1. Record Nr. UNINA9911020345803321

Autore	Jackman Simon <1966->
Titolo	Bayesian analysis for the social sciences / / Simon Jackman
Pubbl/distr/stampa	Hoboken, NJ, : Wiley, 2009
ISBN	9786612354793 9781282354791 1282354795 9780470686621 0470686626 9780470686638 0470686634
Descrizione fisica	1 online resource (609 p.)
Collana	Wiley series in probability and statistics. ; ; v.846
Disciplina	519.5 519.542
Soggetti	Social sciences - Statistical methods Bayesian statistical decision theory
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 Analysis for the Social Sciences; Contents; List of Figures; List of Tables; Preface; Acknowledgments; Introduction; Part I Introducing Bayesian Analysis; 1 The foundations of Bayesian inference; 1.1 What is probability?; 1.1.1 Probability in classical statistics; 1.1.2 Subjective probability; 1.2 Subjective probability in Bayesian statistics; 1.3 Bayes theorem, discrete case; 1.4 Bayes theorem, continuous parameter; 1.4.1 Conjugate priors; 1.4.2 Bayesian updating with irregular priors; 1.4.3 Cromwell's Rule; 1.4.4 Bayesian updating as information accumulation 1.5 Parameters as random variables, beliefs as distributions1.6 Communicating the results of a Bayesian analysis; 1.6.1 Bayesian point estimation; 1.6.2 Credible regions; 1.7 Asymptotic properties of posterior distributions; 1.8 Bayesian hypothesis testing; 1.8.1 Model choice; 1.8.2 Bayes factors; 1.9 From subjective beliefs to parameters and models; 1.9.1 Exchangeability; 1.9.2 Implications and extensions

of de Finetti's Representation Theorem; 1.9.3 Finite exchangeability; 1.9.4 Exchangeability and prediction; 1.9.5 Conditional exchangeability and multiparameter models
1.9.6 Exchangeability of parameters: hierarchical modeling1.10 Historical note; 2 Getting started: Bayesian analysis for simple models; 2.1 Learning about probabilities, rates and proportions; 2.1.1 Conjugate priors for probabilities, rates and proportions; 2.1.2 Bayes estimates as weighted averages of priors and data; 2.1.3 Parameterizations and priors; 2.1.4 The variance of the posterior density; 2.2 Associations between binary variables; 2.3 Learning from counts; 2.3.1 Predictive inference with count data; 2.4 Learning about a normal mean and variance; 2.4.1 Variance known
2.4.2 Mean and variance unknown2.4.3 Conditionally conjugate prior; 2.4.4 An improper, reference prior; 2.4.5 Conflict between likelihood and prior; 2.4.6 Non-conjugate priors; 2.5 Regression models; 2.5.1 Bayesian regression analysis; 2.5.2 Likelihood function; 2.5.3 Conjugate prior; 2.5.4 Improper, reference prior; 2.6 Further reading; Part II Simulation Based Bayesian Analysis; 3 Monte Carlo methods; 3.1 Simulation consistency; 3.2 Inference for functions of parameters; 3.3 Marginalization via Monte Carlo integration; 3.4 Sampling algorithms; 3.4.1 Inverse-CDF method
3.4.2 Importance sampling3.4.3 Accept-reject sampling; 3.4.4 Adaptive rejection sampling; 3.5 Further reading; 4 Markov chains; 4.1 Notation and definitions; 4.1.1 State space; 4.1.2 Transition kernel; 4.2 Properties of Markov chains; 4.2.1 Existence of a stationary distribution, discrete case; 4.2.2 Existence of a stationary distribution, continuous case; 4.2.3 Irreducibility; 4.2.4 Recurrence; 4.2.5 Invariant measure; 4.2.6 Reversibility; 4.2.7 Aperiodicity; 4.3 Convergence of Markov chains; 4.3.1 Speed of convergence; 4.4 Limit theorems for Markov chains; 4.4.1 Simulation inefficiency
4.4.2 Central limit theorems for Markov chains

Sommario/riassunto

Bayesian methods are increasingly being used in the social sciences, as the problems encountered lend themselves so naturally to the subjective qualities of Bayesian methodology. This book provides an accessible introduction to Bayesian methods, tailored specifically for social science students. It contains lots of real examples from political science, psychology, sociology, and economics, exercises in all chapters, and detailed descriptions of all the key concepts, without assuming any background in statistics beyond a first course. It features examples of how to implement the methods using W