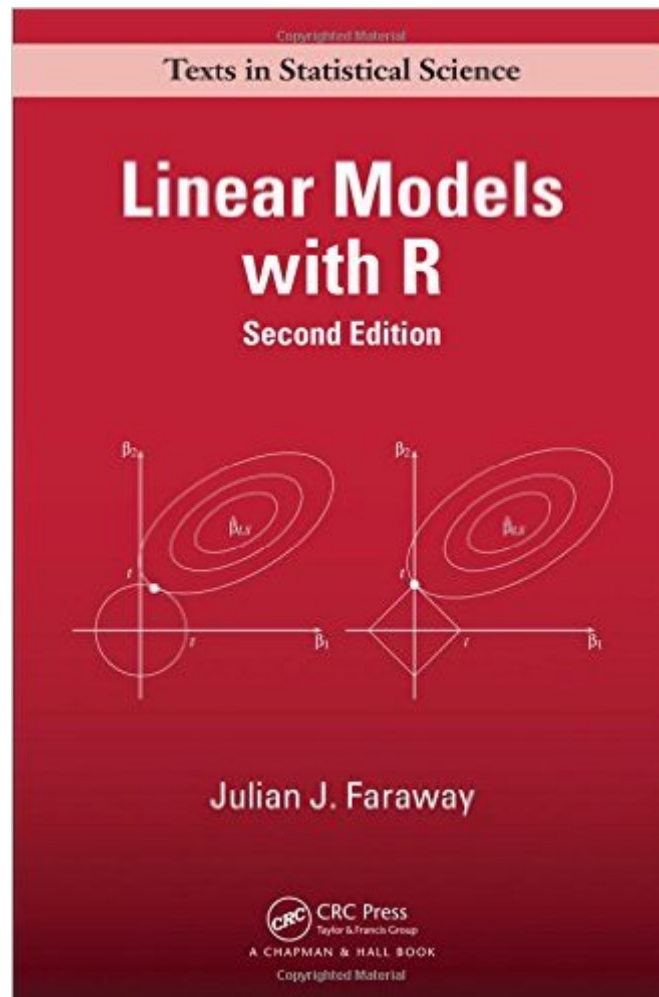# Linear Models With R, Second Edition (Chapman & Hall/CRC Texts In Statistical Science)

Synopsis

A Hands-On Way to Learning Data Analysis Part of the core of statistics, linear models are used to make predictions and explain the relationship between the response and the predictors. Understanding linear models is crucial to a broader competence in the practice of statistics. Linear Models with R, Second Edition explains how to use linear models in physical science, engineering, social science, and business applications. The book incorporates several improvements that reflect how the world of R has greatly expanded since the publication of the first edition. New to the Second Edition   Reorganized material on interpreting linear models, which distinguishes the main applications of prediction and explanation and introduces elementary notions of causality Additional topics, including QR decomposition, splines, additive models, Lasso, multiple imputation, and false discovery rates Extensive use of the ggplot2 graphics package in addition to base graphics   Like its widely praised, best-selling predecessor, this edition combines statistics and R to seamlessly give a coherent exposition of the practice of linear modeling. The text offers up-to-date insight on essential data analysis topics, from estimation, inference, and prediction to missing data, factorial models, and block designs. Numerous examples illustrate how to apply the different methods using R.

Book Information

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Customer Reviews

This is an excellent text on linear regression techniques. Rather than teaching R step by step, Dr.

Faraway jumps right in with analysis of specific data sets, listing the R commands needed to generate the given output. An hour or so after getting the book, I downloaded R and the free package from Dr. Faraway containing all of the data sets used in the book (I followed the directions in the very short Appendix A), and I, too, was trying out the given commands on the data sets referred to in the exercises for the first chapter.Dr. Faraway is particularly good in his discussions of interpreting the output from linear regression problems. A standout chapter is the one on using regression for modelling vs. using regression for prediction. I also learned a lot from the chapter on principal components, a topic I remember covering in Grad school, but which I confess I didn't really understand at the time. Dr. Faraway's explanation of the procedure is excellent, and he uses an example in which it is possible to explain what the selected components represent in terms of the original problem, but he points out that this is not always possible; sometimes you just have to be content with accurate predictions, but no ideas as to what the principal components represent. I wish I had been told this the first time I learned the procedure.If I like the book so much, why only four stars? Well, I do have a few minor quibbles. I would have liked an index of R commands, so that if you remember a command, but can't remember the correct syntax for using the command, you could find the page on which it first appeared. I would also have liked an index of data sets, so that I could quickly find every exercise set that referenced the teengamb data set, say. But these are minor complaints.

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