Logistic Regression From Introductory To Advanced Concepts And Applications

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Logistic Regression From Introductory To Advanced Concepts And Applications

GRIFFIN MAYA

Introductory Statistics with R John Wiley & Sons Practical Guide to Logistic Regression covers the key points of the basic logistic regression model and illustrates how to use it properly to model a binary response variable. This powerful methodology can be used to analyze data from various fields, including medical and health outcomes research, business analytics and data science, ecology, fishe Interpretable Machine Learning Cambridge University Press Multiple Regression: A Practical Introduction is a text for an advanced undergraduate or beginning graduate course in statistics for social science and related fields. Also, students preparing for more advanced courses can self-study the text to refresh and solidify their statistical background. Drawing on decades of teaching this material, the authors present the ideas in an approachable and nontechnical manner, with no expectation that readers have more than a standard introductory statistics course as background. Multiple regression asks how a dependent variable is related to, or predicted by, a set of independent variables. The book includes many interesting example analyses and interpretations, along with exercises. Each dataset used for the examples and exercises is small enough for readers to easily grasp the entire dataset and its analysis with respect to the specific statistical techniques covered. A website for the book includes SPSS, Stata, SAS, and R code and commands for each type of analysis or recoding of variables in the book. Solutions to two of the end-of-chapter exercise types are also available for students to practice. The instructor side of the site contains editable PowerPoint slides, other solutions, and a test bank. Applications of Regression Models in Epidemiology John Wiley & Sons

Ordinal measures provide a simple and convenient way to distinguish among possible outcomes. The book provides practical guidance on using ordinal outcome models.

Regression Methods in Biostatistics SAGE

This book is about making machine learning models and their

Practical Guide to Logistic Regression Lulu.com

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In many areas of science a basic task is to assess the influence of several factors on a quantity of interest. If this quantity is binary logistic, regression models provide a powerful tool for this purpose. This monograph presents an account of the use of logistic regression in the case where missing values in the variables prevent the use of standard techniques. Such situations occur frequently across a wide range of statistical applications. The emphasis of this book is on methods related to the classical maximum likelihood principle. The author reviews the essentials of logistic regression and discusses the variety of mechanisms which might cause missing values while the rest of the book covers the methods which may be used to deal with missing values and their effectiveness. Researchers across a range of disciplines and graduate students in statistics and biostatistics will find this a readable account of this.

An Introduction to Statistical Learning CRC Press The primary focus here is on log-linear models for contingency tables, but in this second edition, greater emphasis has been placed on logistic regression. The book explores topics such as logistic discrimination and generalised linear models, and builds upon the relationships between these basic models for continuous data and the analogous log-linear and logistic regression models for discrete data. It also carefully examines the differences in model interpretations and evaluations that occur due to the discrete nature of the data. Sample commands are given for analyses in SAS, BMFP, and GLIM, while numerous data sets from fields as diverse as engineering, education, sociology, and medicine are used to illustrate procedures and provide exercises. Throughout the book, the treatment is designed for students with prior knowledge of analysis of variance and regression. An Introduction to Generalized Linear Models Wiley-Interscience Trying to determine when to use a logistic regression and how to interpret the coefficients? Frustrated by the technical writing in other books on the topic? Pampel's book offers readers the first "nuts and bolts" approach to doing logist Statistics i Springer Science & Business Media

Emphasizing the parallels between linear and logistic regression, Scott Menard explores logistic regression analysis and methods presented. Since the goal of this textbook is to facilitate the use of these statistical learning techniques by practitioners in science, industry, and other fields, each chapter contains a tutorial on implementing the analyses and methods presented in R, an extremely popular open source statistical software platform. Two of the authors co-wrote The Elements of Statistical Learning (Hastie, Tibshirani and Friedman, 2nd edition 2009), a popular reference book for statistics and machine learning researchers. An Introduction to Statistical Learning covers many of the same topics, but at a level accessible to a much broader audience. This book is targeted at statisticians and non-statisticians alike who wish to use cutting-edge statistical learning techniques to analyze their data. The text assumes only a previous course in linear regression and no knowledge of matrix algebra. This Second Edition features new chapters on deep learning, survival analysis, and multiple testing, as well as expanded treatments of naïve Bayes, generalized linear models, Bayesian additive regression trees, and matrix completion. R code has been updated throughout to ensure compatibility.

Regression and Other Stories SAGE

This book provides an elementary-level introduction to R, targeting both non-statistician scientists in various fields and students of statistics. The main mode of presentation is via code examples with liberal commenting of the code and the output, from the computational as well as the statistical viewpoint. Brief sections introduce the statistical methods before they are used. A supplementary R package can be downloaded and contains the data sets. All examples are directly runnable and all graphics in the text are generated from the examples. The statistical methodology covered includes statistical standard distributions, one- and two-sample tests with continuous data, regression analysis, one-and two-way analysis of variance, regression analysis, analysis of tabular data, and sample size calculations. In addition, the last four chapters contain introductions to multiple linear regression analysis, linear models in general, logistic regression, and survival analysis.

Regression & Linear Modeling SAGE Publications, Incorporated From the reviews of the First Edition. "An interesting, useful, and well-written book on logistic regression models . . . Hosmer and Lemeshow have used very little mathematics, have presented difficult concepts heuristically and through illustrative examples, and have included references." - Choice "Well written, clearly organized, and comprehensive . . . the authors carefully walk the reader through the estimation of interpretation of coefficients from a wide variety of logistic regression models . . . their careful explication of the quantitative re-expression of coefficients from these various models is excellent." —Contemporary Sociology "An extremely well-written book that will certainly prove an invaluable acquisition to the practicing statistician who finds other literature on analysis of discrete data hard to follow or heavily theoretical." -The Statistician In this revised and updated edition of their popular book, David Hosmer and Stanley Lemeshow continue to provide an amazingly accessible introduction to the logistic regression model while incorporating advances of the last decade, including a variety of software packages for the analysis of data sets. Hosmer and Lemeshow extend the discussion from biostatistics and epidemiology to cutting-edge applications in data mining and machine learning, guiding readers step-by-step through the use of modeling techniques for dichotomous data in diverse fields. Ample new topics and expanded discussions of existing material are accompanied by a wealth of real-world examples-with extensive data sets available over the Internet. Introduction to Logistic Regression Models Springer Science & **Business Media** Here is a unified, readable introduction to multipredictor regression methods in biostatistics, including linear models for continuous outcomes, logistic models for binary outcomes, the Cox model for right-censored survival times, and generalized linear models for counts and other outcomes. The authors describe shared elements in methods for selecting, estimating, checking, and interpreting each model, and show that these regression methods deal with confounding, mediation, and interaction of causal effects in essentially the same way. <u>Statistics i</u> Wiley-Interscience

decisions interpretable. After exploring the concepts of interpretability, you will learn about simple, interpretable models such as decision trees, decision rules and linear regression. Later chapters focus on general model-agnostic methods for interpreting black box models like feature importance and accumulated local effects and explaining individual predictions with Shapley values and LIME. All interpretation methods are explained in depth and discussed critically. How do they work under the hood? What are their strengths and weaknesses? How can their outputs be interpreted? This book will enable you to select and correctly apply the interpretation method that is most suitable for your machine learning project.

Applied Logistic Regression Analysis SAGE Publications A Comprehensive Account for Data Analysts of the Methods and Applications of Regression Analysis. Written by two established experts in the field, the purpose of the Handbook of Regression Analysis is to provide a practical, one-stop reference on regression analysis. The focus is on the tools that both practitioners and researchers use in real life. It is intended to be a comprehensive collection of the theory, methods, and applications of regression methods, but it has been deliberately written at an accessible level. The handbook provides a guick and convenient reference or "refresher" on ideas and methods that are useful for the effective analysis of data and its resulting interpretations. Students can use the book as an introduction to and/or summary of key concepts in regression and related course work (including linear, binary logistic, multinomial logistic, count, and nonlinear regression models). Theory underlying the methodology is presented when it advances conceptual understanding and is always supplemented by hands-on examples. References are supplied for readers wanting more detailed material on the topics discussed in the book. R code and data for all of the analyses described in the book are available via an author-maintained website. "I enjoyed the presentation of the Handbook, and I would be happy to recommend this nice handy book as a reference to my students. The clarity of the writing and proper choices of examples allows the presentations of many statisticalmethods shine. The quality of the examples at the end of each chapter is a strength. They entail explanations of the resulting R outputs and successfully guide readers to interpret them." American Statistician

demonstrates its usefulness in analyzing dichotomous, polytomous nominal, and polytomous ordinal dependent variables. The book is aimed at readers with a background in bivariate and multiple linear regression. *An Introduction to Generalized Linear Models* CRC Press A practical approach to using regression and computation to solve real-world problems of estimation, prediction, and causal inference.

Introduction to Linear Regression Analysis John Wiley & Sons A new edition of the definitive guide to logistic regression modeling for health science and other applications This thoroughly expanded Third Edition provides an easily accessible introduction to the logistic regression (LR) model and highlights the power of this model by examining the relationship between a dichotomous outcome and a set of covariables. Applied Logistic Regression, Third Edition emphasizes applications in the health sciences and handpicks topics that best suit the use of modern statistical software. The book provides readers with state-of-theart techniques for building, interpreting, and assessing the performance of LR models. New and updated features include: A chapter on the analysis of correlated outcome data A wealth of additional material for topics ranging from Bayesian methods to assessing model fit Rich data sets from real-world studies that demonstrate each method under discussion Detailed examples and interpretation of the presented results as well as exercises throughout Applied Logistic Regression, Third Edition is a musthave guide for professionals and researchers who need to model nominal or ordinal scaled outcome variables in public health, medicine, and the social sciences as well as a wide range of other fields and disciplines.

Logistic Regression Models SAGE

An Introduction to Statistical Learning provides an accessible overview of the field of statistical learning, an essential toolset for making sense of the vast and complex data sets that have emerged in fields ranging from biology to finance to marketing to astrophysics in the past twenty years. This book presents some of the most important modeling and prediction techniques, along with relevant applications. Topics include linear regression, classification, resampling methods, shrinkage approaches, treebased methods, support vector machines, clustering, deep learning, survival analysis, multiple testing, and more. Color graphics and real-world examples are used to illustrate the

Providing a thorough introduction to generalized linear models (GLM), exponential family distribution & maximum likelihood estimation, this book includes discussion on checking model adequacy & description on how to use a popular statistical software programme, SAS, to fit GLM.

Interaction Effects in Logistic Regression John Wiley & Sons From the reviews of the First Edition. "An interesting, useful, and well-written book on logistic regression models. . . Hosmer and Lemeshow have used very little mathematics, have presented difficult concepts heuristically and through illustrative examples, and have included references.

The SAGE Handbook of Regression Analysis and Causal Inference SAGE Publications

The focus in this Second Edition is again on logistic regression models for individual level data, but aggregate or grouped data are also considered. The book includes detailed discussions of goodness of fit, indices of predictive efficiency, and standardized logistic regression coefficients, and examples using SAS and SPSS are included. More detailed consideration of grouped as opposed to case-wise data throughout the book Updated discussion of the properties and appropriate use of goodness of fit measures, Rsquare analogues, and indices of predictive efficiency Discussion of the misuse of odds ratios to represent risk ratios, and of overdispersion and under-dispersion for grouped data Updated coverage of unordered and ordered polytomous logistic regression models.

Multiple Regression Springer Nature

This text on logistic regression methods contains the following eight chapters: 1 Introduction to Logistic Regression 2 Important Special Cases of the Logistic Model 3 Computing the Odds Ratio in Logistic Regression 4 Maximum Likelihood Techniques: An Overview 5 Statistical Inferences Using Maximum Likelihood Techniques 6 Modeling Strategy Guidelines 7 Modeling Strategy for Assessing Interaction and Confounding 8 Analysis of Matched Data Using Logistic Regression Each chapter contains a presentation of its topic in "lecture-book" format together with objectives, an outline, key formulae, practice exercises, and a test. The "lecture-book" has a sequence of illustrations and formulae in the left column of each page and a script in the right column. This format allows you to read the script in conjunction with the illustrations and formulae that high light the main points, formulae, or examples being presented. The reader mayaiso purchase directly from the author audio-cassette tapes of each chapter. If you purchase the tapes, you may use the tape with the illustrations and formulae, ignoring the script. The use of the audiotape with the illustrations and formulae is intended to be similar to a lecture. An audio cassette player is the only equipment required. Tapes may be obtained by writing or calling the author at the following address: Depart ment of Epidemiology, School of Public Health, Emory University, 1599 Clifton Rd. N. E. , Atlanta, GA 30333, phone (404) 727-9667. This text is intended for self-study.

An Introduction to Logistic Regression SAGE Publications In a conversational tone, Regression & Linear Modeling provides conceptual, user-friendly coverage of the generalized linear model (GLM). Readers will become familiar with applications of ordinary least squares (OLS) regression, binary and multinomial logistic regression, ordinal regression, Poisson regression, and loglinear models. Author Jason W. Osborne returns to certain themes throughout the text, such as testing assumptions, examining data quality, and, where appropriate, nonlinear and non-additive effects modeled within different types of linear models.