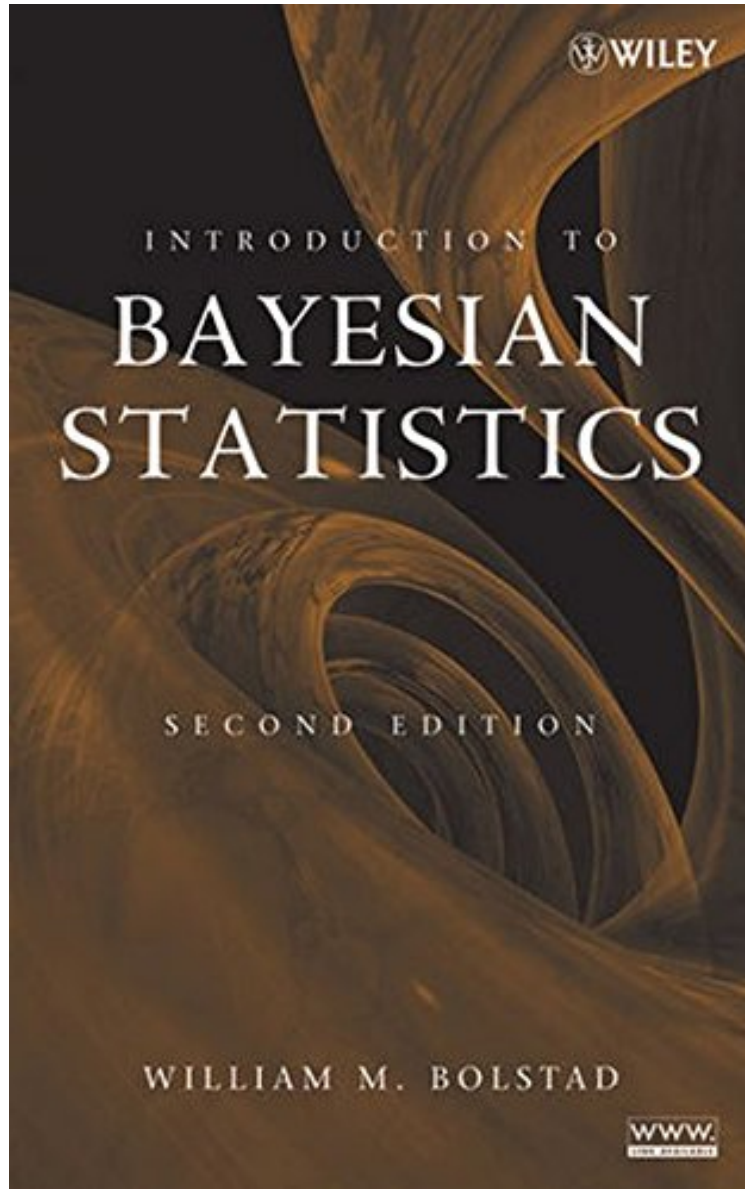


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## Introduction to Bayesian Statistics, 2nd Edition

*William M. Bolstad*

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**William M. Bolstad : Introduction to Bayesian Statistics, 2nd Edition** before purchasing it in order to gage whether or not it would be worth my time, and all praised Introduction to Bayesian Statistics, 2nd Edition:

2 of 2 people found the following review helpful. A very good introduction to the field of Bayesian statistics for graduate ...By Simon van der Salma very good introduction to the field of Bayesian statistics for graduate students.

The author expects the student to have basic knowledge of the usual frequentist statistics, in particular probability theory, and a firm knowledge of undergraduate calculus. This book by Bolstad introduces and thoroughly explains all the Bayesian posterior inference instrumentation for separate and conjugate distributions like the beta-binomial, the Poisson-gamma, the normal and their applications. In all chapters the differences between frequentist and Bayesian statistical inference is highlighted and discussed. In every chapter the student finds a number of more theoretical exercises, more or less the same as the examples, which can be solved without computer aid, and a number of exercises that needs the availability of Minitab and the R-language. I think the book could have done by the without-computer exercises alone, because the computer exercises don't seem to offer the reader much more understanding of the material. But this is a minor point. Of course, the student can skip those exercises if he wants to do so. In short: a very good book that I can recommend to professors for their graduate students.

1 of 1 people found the following review helpful. Great book for a first-timer in statistics or in Bayesian ...By Eli GottliebClear and succinct explanations of the Bayesian view on probability and on statistical concepts are provided, starting from the concepts of random variable, inductive reasoning, and propositional logic and working up to give the student a full statistical toolbox. Exercises yield additional insight. Great book for a first-timer in statistics or in Bayesian reasoning.

5 of 6 people found the following review helpful. Purchased for a course, good introductionBy M. GosseThe book is just what it says, an introduction to Bayesian statistics. Some prior statistics knowledge would be helpful, for example in understanding what a cumulative density function is, and while some calculus knowledge would allow the reader to undertake some calculations manually, the book comes with Minitab macros and an R package to supplement the content of those programs for the calculus grunt work. There is one appendix each on working with the Minitab macros and R package. I'm using R and the package is working fine with the 64-bit version of R 2.12.1. Setting aside that such a book necessarily involves mathematics, the text itself is written in plain English and there are worked examples to assist the reader in their learning of the concepts presented in each chapter. In addition, there are exercises at the end of each chapter, with answers provided for the odd-numbered ones. If you were like me, studied statistics at university and barely covered Bayesian statistics, this is a good book for you. In particular, I think it is helpful that there are separate chapters on discrete and continuous applications of Bayesian statistics. While I have purchased this text specifically for a course, I believe that the book is suitable for readers who are not formally studying Bayesian statistics.

Praise for the First Edition "I cannot think of a better book for teachers of introductory statistics who want a readable and pedagogically sound text to introduce Bayesian statistics." *Statistics in Medical Research* "[This book] is written in a lucid conversational style, which is so rare in mathematical writings. It does an excellent job of presenting Bayesian statistics as a perfectly reasonable approach to elementary problems in statistics." *STATS: The Magazine for Students of Statistics*, American Statistical Association "Bolstad offers clear explanations of every concept and method making the book accessible and valuable to undergraduate and graduate students alike." *Journal of Applied Statistics*

The use of Bayesian methods in applied statistical analysis has become increasingly popular, yet most introductory statistics texts continue to only present the subject using frequentist methods. *Introduction to Bayesian Statistics, Second Edition* focuses on Bayesian methods that can be used for inference, and it also addresses how these methods compare favorably with frequentist alternatives. Teaching statistics from the Bayesian perspective allows for direct probability statements about parameters, and this approach is now more relevant than ever due to computer programs that allow practitioners to work on problems that contain many parameters. This book uniquely covers the topics typically found in an introductory statistics book but from a Bayesian perspective giving readers an advantage as they enter fields where statistics is used. This Second Edition provides: Extended coverage of Poisson and Gamma distributions Two new chapters on Bayesian inference for Poisson observations and Bayesian inference for the standard deviation for normal observations A twenty-five percent increase in exercises with selected answers at the end of the book A calculus refresher appendix and a summary on the use of statistical tables New computer exercises that use R functions and Minitab macros for Bayesian analysis and Monte Carlo simulations

*Introduction to Bayesian Statistics, Second Edition* is an invaluable textbook for advanced undergraduate and graduate-level statistics courses as well as a practical reference for statisticians who require a working knowledge of Bayesian statistics.

"The general tenor of this book is good and it should serve well as a text for an introductory statistics course taught from a Bayesian perspective." (*Biometrics*, September 2008) "Like the first edition, this edition is useful and effective in teaching Bayesian inference at both elementary and intermediate levels. It is a well-written book on elementary Bayesian inference, and the material is easily accessible. It is both concise and timely, and provides a good collection of overviews and reviews of important tools used in Bayesian statistical methods." (*Technometrics*, November 2008) "Like the first edition, this edition is useful and effective in teaching Bayesian inference at both elementary and intermediate levels. It is a well-written book on elementary Bayesian inference, and the material is easily accessible. It is both concise and timely, and provides a good collection of overviews and reviews of important tools used in Bayesian statistical methods." (*Technometrics*, November 2008) "Highly recommended. Upper-division

undergraduates; graduate students; professionals." (CHOICE, April 2008) From the Back Cover Praise for the First Edition "I cannot think of a better book for teachers of introductory statistics who want a readable and pedagogically sound text to introduce Bayesian statistics." *Statistics in Medical Research* "[This book] is written in a lucid conversational style, which is so rare in mathematical writings. It does an excellent job of presenting Bayesian statistics as a perfectly reasonable approach to elementary problems in statistics." *STATS: The Magazine for Students of Statistics*, American Statistical Association "Bolstad offers clear explanations of every concept and method making the book accessible and valuable to undergraduate and graduate students alike." *Journal of Applied Statistics* The use of Bayesian methods in applied statistical analysis has become increasingly popular, yet most introductory statistics texts continue to only present the subject using frequentist methods. *Introduction to Bayesian Statistics, Second Edition* focuses on Bayesian methods that can be used for inference, and it also addresses how these methods compare favorably with frequentist alternatives. Teaching statistics from the Bayesian perspective allows for direct probability statements about parameters, and this approach is now more relevant than ever due to computer programs that allow practitioners to work on problems that contain many parameters. This book uniquely covers the topics typically found in an introductory statistics book but from a Bayesian perspective giving readers an advantage as they enter fields where statistics is used. This Second Edition provides: Extended coverage of Poisson and Gamma distributions Two new chapters on Bayesian inference for Poisson observations and Bayesian inference for the standard deviation for normal observations A twenty-five percent increase in exercises with selected answers at the end of the book A calculus refresher appendix and a summary on the use of statistical tables New computer exercises that use R functions and Minitab macros for Bayesian analysis and Monte Carlo simulations *Introduction to Bayesian Statistics, Second Edition* is an invaluable textbook for advanced undergraduate and graduate-level statistics courses as well as a practical reference for statisticians who require a working knowledge of Bayesian statistics. About the Author William M. Bolstad, PhD, is Senior Lecturer in the Department of Statistics at The University of Waikato, New Zealand. He holds degrees from the University of Missouri, Stanford University, and The University of Waikato. Dr. Bolstad's research interests include Bayesian statistics, MCMC methods, recursive estimation techniques, multiprocess dynamic time series models, and forecasting.