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The grammar of graphics. (English) Zbl 0940.68158

Statistics and Computing (Cham). New York, NY: Springer. xvii, 408 p. (1999).

Who should read this book? The simple answer is, of course, anyone who is interested in business or scientific graphics. At the most elementary level are readers who are looking for a graphical catalog or thesaurus. There are not many types of graphics that do not appear somewhere in this book. At the next level are those who want to follow the arguments without the mathematics. One can skip all the mathematics and still learn what the fundamental components of quantitative graphics are and how they interact. At the next level are those who have completed enough college mathematics to follow the notation. I have tried to build the argument, except for the statistical methods in Chapter 8, from elementary definitions. I chose a level comparable to an introductory computer science or discrete math text, and a notation that documents the algorithms in set terminology computer science students will recognize.

I intend to reach several groups. First are college and graduate students in computer science and statistics. This is the only book in print that lays out in detail how to write computer programs for business or scientific graphics. For all the attention computer graphics courses devote to theory, modeling, animation, and realism, the vast majority of commercial applications involve quantitative graphics. As a software developer, I believe the largest business market for graphics will continue to be analysis and reporting, despite the enthusiastic predictions (driven by conventional wisdom) for data mining, visualization, animation, and virtual reality. The reason, I think, is simple. People in business and science have more trouble communicating than discovering.

The second target group for this book comprises mathematicians, statisticians, and computer scientists who are not experts in quantitative graphics. I hope to be able to convey to them the richness of this field and to encourage them to explore it beyond what I have been able to do. Among his many accomplishments in the fields of graphics and statistics, William Cleveland is largely responsible for stimulating psychologists (including me) to take a closer look at graphical perception and cognition. I hope this book will stimulate experts in other fields to examine the language of graphics.

The third target group consists of statistics and computer science specialists in graphics. These are the colleagues most likely to recognize that this book is more the assembly of a large puzzle than the weaving of a whole cloth.

Reviewer: [Reviewer \(Berlin\)](#)

MSC:

[68U10](#) Computing methodologies for image processing

[68-01](#) Introductory exposition (textbooks, tutorial papers, etc.) pertaining to computer science

[62-01](#) Introductory exposition (textbooks, tutorial papers, etc.) pertaining to statistics

Cited in 1 Review
Cited in 8 Documents

Keywords:

[scientific graphics](#); [quantitative graphics](#)

Software:

[LISP-STAT](#)