

# Data Smart: Using Data Science to Transform Information into Insight

By John W. Foreman



**Data Smart: Using Data Science to Transform Information into Insight** By John W. Foreman

**Data Science** gets thrown around in the press like it's magic. Major retailers are predicting everything from when their customers are pregnant to when they want a new pair of Chuck Taylors. It's a brave new world where seemingly meaningless data can be transformed into valuable insight to drive smart business decisions.

But how does one exactly do data science? Do you have to hire one of these priests of the dark arts, the "data scientist," to extract this gold from your data? Nope.

Data science is little more than using straight-forward steps to process raw data into actionable insight. And in *Data Smart*, author and data scientist John Foreman will show you how that's done within the familiar environment of a spreadsheet.

Why a spreadsheet? It's comfortable! You get to look at the data every step of the way, building confidence as you learn the tricks of the trade. Plus, spreadsheets are a vendor-neutral place to learn data science without the hype.

But don't let the Excel sheets fool you. This is a book for those serious about learning the analytic techniques, the math and the magic, behind big data.

Each chapter will cover a different technique in a spreadsheet so you can follow along:

- Mathematical optimization, including non-linear programming and genetic algorithms
- Clustering via k-means, spherical k-means, and graph modularity
- Data mining in graphs, such as outlier detection
- Supervised AI through logistic regression, ensemble models, and bag-of-words models
- Forecasting, seasonal adjustments, and prediction intervals through monte carlo simulation

• Moving from spreadsheets into the R programming language

You get your hands dirty as you work alongside John through each technique. But never fear, the topics are readily applicable and the author laces humor throughout. You'll even learn what a dead squirrel has to do with optimization modeling, which you no doubt are dying to know.



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### **Editorial Review**

From the Back Cover

"Data Smart makes modern statistic methods and algorithms understandable and easy to implement. Slogging through textbooks and academic papers is no longer required!"

—Patrick Crosby, Founder of StatHat & first CTO at OkCupid

"When Mr. Foreman interviewed for a job at my company, he arrived dressed in a 'Kentucky Colonel' kind of suit and spoke about nonsensical things like barbecue, lasers, and orange juice pulp. Then, he explained how to de-mystify and solve just about any complex 'big data' problem in our company with simple spreadsheets. No server clusters, mainframes, or Hadoop-a-ma-jigs. Just Excel. I hired him on the spot. After reading this book, you too will learn how to use math and basic spreadsheet formulas to improve your business or, at the very least, how to trick senior executives into hiring you as their data scientist."

—Ben Chestnut, Founder & CEO of MailChimp

"You need a John Foreman on your analytics team. But if you can't have John, then reading this book is the next best thing."

-Patrick Lennon, Director of Analytics, The Coca-Cola Company

## Most people are approaching data science all wrong. Here's how to do it right.

Not to disillusion you, but data scientists are not mystical practitioners of magical arts. Data science is something you can do. Really. This book shows you the significant data science techniques, how they work, how to use them, and how they benefit your business, large or small. It's not about coding or database technologies. It's about turning raw data into insight you can act upon, and doing it as quickly and painlessly as possible.

Roll up your sleeves and let's get going.

### Relax — it's just a spreadsheet

Visit the companion website at www.wiley.com/go/datasmart to download spreadsheets for each chapter, and follow them as you learn about:

- Artificial intelligence using the general linear model, ensemble methods, and naive Bayes
- Clustering via k-means, spherical k-means, and graph modularity
- Mathematical optimization, including non-linear programming and genetic algorithms
- Working with time series data and forecasting with exponential smoothing
- Using Monte Carlo simulation to quantify and address risk
- Detecting outliers in single or multiple dimensions
- Exploring the data-science-focused R language

#### About the Author

**John W. Foreman** is Chief Data Scientist for MailChimp.com, where he leads a data science product development effort called the Email Genome Project. As an analytics consultant, John has created data

science solutions for The Coca-Cola Company, Royal Caribbean International, Intercontinental Hotels Group, Dell, the Department of Defense, the IRS, and the FBI.

#### **Users Review**

#### From reader reviews:

# David Hyman:

The book Data Smart: Using Data Science to Transform Information into Insight can give more knowledge and information about everything you want. So why must we leave the good thing like a book Data Smart: Using Data Science to Transform Information into Insight? Several of you have a different opinion about e-book. But one aim this book can give many information for us. It is absolutely correct. Right now, try to closer using your book. Knowledge or details that you take for that, you could give for each other; it is possible to share all of these. Book Data Smart: Using Data Science to Transform Information into Insight has simple shape nevertheless, you know: it has great and big function for you. You can look the enormous world by open up and read a guide. So it is very wonderful.

# **Clifford Harvey:**

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### **Lionel Gutierrez:**

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## **Herbert Gist:**

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