

1. Record Nr.	UNINA9911019459403321
Autore	Congdon P
Titolo	Bayesian models for categorical data // Peter Congdon
Pubbl/distr/stampa	Chichester ; ; New York, : Wiley, c2005
ISBN	9786610287703 9781280287701 1280287705 9780470092392 0470092394 9780470092385 0470092386
Descrizione fisica	1 online resource (448 p.)
Collana	Wiley series in probability and statistics
Disciplina	519.5/42
Soggetti	Bayesian statistical decision theory Monte Carlo method Markov processes Multivariate analysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Bayesian Models for Categorical Data; Contents; Preface; Chapter 1 Principles of Bayesian Inference; 1.1 Bayesian updating; 1.2 MCMC techniques; 1.3 The basis for MCMC; 1.4 MCMC sampling algorithms; 1.5 MCMC convergence; 1.6 Competing models; 1.7 Setting priors; 1.8 The normal linear model and generalized linear models; 1.9 Data augmentation; 1.10 Identifiability; 1.11 Robustness and sensitivity; 1.12 Chapter themes; References; Chapter 2 Model Comparison and Choice; 2.1 Introduction: formal methods, predictive methods and penalized deviance criteria; 2.2 Formal Bayes model choice 2.3 Marginal likelihood and Bayes factor approximations 2.4 Predictive model choice and checking; 2.5 Posterior predictive checks; 2.6 Out-of-sample cross-validation; 2.7 Penalized deviances from a Bayes perspective; 2.8 Multimodel perspectives via parallel sampling; 2.9 Model probability estimates from parallel sampling; 2.10 Worked

example; References; Chapter 3 Regression for Metric Outcomes; 3.1 Introduction: priors for the linear regression model; 3.2 Regression model choice and averaging based on predictor selection; 3.3 Robust regression methods: models for outliers  
 3.4 Robust regression methods: models for skewness and heteroscedasticity  
 3.5 Robustness via discrete mixture models; 3.5.1 Complete data representation; 3.5.2 Identification issues; 3.5.3 Dirichlet process mixture models; 3.6 Non-linear regression effects via splines and other basis functions; 3.6.1 Penalized random effects for spline coefficients; 3.6.2 Basis function regression; 3.6.3 Special spline functions; 3.7 Dynamic linear models and their application in non-parametric regression; 3.7.1 Some common forms of DLM; 3.7.2 Robust errors; 3.7.3 General additive models  
 3.7.4 Alternative smoothness priors  
 Exercises; References; Chapter 4 Models for Binary and Count Outcomes; 4.1 Introduction: discrete model likelihoods vs. data augmentation; 4.1.1 Count data; 4.1.2 Binomial and binary data; 4.2 Estimation by data augmentation: the Albert-Chib method; 4.2.1 Other augmented data methods; 4.3 Model assessment: outlier detection and model checks; 4.3.1 Model assessment: predictive model selection and checks; 4.4 Predictor selection in binary and count regression; 4.5 Contingency tables  
 4.6 Semi-parametric and general additive models for binomial and count responses  
 4.6.1 Robust and adaptive non-parametric regression; 4.6.2 Other approaches to non-linearity; Exercises; References; Chapter 5 Further Questions in Binomial and Count Regression; 5.1 Generalizing the Poisson and binomial: overdispersion and robustness; 5.2 Continuous mixture models; 5.2.1 Modified exponential families; 5.3 Discrete mixtures; 5.4 Hurdle and zero-inflated models; 5.5 Modelling the link function; 5.5.1 Discrete (DPP mixture); 5.5.2 Parametric link transformations  
 5.5.3 Beta mixture on cumulative densities

---

Sommario/riassunto

The use of Bayesian methods for the analysis of data has grown substantially in areas as diverse as applied statistics, psychology, economics and medical science. Bayesian Methods for Categorical Data sets out to demystify modern Bayesian methods, making them accessible to students and researchers alike. Emphasizing the use of statistical computing and applied data analysis, this book provides a comprehensive introduction to Bayesian methods of categorical outcomes.\* Reviews recent Bayesian methodology for categorical outcomes (binary, count and multinomial data).\* Considers missing da

---