Data Understanding, Data Analysis, and Data Science

Volume 2 – Fundamentals of Data Insight

Build on your data science foundation with **Fundamentals of Data Insight**, the second volume in the **Data Understanding, Data Analysis, and Data Science** series. This volume shifts the focus from technical execution to the broader context in which data work occurs, including collaboration, communication, ethics, and decision-making.

After exploring these non-technical dimensions, readers move into essential practical skills, such as data preparation, web scraping, automated data collection, data engineering, and data management. The volume concludes with techniques for data exploration and visualization, incorporating perspectives from contributors with varied experience.

These chapters emphasize thoughtful interpretation over mechanical procedure and highlight the importance of understanding both data and context. Whether used as a companion to lectures or for self-guided study, **Fundamentals of Data Insight** encourages a reflective and well-rounded approach to working with data.

About the Author

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, available at idlewyldanalytics.com .

Since 1999, he has taught more than 75 courses at the University of Ottawa, the Université du Québec en Outaouais, and Carleton University. From 2008 to 2012, he served as a federal public servant, contributing to several projects including the award-winning Canadian Vehicle Use Study. From 2012 to 2019, he launched and managed Carleton University's Centre for Quantitative Analysis and Decision Support (CQADS), and he is a founding member of the Data Action Lab, which offers workshops, short courses, and consulting services in data analysis.

Patrick's academic work focuses on the application of mathematics and statistics to evidence-based decision support. He has provided consulting services to a wide range of public and non-profit organizations, including United Way, the Public Health Agency of Canada, the Canadian Air Transport Security Authority, and the Department of National Defence. His areas of expertise include operations research, data science and predictive analytics, stochastic modelling, and simulation.

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, Quebec.

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