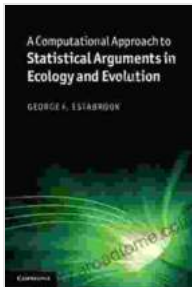


Computational Approach To Statistical Arguments In Ecology And Evolution

This book provides a comprehensive overview of the computational approaches to statistical arguments in ecology and evolution. It covers a wide range of topics, including Bayesian statistics, frequentist statistics, maximum likelihood estimation, and Markov chain Monte Carlo methods. The book also includes a number of case studies that illustrate the application of these approaches to real-world problems.



A Computational Approach to Statistical Arguments in Ecology and Evolution by George F. Estabrook

★★★★★ 5 out of 5

Language : English
File size : 3470 KB
Text-to-Speech : Enabled
Screen Reader : Supported
Enhanced typesetting : Enabled
Word Wise : Enabled
Print length : 265 pages



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- Bayesian Statistics
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Statistical arguments play a vital role in ecology and evolution. They allow us to make inferences about the natural world based on data. In recent years, there has been a growing interest in using computational approaches to statistical arguments. These approaches offer a number of advantages over traditional methods, including the ability to handle large datasets, the ability to perform complex calculations, and the ability to visualize data in new ways.

Bayesian Statistics

Bayesian statistics is a branch of statistics that uses Bayes' theorem to make inferences about the probability of events. Bayes' theorem is a powerful tool that allows us to update our beliefs about the world as we learn new information. In ecology and evolution, Bayesian statistics has been used to a wide range of problems, including the estimation of population sizes, the analysis of genetic data, and the modeling of ecological systems.

Frequentist Statistics

Frequentist statistics is a branch of statistics that uses the concept of probability to make inferences about the world. Frequentist statistics is based on the idea of sampling distributions. A sampling distribution is a distribution of all possible sample statistics that could be obtained from a given population. In ecology and evolution, frequentist statistics has been used to a wide range of problems, including the testing of hypotheses, the estimation of confidence intervals, and the analysis of variance.

Maximum Likelihood Estimation

Maximum likelihood estimation is a method of estimating the parameters of a statistical model. Maximum likelihood estimation involves finding the values of the parameters that make the observed data most likely. In ecology and evolution, maximum likelihood estimation has been used to a wide range of problems, including the estimation of population sizes, the analysis of genetic data, and the modeling of ecological systems.

Markov Chain Monte Carlo Methods

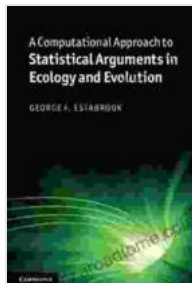
Markov chain Monte Carlo (MCMC) methods are a class of algorithms that can be used to generate samples from a probability distribution. MCMC methods are often used to sample from distributions that are difficult to sample from directly. In ecology and evolution, MCMC methods have been used to a wide range of problems, including the estimation of population sizes, the analysis of genetic data, and the modeling of ecological systems.

Case Studies

This book includes a number of case studies that illustrate the application of computational approaches to statistical arguments in ecology and evolution. These case studies cover a wide range of topics, including the estimation of population sizes, the analysis of genetic data, and the modeling of ecological systems.

This book provides a comprehensive overview of the computational approaches to statistical arguments in ecology and evolution. It covers a wide range of topics, including Bayesian statistics, frequentist statistics, maximum likelihood estimation, and Markov chain Monte Carlo methods. The book also includes a number of case studies that illustrate the

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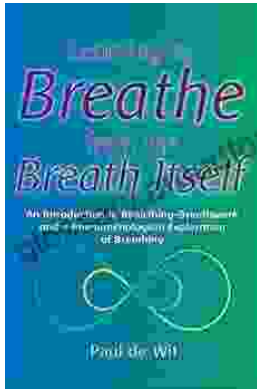
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