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| 1. Record Nr. | UNINA9910145045003321 |
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| Titolo | Bayesian models for categorical data [[electronic resource] /] / Peter Congdon |
| Pubbl/distr/stampa | Chichester ; ; New York, : Wiley, c2005 |
| ISBN | 1-280-28770-5 9786610287703 0-470-09239-4 0-470-09238-6 |
| Descrizione fisica | 1 online resource (448 p.) |
| Collana | Wiley series in probability and statistics |
| Disciplina | 519.542 |
| Soggetti | Bayesian statistical decision theory Monte Carlo method Markov processes Multivariate analysis Electronic books. |
| 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 approximations2.4 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
