting started to honing the craft. Explore more resources about data visualisation and Andy Kirk.

Introduction to Data Science - Rafael A. Irizarry 2019-11-20

Introduction to Data Science: Data Analysis and Prediction Algorithms with R introduces concepts and skills that can help you tackle real-world data analysis challenges. It covers concepts from probability, statistical inference, linear regression, and machine learning. It also helps you develop skills such as R programming, data wrangling, data visualization, predictive algorithm building, file organization with UNIX/Linux shell,

version control with Git and GitHub, and reproducible document preparation. This book is a textbook for a first course in data science. No previous knowledge of R is necessary, although some experience with programming may be helpful. The book is divided into six parts: R, data visualization, statistics with R, data wrangling, machine learning, and productivity tools. Each part has several chapters meant to be presented as one lecture. The author uses motivating case studies that realistically mimic a data scientist's experience. He starts by asking specific questions and answers these through data analysis so concepts are learned as a means to answering the questions. Examples of the case studies included are: US murder rates by state, self-reported student heights, trends in world health and economics, the impact of vaccines on infectious disease rates, the financial crisis of 2007-2008, election forecasting, building a baseball team, image processing of hand-written digits, and movie recommendation systems. The statistical concepts used to answer the case study questions are only briefly introduced, so complementing with a probability and statistics textbook is highly recommended for in-depth understanding of these concepts. If you read and understand the chapters and complete the exercises, you will be prepared to learn the more advanced concepts and skills needed to become an expert.

Designing Data Visualizations - Noah Iliinsky 2011-09-16

Data visualization is an efficient and effective medium for communicating large amounts of information, but the design process can often seem like an unexplainable creative endeavor. This concise book aims to demystify the design process by showing you how to use a linear decision-making process to encode your information visually. Delve into different kinds of visualization, including infographics and visual art, and explore the influences at work in each one. Then learn how to apply these concepts to your design process. Learn data visualization classifications, including explanatory, exploratory, and hybrid Discover how three fundamental influences—the designer, the reader, and the data—shape what you create Learn how to describe the specific goal of your visualization and identify the supporting data Decide the spatial position of your visual

entities with axes Encode the various dimensions of your data with appropriate visual properties, such as shape and color See visualization best practices and suggestions for encoding various specific data types *The Grammar of Graphics* - Leland Wilkinson 2013-03-09

Written for statisticians, computer scientists, geographers, research and applied scientists, and others interested in visualizing data, this book presents a unique foundation for producing almost every quantitative graphic found in scientific journals, newspapers, statistical packages, and data visualization systems. It was designed for a distributed computing environment, with special attention given to conserving computer code and system resources. While the tangible result of this work is a Java production graphics library, the text focuses on the deep structures involved in producing quantitative graphics from data. It investigates the rules that underlie pie charts, bar charts, scatterplots, function plots, maps, mosaics, and radar charts. These rules are abstracted from the work of Bertin, Cleveland, Kosslyn, MacEachren, Pinker, Tufte, Tukey, Tobler, and other theorists of quantitative graphics. *Data Visualization* - Andy Kirk 2012-01-01

A comprehensive yet quick guide to the best approaches to designing data visualizations, with real examples and illustrative diagrams. Whatever the desired outcome ensure success by following this expert design process. This book is for anyone who has responsibility for, or is interested in trying to find innovative and effective ways to visually analyze and communicate data. There is no skill, no knowledge and no role-based pre-requisites or expectations of anyone reading this book. *Info We Trust* - RJ Andrews 2019-01-03

How do we create new ways of looking at the world? Join award-winning data storyteller RJ Andrews as he pushes beyond the usual how-to, and takes you on an adventure into the rich art of informing. Creating Info We Trust is a craft that puts the world into forms that are strong and true. It begins with maps, diagrams, and charts — but must push further than dry defaults to be truly effective. How do we attract attention? How can we offer audiences valuable experiences worth their time? How can we help people access complexity? Dark and mysterious, but full of

potential, data is the raw material from which new understanding can emerge. Become a hero of the information age as you learn how to dip into the chaos of data and emerge with new understanding that can entertain, improve, and inspire. Whether you call the craft data storytelling, data visualization, data journalism, dashboard design, or infographic creation — what matters is that you are courageously confronting the chaos of it all in order to improve how people see the world. Info We Trust is written for everyone who straddles the domains of data and people: data visualization professionals, analysts, and all who are enthusiastic for seeing the world in new ways. This book draws from the entirety of human experience, quantitative and poetic. It teaches advanced techniques, such as visual metaphor and data transformations, in order to create more human presentations of data. It also shows how we can learn from print advertising, engineering, museum curation, and mythology archetypes. This human-centered approach works with machines to design information for people. Advance your understanding beyond by learning from a broad tradition of putting things “in formation” to create new and wonderful ways of opening our eyes to the world. Info We Trust takes a thoroughly original point of attack on the art of informing. It builds on decades of best practices and adds the creative enthusiasm of a world-class data storyteller. Info We Trust is lavishly illustrated with hundreds of original compositions designed to illuminate the craft, delight the reader, and inspire a generation of data storytellers.

Data Visualization Handbook - Juuso Koponen 2019-04-01

The data visualization handbook is a practical guide to creating compelling graphics to explain or explore data. It is primarily aimed for designers, journalists, researchers, analysts, and other professionals who want to learn the basics of visualization, but also includes plenty of material for people with intermediate level visualization skills.

Statistical Inference via Data Science: A Modern Dive into R and the Tidyverse - Chester Ismay 2019-12-23

Statistical Inference via Data Science: A Modern Dive into R and the Tidyverse provides a pathway for learning about statistical inference

using data science tools widely used in industry, academia, and government. It introduces the tidyverse suite of R packages, including the ggplot2 package for data visualization, and the dplyr package for data wrangling. After equipping readers with just enough of these data science tools to perform effective exploratory data analyses, the book covers traditional introductory statistics topics like confidence intervals, hypothesis testing, and multiple regression modeling, while focusing on visualization throughout. Features: ● Assumes minimal prerequisites, notably, no prior calculus nor coding experience ● Motivates theory using real-world data, including all domestic flights leaving New York City in 2013, the Gapminder project, and the data journalism website, FiveThirtyEight.com ● Centers on simulation-based approaches to statistical inference rather than mathematical formulas ● Uses the infer package for "tidy" and transparent statistical inference to construct confidence intervals and conduct hypothesis tests via the bootstrap and permutation methods ● Provides all code and output embedded directly in the text; also available in the online version at moderndive.com This book is intended for individuals who would like to simultaneously start developing their data science toolbox and start learning about the inferential and modeling tools used in much of modern-day research. The book can be used in methods and data science courses and first courses in statistics, at both the undergraduate and graduate levels.

Fundamentals of Data Visualization - Claus O. Wilke 2019-03-18

Effective visualization is the best way to communicate information from the increasingly large and complex datasets in the natural and social sciences. But with the increasing power of visualization software today, scientists, engineers, and business analysts often have to navigate a bewildering array of visualization choices and options. This practical book takes you through many commonly encountered visualization problems, and it provides guidelines on how to turn large datasets into clear and compelling figures. What visualization type is best for the story you want to tell? How do you make informative figures that are visually pleasing? Author Claus O. Wilke teaches you the elements most critical to successful data visualization. Explore the basic concepts of color as a

tool to highlight, distinguish, or represent a value Understand the importance of redundant coding to ensure you provide key information in multiple ways Use the book's visualizations directory, a graphical guide to commonly used types of data visualizations Get extensive examples of good and bad figures Learn how to use figures in a document or report and how employ them effectively to tell a compelling story

Good Charts - Scott Berinato 2016-04-26

Dataviz—the new language of business A good visualization can communicate the nature and potential impact of information and ideas more powerfully than any other form of communication. For a long time "dataviz" was left to specialists—data scientists and professional designers. No longer. A new generation of tools and massive amounts of available data make it easy for anyone to create visualizations that communicate ideas far more effectively than generic spreadsheet charts ever could. What's more, building good charts is quickly becoming a need-to-have skill for managers. If you're not doing it, other managers are, and they're getting noticed for it and getting credit for contributing to your company's success. In *Good Charts*, dataviz maven Scott Berinato provides an essential guide to how visualization works and how to use this new language to impress and persuade. Dataviz today is where spreadsheets and word processors were in the early 1980s—on the cusp of changing how we work. Berinato lays out a system for thinking visually and building better charts through a process of talking, sketching, and prototyping. This book is much more than a set of static rules for making visualizations. It taps into both well-established and cutting-edge research in visual perception and neuroscience, as well as the emerging field of visualization science, to explore why good charts (and bad ones) create "feelings behind our eyes." Along the way, Berinato also includes many engaging vignettes of dataviz pros, illustrating the ideas in practice. *Good Charts* will help you turn plain, uninspiring charts that merely present information into smart, effective visualizations that powerfully convey ideas.

Visualizing Graph Data - Corey Lanum 2016-11-23

Summary Visualizing Graph Data teaches you not only how to build

graph data structures, but also how to create your own dynamic and interactive visualizations using a variety of tools. This book is loaded with fascinating examples and case studies to show you the real-world value of graph visualizations. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Assume you are doing a great job collecting data about your customers and products. Are you able to turn your rich data into important insight? Complex relationships in large data sets can be difficult to recognize. Visualizing these connections as graphs makes it possible to see the patterns, so you can find meaning in an otherwise over-whelming sea of facts. About the Book Visualizing Graph Data teaches you how to understand graph data, build graph data structures, and create meaningful visualizations. This engaging book gently introduces graph data visualization through fascinating examples and compelling case studies. You'll discover simple, but effective, techniques to model your data, handle big data, and depict temporal and spatial data. By the end, you'll have a conceptual foundation as well as the practical skills to explore your own data with confidence. What's Inside Techniques for creating effective visualizations Examples using the Gephi and KeyLines visualization packages Real-world case studies About the Reader No prior experience with graph data is required. About the Author Corey Lanum has decades of experience building visualization and analysis applications for companies and government agencies around the globe. Table of Contents PART 1 - GRAPH VISUALIZATION BASICS Getting to know graph visualization Case studies An introduction to Gephi and KeyLines PART 2 VISUALIZE YOUR OWN DATA Data modeling How to build graph visualizations Creating interactive visualizations How to organize a chart Big data: using graphs when there's too much data Dynamic graphs: how to show data over time Graphs on maps: the where of graph visualization

Visualizing with Text - Richard Brath 2020-11-01

Visualizing with Text uncovers the rich palette of text elements usable in visualizations from simple labels through to documents. Using a multidisciplinary research effort spanning across fields including

visualization, typography, and cartography, it builds a solid foundation for the design space of text in visualization. The book illustrates many new kinds of visualizations, including microtext lines, skim formatting, and typographic sets that solve some of the shortcomings of well-known visualization techniques. Key features: More than 240 illustrations to aid inspiration of new visualizations Eight new approaches to data visualization leveraging text Quick reference guide for visualization with text Builds a solid foundation extending current visualization theory Bridges between visualization, typography, text analytics, and natural language processing The author website, including teaching exercises and interactive demos and code, can be found here. Designers, developers, and academics can use this book as a reference and inspiration for new approaches to visualization in any application that uses text.

Data Visualization - Robert Grant 2018-12-07

This is the age of data. There are more innovations and more opportunities for interesting work with data than ever before, but there is also an overwhelming amount of quantitative information being published every day. Data visualisation has become big business, because communication is the difference between success and failure, no matter how clever the analysis may have been. The ability to visualize data is now a skill in demand across business, government, NGOs and academia. Data Visualization: Charts, Maps, and Interactive Graphics gives an overview of a wide range of techniques and challenges, while staying accessible to anyone interested in working with and understanding data. Features: Focusses on concepts and ways of thinking about data rather than algebra or computer code. Features 17 short chapters that can be read in one sitting. Includes chapters on big data, statistical and machine learning models, visual perception, high-dimensional data, and maps and geographic data. Contains more than 125 visualizations, most created by the author. Supported by a website with all code for creating the visualizations, further reading, datasets and practical advice on crafting the images. Whether you are a student considering a career in data science, an analyst who wants to learn more

about visualization, or the manager of a team working with data, this book will introduce you to a broad range of data visualization methods. Cover image: Landscape of Change uses data about sea level rise, glacier

volume decline, increasing global temperatures, and the increasing use of fossil fuels. These data lines compose a landscape shaped by the changing climate, a world in which we are now living. Copyright © Jill Pelto (jillpelto.com).