The Practice of Data Visualization

Discover the principles and practices of effective data visualization in this accessible and comprehensive guide by Patrick Boily, Stephen Davies, and Jen Schellinck. Designed as both a companion to data-focused workshops and a standalone introduction, **The Practice of Data Visualization** offers a structured journey through the visual dimension of data analysis.

These course notes begins with a primer on foundational concepts, followed by chapters on human perception, visual design, accessibility, and storytelling. These parts build toward a hands-on exploration of practical tools and techniques (R, ggplot2, and Power BI); each balances theory and application, inviting readers to reflect critically on what makes a visualization clear, compelling, and meaningful.

Whether you are exploring data for insight, designing dashboards, or communicating results to stakeholders, **The Practice of Data Visualization** provides the context and clarity to do so effectively, standing on its own as a pragmatic guide for students, professionals, and anyone who seeks to make sense of data through visual means.

About the Authors

Patrick Boily is an Assistant Professor in the Department of Mathematics and Statistics at the University of Ottawa. He earned his Ph.D. in Mathematics in 2006 and is the author of seven textbooks on mathematics, statistics, and data science. Since 1999, he has taught more than 75 university-level courses and 100 data training workshops. He was an federal employee of the Government of Canada from 2008 to 2012, and he offers consulting services in data analysis and quantitative matters through Idlewyld Analytics and the Data Action Lab. Patrick is an avid hockey player, cross-country skier, cyclist, mountain biker, and swimmer; he enjoys crosswords, playing the guitar, and watching British murder mysteries. He lives with his family in Wakefield.

Stephen Davies is a seasoned corporate trainer, consultant, and educator, specializing in data and digital strategy, business intelligence, data visualization, process mapping, and statistical data modeling. He has also lectured at the Sprott School of Business, sharing his expertise with future leaders. Stephen is the CEO of DAVHILL Group; his client roster includes numerous Government of Canada departments and agencies, the Greater Toronto Airport Authority, Porter Airlines, Excellence Canada, and many others. He is also deeply engaged in Ottawa's entrepreneurship community. Stephen is an avid rugby supporter, enthusiastic gamer, craft brew connoisseur, and devoted science fiction reader. He resides in Ottawa, with his family.

Jen Schellinck is the CEO of Sysabee, a data science company. She received her PhD in Cognitive Science in 2009 and has been active in the data science and AI sphere since then, both professionally and as a regular contributor to communities of practice. Along with Patrick Boily and Stephen Davies she cofounded the Data Action Lab to provide practical, hands-on data science workshops and education to civil servants. She is an adjunct professor at the Institute of Cognitive Science at Carleton University and continues to be an active researcher in the field. Jen uses her knowledge of Artificial Intelligence, Machine Learning and Data Science to help people and organizations achieve their greater potential. She lives in Ottawa but don't be surprised if you see her in Halifax, where she grew up. When not working she's an avid enjoyer of the great outdoors: summer, winter, rain, or shine!

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