Bayesian Biostatistics. Statistics in Practice

Description: The growth of biostatistics has been phenomenal in recent years and has been marked by considerable technical innovation in both methodology and computational practicality. One area that has experienced significant growth is Bayesian methods. The growing use of Bayesian methodology has taken place partly due to an increasing number of practitioners valuing the Bayesian paradigm as matching that of scientific discovery. In addition, computational advances have allowed for more complex models to be fitted routinely to realistic data sets.

Through examples, exercises and a combination of introductory and more advanced chapters, this book provides an invaluable understanding of the complex world of biomedical statistics illustrated via a diverse range of applications taken from epidemiology, exploratory clinical studies, health promotion studies, image analysis and clinical trials.

Key Features:

- Provides an authoritative account of Bayesian methodology, from its most basic elements to its practical implementation, with an emphasis on healthcare techniques.
- Contains introductory explanations of Bayesian principles common to all areas of application.
- Presents clear and concise examples in biostatistics applications such as clinical trials, longitudinal studies, bioassay, survival, image analysis and bioinformatics.
- Illustrated throughout with examples using software including WinBUGS, OpenBUGS, SAS and various dedicated R programs.
- Highlights the differences between the Bayesian and classical approaches.
- Supported by an accompanying website hosting free software and case study guides.

Bayesian Biostatistics introduces the reader smoothly into the Bayesian statistical methods with chapters that gradually increase in level of complexity. Master students in biostatistics, applied statisticians and all researchers with a good background in classical statistics who have interest in Bayesian methods will find this book useful.

Contents:

Preface xiii

Notation, terminology and some guidance for reading the book xvii

Part I BASIC CONCEPTS IN BAYESIAN METHODS

1 Modes of statistical inference 3
   1.1 The frequentist approach: A critical reflection 4
   1.2 Statistical inference based on the likelihood function 10
   1.3 The Bayesian approach: Some basic ideas 14
   1.4 Outlook 18

2 Bayes theorem: Computing the posterior distribution 20
   2.1 Introduction 20
   2.2 Bayes theorem the binary version 20
   2.3 Probability in a Bayesian context 21
   2.4 Bayes theorem the categorical version 22
   2.5 Bayes theorem the continuous version 23
   2.6 The binomial case 24
   2.7 The Gaussian case 30
   2.8 The Poisson case 36
   2.9 The prior and posterior distribution of h( ) 40
   2.10 Bayesian versus likelihood approach 40
17 Final chapter 456
17.1 What this book covered 456
17.2 Additional Bayesian developments 456
17.3 Alternative reading 459

Appendix: Distributions 460
A.1 Introduction 460
A.2 Continuous univariate distributions 461
A.3 Discrete univariate distributions 477
A.4 Multivariate distributions 481

References 484

Index 509


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