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# Data Analysis Using SQL and Excel

**Second Edition** 

WILEY

**Gordon S. Linoff** 

### Data Analysis Using SQL and Excel®



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Gordon S. Linoff



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To Giuseppe—for twenty five years, five books, and counting  $\ldots$ 

#### **About the Author**

Gordon S. Linoff has been working with databases, big data, and data mining for almost longer than he can remember. With decades of experience on the practice of using data effectively, he is a recognized expert in the field of data mining.

Gordon started using spreadsheets while a student at MIT, on the original Compaq Portable, the world's first luggable computer. Not very many years later, he managed a development group at the now-defunct Thinking Machines Corporation, tasked with building a massively parallel relational database for decision support.

After Thinking Machines' demise, he founded Data Miners in 1998 with his friend and former colleague Michael J. A. Berry (who left in 2012). Since then, he has worked on a wide diversity of projects across many different companies. He has taught hundreds of classes around the world on data mining and survival analysis through SAS Institute, a leader in statistical and business analytics software. He is also an avid contributor to Stack Overflow, particularly on questions related to databases, having the highest score in 2014.

Together with Michael Berry, Gordon has written several influential books on data mining, including *Data Mining Techniques for Marketing, Sales, and Customer Support*, the first book on data mining to achieve a third edition.

Gordon lives in New York with Giuseppe Scalia, his partner of 25 years.

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Although this book has only one name on the cover, many people have helped me both specifically on this book and more generally in understanding data, analysis, and presentation.

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The original idea for the book came from Nick Drake, who then worked at Datran Media. A statistician by training, Nick was looking for a book that would help him use databases for data analysis. Bob Elliott, at the time my editor at Wiley, liked the idea.

Throughout the chapters, the understanding of data processing is based on dataflows, which Craig Stanfill of Ab Initio Corporation first introduced me to long ago when we worked together at Thinking Machines Corporation.

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Over the past few years, I have been a major contributor to Stack Overflow. Along the way, I have learned an incredible amount about SQL and about how to explain concepts. A handful of people whom I've never met in person have helped in various ways. Richard Stallman invented emacs and the Free Software Foundation; emacs provided the basis for the calendar table. Rob Bovey of Applications Professional, Inc. created the X-Y chart labeler used in several chapters. The Census data set was created by the folks at the Missouri Census Data Center. Juice Analytics inspired the example for Worksheet bar charts in Chapter 5 (and thanks to Alex Wimbush, who pointed me in their direction). Edwin Straver of Frontline Systems answered several questions about Solver.

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