

## Applied Analytics Using Sas Enterprise Miner Course Notes

Applied Data Mining for Forecasting Using SAS  
Decision Trees for Business Intelligence and Data Mining  
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Applied Data Mining  
Decision Trees for Analytics Using SAS Enterprise Miner  
Cody's Data Cleaning Techniques Using SAS, Third Edition  
Programming Collective Intelligence  
Data Analysis Plans: A Blueprint for Success Using SAS  
SAS Programming and Data Visualization Techniques  
Unstructured Data Analytics Handbook of Statistical Analysis and Data Mining Applications  
Developing Credit Risk Models Using SAS Enterprise Miner and SAS/STAT  
Text Mining and Analysis  
Statistical Data Mining Using SAS Applications  
Customer Segmentation and Clustering Using SAS Enterprise Miner, Third Edition  
Time Series Analysis Using SAS Enterprise Guide  
Fundamentals of Predictive Analytics with JMP, Second Edition  
Statistical Data Analysis Using SAS  
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Practical Business Analytics Using SAS  
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Applied Analytics Using SAS Enterprise Miner 5  
Applied Analytics through Case Studies Using SAS and R  
Applying Data Science  
Data Mining Using SAS Enterprise Miner  
A Handbook of Statistical Graphics Using SAS ODS  
Business Analytics Using SAS Enterprise Guide and SAS Enterprise Miner  
Mastering Machine Learning with Python in Six Steps  
SAS Certification Prep Guide  
Applied Analytics through Case Studies Using SAS and R

### Applied Data Mining for Forecasting Using SAS

This tutorial for data analysts new to SAS Enterprise Guide and SAS Enterprise Miner provides valuable experience using powerful statistical software to complete the kinds of business analytics common to most industries. This beginner's guide with clear, illustrated, step-by-step instructions will lead you through examples based on business case studies. You will formulate the business objective, manage the data, and perform analyses that you can use to optimize marketing, risk, and customer relationship management, as well as business processes and human resources. Topics include descriptive analysis, predictive modeling and analytics, customer segmentation, market analysis, share-of-wallet analysis, penetration analysis, and business intelligence. --

### Decision Trees for Business Intelligence and Data Mining

The guide to targeting and leveraging business opportunities using big data & analytics By leveraging big data & analytics,

businesses create the potential to better understand, manage, and strategically exploiting the complex dynamics of customer behavior. Analytics in a Big Data World reveals how to tap into the powerful tool of data analytics to create a strategic advantage and identify new business opportunities. Designed to be an accessible resource, this essential book does not include exhaustive coverage of all analytical techniques, instead focusing on analytics techniques that really provide added value in business environments. The book draws on author Bart Baesens' expertise on the topics of big data, analytics and its applications in e.g. credit risk, marketing, and fraud to provide a clear roadmap for organizations that want to use data analytics to their advantage, but need a good starting point. Baesens has conducted extensive research on big data, analytics, customer relationship management, web analytics, fraud detection, and credit risk management, and uses this experience to bring clarity to a complex topic. Includes numerous case studies on risk management, fraud detection, customer relationship management, and web analytics Offers the results of research and the author's personal experience in banking, retail, and government Contains an overview of the visionary ideas and current developments on the strategic use of analytics for business Covers the topic of data analytics in easy-to-understand terms without an undo emphasis on mathematics and the minutiae of statistical analysis For organizations looking to enhance their capabilities via data analytics, this resource is the go-to reference for leveraging data to enhance business capabilities.

### **Applied Analytics Using SAS Enterprise Miner 5.3 Course Notes**

This book presents the basic procedures for utilizing SAS Enterprise Guide to analyze statistical data. SAS Enterprise Guide is a graphical user interface (point and click) to the main SAS application. Each chapter contains a brief conceptual overview and then guides the reader through concrete step-by-step examples to complete the analyses. The eleven sections of the book cover a wide range of statistical procedures including descriptive statistics, correlation and simple regression, t tests, one-way chi square, data transformations, multiple regression, analysis of variance, analysis of covariance, multivariate analysis of variance, factor analysis, and canonical correlation analysis. Designed to be used either as a stand-alone resource or as an accompaniment to a statistics course, the book offers a smooth path to statistical analysis with SAS Enterprise Guide for advanced undergraduate and beginning graduate students, as well as professionals in psychology, education, business, health, social work, sociology, and many other fields.

### **Applied Data Mining**

Applied Data Mining for Forecasting Using SAS, by Tim Rey, Arthur Kordon, and Chip Wells, introduces and describes approaches for mining large time series data sets. Written for forecasting practitioners, engineers, statisticians, and economists, the book details how to select useful candidate input variables for time series regression models in environments when the number of candidates is large, and identifies the correlation structure between selected candidate

inputs and the forecast variable.

## **Decision Trees for Analytics Using SAS Enterprise Miner**

### **Cody's Data Cleaning Techniques Using SAS, Third Edition**

Examine business problems and use a practical analytical approach to solve them by implementing predictive models and machine learning techniques using SAS and the R analytical language. This book is ideal for those who are well-versed in writing code and have a basic understanding of statistics, but have limited experience in implementing predictive models and machine learning techniques for analyzing real world data. The most challenging part of solving industrial business problems is the practical and hands-on knowledge of building and deploying advanced predictive models and machine learning algorithms. Applied Analytics through Case Studies Using SAS and R is your answer to solving these business problems by sharpening your analytical skills. What You'll Learn Understand analytics and basic data concepts Use an analytical approach to solve Industrial business problems Build predictive model with machine learning techniques Create and apply analytical strategies Who This Book Is For Data scientists, developers, statisticians, engineers, and research students with a great theoretical understanding of data and statistics who would like to enhance their skills by getting practical exposure in data modeling.

### **Programming Collective Intelligence**

Written in Ron Cody's signature informal, tutorial style, this book develops and demonstrates data cleaning programs and macros that you can use as written or modify which will make your job of data cleaning easier, faster, and more efficient. --

### **Data Analysis Plans: A Blueprint for Success Using SAS**

« Written for business analysts, data scientists, statisticians, students, predictive modelers, and data miners, this comprehensive text provides examples that will strengthen your understanding of the essential concepts and methods of predictive modeling. »--

### **SAS Programming and Data Visualization Techniques**

SAS Programming and Data Visualization Techniques: A Power User's Guide brings together a wealth of ideas about

strategic and tactical solutions to everyday situations experienced when transferring, extracting, processing, analyzing, and reporting the valuable data you have at your fingertips. Best, you can achieve most of the solutions using the SAS components you already license, meaning that this book's insights can keep you from throwing money at problems needlessly. Author Philip R. Holland advises a broad range of clients throughout Europe and the United States as an independent consultant and founder of Holland Numerics Ltd, a SAS technical consultancy. In this book he explains techniques—through code samples and example—that will enable you to increase your knowledge of all aspects of SAS programming, improve your coding productivity, and interface SAS with other programs. He also provides an expert's overview of Graph Templates, which was recently moved into Base SAS. You will learn to create attractive, standardized, reusable, and platform-independent graphs—both statistical and non-statistical—to help you and your business users explore, visualize, and capitalize on your company's data. In addition, you will find many examples and cases pertaining to healthcare, finance, retail, and other industries. Among other things, SAS Programming and Data Visualization Techniques will show you how to: Write efficient and reusable SAS code Combine look-up data sets with larger data sets effectively Run R and Perl from SAS Run SAS programs from SAS Studio and Enterprise Guide Output data into insightful, valuable charts and graphs SAS Programming and Data Visualization Techniques prepares you to make better use of your existing SAS components by learning to use the newest features, improve your coding efficiency, help you develop applications that are easier to maintain, and make data analysis easier. In other words, it will save you time, money, and effort—and make you a more valuable member of the development team. What You'll Learn How to write more efficient SAS code—either code that runs quicker, code that is easier to maintain, or both How to do more with the SAS components you already license How to take advantage of the newest features in SAS How to interface external applications with SAS software How to create graphs using SAS ODS Graphics Who This Book Is For SAS programmers wanting to improve their existing programming skills, and programming managers wanting to make better use of the SAS software they already license.

### **Unstructured Data Analytics**

Understanding your customers is the key to your company's success! Segmentation is one of the first and most basic machine learning methods. It can be used by companies to understand their customers better, boost relevance of marketing messaging, and increase efficacy of predictive models. In Customer Segmentation and Clustering Using SAS Enterprise Miner, Third Edition, Randy Collica explains, in step-by-step fashion, the most commonly available techniques for segmentation using the powerful data mining software SAS Enterprise Miner. A working guide that uses real-world data, this new edition will show you how to segment customers more intelligently and achieve the one-to-one customer relationship that your business needs. Step-by-step examples and exercises, using a number of machine learning and data mining techniques, clearly illustrate the concepts of segmentation and clustering in the context of customer relationship management. The book includes four parts, each of which increases in complexity. Part 1 reviews the basics of

segmentation and clustering at an introductory level, providing examples from a variety of industries. Part 2 offers an in-depth treatment of segmentation with practical topics, such as when and how to update your models. Part 3 goes beyond traditional segmentation practices to introduce recommended strategies for clustering product affinities, handling missing data, and incorporating textual records into your predictive model with SAS Text Miner. Finally, part 4 takes segmentation to a new level with advanced techniques, such as clustering of product associations, developing segmentation-scoring models from customer survey data, combining segmentations using ensemble segmentation, and segmentation of customer transactions. New to the third edition is a chapter that focuses on predictive models within microsegments and combined segments, and a new parallel process technique is introduced using SAS Factory Miner. In addition, all examples have been updated to the latest version of SAS Enterprise Miner.

### **Handbook of Statistical Analysis and Data Mining Applications**

Examine business problems and use a practical analytical approach to solve them by implementing predictive models and machine learning techniques using SAS and the R analytical language. This book is ideal for those who are well-versed in writing code and have a basic understanding of statistics, but have limited experience in implementing predictive models and machine learning techniques for analyzing real world data. The most challenging part of solving industrial business problems is the practical and hands-on knowledge of building and deploying advanced predictive models and machine learning algorithms. Applied Analytics through Case Studies Using SAS and R is your answer to solving these business problems by sharpening your analytical skills. What You'll Learn Understand analytics and basic data concepts Use an analytical approach to solve Industrial business problems Build predictive model with machine learning techniques Create and apply analytical strategies Who This Book Is For Data scientists, developers, statisticians, engineers, and research students with a great theoretical understanding of data and statistics who would like to enhance their skills by getting practical exposure in data modeling.

### **Developing Credit Risk Models Using SAS Enterprise Miner and SAS/STAT**

Practical Business Analytics Using SAS: A Hands-on Guide shows SAS users and businesspeople how to analyze data effectively in real-life business scenarios. The book begins with an introduction to analytics, analytical tools, and SAS programming. The authors—both SAS, statistics, analytics, and big data experts—first show how SAS is used in business, and then how to get started programming in SAS by importing data and learning how to manipulate it. Besides illustrating SAS basic functions, you will see how each function can be used to get the information you need to improve business performance. Each chapter offers hands-on exercises drawn from real business situations. The book then provides an overview of statistics, as well as instruction on exploring data, preparing it for analysis, and testing hypotheses. You will

learn how to use SAS to perform analytics and model using both basic and advanced techniques like multiple regression, logistic regression, and time series analysis, among other topics. The book concludes with a chapter on analyzing big data. Illustrations from banking and other industries make the principles and methods come to life. Readers will find just enough theory to understand the practical examples and case studies, which cover all industries. Written for a corporate IT and programming audience that wants to upgrade skills or enter the analytics field, this book includes: More than 200 examples and exercises, including code and datasets for practice. Relevant examples for all industries. Case studies that show how to use SAS analytics to identify opportunities, solve complicated problems, and chart a course. Practical Business Analytics Using SAS: A Hands-on Guide gives you the tools you need to gain insight into the data at your fingertips, predict business conditions for better planning, and make excellent decisions. Whether you are in retail, finance, healthcare, manufacturing, government, or any other industry, this book will help your organization increase revenue, drive down costs, improve marketing, and satisfy customers better than ever before.

### **Text Mining and Analysis**

Leverage the full potential of SAS to get unique, actionable insights from your data Key Features Build enterprise-class data solutions using SAS and become well-versed in SAS programming Work with different data structures, and run SQL queries to manipulate your data Explore essential concepts and techniques with practical examples to confidently pass the SAS certification exam Book Description SAS is one of the leading enterprise tools in the world today when it comes to data management and analysis. It enables the fast and easy processing of data and helps you gain valuable business insights for effective decision-making. This book will serve as a comprehensive guide that will prepare you for the SAS certification exam. After a quick overview of the SAS architecture and components, the book will take you through the different approaches to importing and reading data from different sources using SAS. You will then cover SAS Base and 4GL, understanding data management and analysis, along with exploring SAS functions for data manipulation and transformation. Next, you'll discover SQL procedures and get up to speed on creating and validating queries. In the concluding chapters, you'll learn all about data visualization, right from creating bar charts and sample geographic maps through to assigning patterns and formats. In addition to this, the book will focus on macro programming and its advanced aspects. By the end of this book, you will be well versed in SAS programming and have the skills you need to easily handle and manage your data-related problems in SAS. What you will learn Explore a variety of SAS modules and packages for efficient data analysis Use SAS 4GL functions to manipulate, merge, sort, and transform data Gain useful insights into advanced PROC SQL options in SAS to interact with data Get to grips with SAS Macro and define your own macros to share data Discover the different graphical libraries to shape and visualize data with Apply the SAS Output Delivery System to prepare detailed reports Who this book is for Budding or experienced data professionals who want to get started with SAS will benefit from this book. Those looking to prepare for the SAS certification exam will also find this book to be a useful

resource. Some understanding of basic data management concepts will help you get the most out of this book.

### **Statistical Data Mining Using SAS Applications**

Combine complex concepts facing the financial sector with the software toolsets available to analysts. The credit decisions you make are dependent on the data, models, and tools that you use to determine them. *Developing Credit Risk Models Using SAS Enterprise Miner and SAS/STAT: Theory and Applications* combines both theoretical explanation and practical applications to define as well as demonstrate how you can build credit risk models using SAS Enterprise Miner and SAS/STAT and apply them into practice. The ultimate goal of credit risk is to reduce losses through better and more reliable credit decisions that can be developed and deployed quickly. In this example-driven book, Dr. Brown breaks down the required modeling steps and details how this would be achieved through the implementation of SAS Enterprise Miner and SAS/STAT. Users will solve real-world risk problems as well as comprehensively walk through model development while addressing key concepts in credit risk modeling. The book is aimed at credit risk analysts in retail banking, but its applications apply to risk modeling outside of the retail banking sphere. Those who would benefit from this book include credit risk analysts and managers alike, as well as analysts working in fraud, Basel compliancy, and marketing analytics. It is targeted for intermediate users with a specific business focus and some programming background is required. Efficient and effective management of the entire credit risk model lifecycle process enables you to make better credit decisions. *Developing Credit Risk Models Using SAS Enterprise Miner and SAS/STAT: Theory and Applications* demonstrates how practitioners can more accurately develop credit risk models as well as implement them in a timely fashion.

### **Customer Segmentation and Clustering Using SAS Enterprise Miner, Third Edition**

Explore fundamental to advanced Python 3 topics in six steps, all designed to make you a worthy practitioner. This updated version's approach is based on the "six degrees of separation" theory, which states that everyone and everything is a maximum of six steps away and presents each topic in two parts: theoretical concepts and practical implementation using suitable Python 3 packages. You'll start with the fundamentals of Python 3 programming language, machine learning history, evolution, and the system development frameworks. Key data mining/analysis concepts, such as exploratory analysis, feature dimension reduction, regressions, time series forecasting and their efficient implementation in Scikit-learn are covered as well. You'll also learn commonly used model diagnostic and tuning techniques. These include optimal probability cutoff point for class creation, variance, bias, bagging, boosting, ensemble voting, grid search, random search, Bayesian optimization, and the noise reduction technique for IoT data. Finally, you'll review advanced text mining techniques, recommender systems, neural networks, deep learning, reinforcement learning techniques and their implementation. All the code presented in the book will be available in the form of iPython notebooks to enable you to try

out these examples and extend them to your advantage. What You'll Learn Understand machine learning development and frameworks Assess model diagnosis and tuning in machine learning Examine text mining, natural language processing (NLP), and recommender systems Review reinforcement learning and CNN Who This Book Is For Python developers, data engineers, and machine learning engineers looking to expand their knowledge or career into machine learning area.

### **Time Series Analysis Using SAS Enterprise Guide**

The fun and easy way to learn to use this leading business intelligence tool Written by an author team who is directly involved with SAS, this easy-to-follow guide is fully updated for the latest release of SAS and covers just what you need to put this popular software to work in your business. SAS allows any business or enterprise to improve data delivery, analysis, reporting, movement across a company, data mining, forecasting, statistical analysis, and more. SAS For Dummies, 2nd Edition gives you the necessary background on what SAS can do for you and explains how to use the Enterprise Guide. SAS provides statistical and data analysis tools to help you deal with all kinds of data: operational, financial, performance, and more Places special emphasis on Enterprise Guide and other analytical tools, covering all commonly used features Covers all commonly used features and shows you the practical applications you can put to work in your business Explores how to get various types of data into the software and how to work with databases Covers producing reports and Web reporting tools, analytics, macros, and working with your data In the easy-to-follow, no-nonsense For Dummies format, SAS For Dummies gives you the knowledge and the confidence to get SAS working for your organization. Note: CD-ROM/DVD and other supplementary materials are not included as part of eBook file.

### **Fundamentals of Predictive Analytics with JMP, Second Edition**

Written for students in undergraduate and graduate statistics courses, as well as for the practitioner who wants to make better decisions from data and models, this updated and expanded second edition of Fundamentals of Predictive Analytics with JMP(R) bridges the gap between courses on basic statistics, which focus on univariate and bivariate analysis, and courses on data mining and predictive analytics. Going beyond the theoretical foundation, this book gives you the technical knowledge and problem-solving skills that you need to perform real-world multivariate data analysis. First, this book teaches you to recognize when it is appropriate to use a tool, what variables and data are required, and what the results might be. Second, it teaches you how to interpret the results and then, step-by-step, how and where to perform and evaluate the analysis in JMP . Using JMP 13 and JMP 13 Pro, this book offers the following new and enhanced features in an example-driven format: an add-in for Microsoft Excel Graph Builder dirty data visualization regression ANOVA logistic regression principal component analysis LASSO elastic net cluster analysis decision trees k-nearest neighbors neural networks bootstrap forests boosted trees text mining association rules model comparison With today's emphasis on

business intelligence, business analytics, and predictive analytics, this second edition is invaluable to anyone who needs to expand his or her knowledge of statistics and to apply real-world, problem-solving analysis. This book is part of the SAS Press program.

### **Statistical Data Analysis Using SAS**

Easily Use SAS to Produce Your Graphics Diagrams, plots, and other types of graphics are indispensable components in nearly all phases of statistical analysis, from the initial assessment of the data to the selection of appropriate statistical models to the diagnosis of the chosen models once they have been fitted to the data. Harnessing the full graphics capabilities of SAS, *A Handbook of Statistical Graphics Using SAS ODS* covers essential graphical methods needed in every statistician's toolkit. It explains how to implement the methods using SAS 9.4. The handbook shows how to use SAS to create many types of statistical graphics for exploring data and diagnosing fitted models. It uses SAS's newer ODS graphics throughout as this system offers a number of advantages, including ease of use, high quality of results, consistent appearance, and convenient semiautomatic graphs from the statistical procedures. Each chapter deals graphically with several sets of example data from a wide variety of areas, such as epidemiology, medicine, and psychology. These examples illustrate the use of graphic displays to give an overview of data, to suggest possible hypotheses for testing new data, and to interpret fitted statistical models. The SAS programs and data sets are available online.

### **Analytics in a Big Data World**

The most thorough and up-to-date introduction to data mining techniques using SAS Enterprise Miner. The Sample, Explore, Modify, Model, and Assess (SEMMA) methodology of SAS Enterprise Miner is an extremely valuable analytical tool for making critical business and marketing decisions. Until now, there has been no single, authoritative book that explores every node relationship and pattern that is a part of the Enterprise Miner software with regard to SEMMA design and data mining analysis. *Data Mining Using SAS Enterprise Miner* introduces readers to a wide variety of data mining techniques and explains the purpose of-and reasoning behind-every node that is a part of the Enterprise Miner software. Each chapter begins with a short introduction to the assortment of statistics that is generated from the various nodes in SAS Enterprise Miner v4.3, followed by detailed explanations of configuration settings that are located within each node. Features of the book include: The exploration of node relationships and patterns using data from an assortment of computations, charts, and graphs commonly used in SAS procedures A step-by-step approach to each node discussion, along with an assortment of illustrations that acquaint the reader with the SAS Enterprise Miner working environment Descriptive detail of the powerful Score node and associated SAS code, which showcases the important of managing, editing, executing, and creating custom-designed Score code for the benefit of fair and comprehensive business decision-making Complete

coverage of the wide variety of statistical techniques that can be performed using the SEMMA nodes. An accompanying Web site that provides downloadable Score code, training code, and data sets for further implementation, manipulation, and interpretation as well as SAS/IML software programming code. This book is a well-crafted study guide on the various methods employed to randomly sample, partition, graph, transform, filter, impute, replace, cluster, and process data as well as interactively group and iteratively process data while performing a wide variety of modeling techniques within the process flow of the SAS Enterprise Miner software. Data Mining Using SAS Enterprise Miner is suitable as a supplemental text for advanced undergraduate and graduate students of statistics and computer science and is also an invaluable, all-encompassing guide to data mining for novice statisticians and experts alike.

### **Practical Business Analytics Using SAS**

Written for anyone involved in the data preparation process for analytics, Gerhard Svolba's Data Preparation for Analytics Using SAS offers practical advice in the form of SAS coding tips and tricks, and provides the reader with a conceptual background on data structures and considerations from a business point of view. The tasks addressed include viewing analytic data preparation in the context of its business environment, identifying the specifics of predictive modeling for data mart creation, understanding the concepts and considerations of data preparation for time series analysis, using various SAS procedures and SAS Enterprise Miner for scoring, creating meaningful derived variables for all data mart types, using powerful SAS macros to make changes among the various data mart structures, and more!

### **Data Analysis Using SAS**

This tutorial for data analysts new to SAS Enterprise Guide and SAS Enterprise Miner provides valuable experience using powerful statistical software to complete the kinds of business analytics common to most industries. Today's businesses increasingly use data to drive decisions that keep them competitive. Especially with the influx of big data, the importance of data analysis to improve every dimension of business cannot be overstated. Data analysts are therefore in demand; however, many hires and prospective hires, although talented with respect to business and statistics, lack the know-how to perform business analytics with advanced statistical software. Business Analytics Using SAS Enterprise Guide and SAS Enterprise Miner is a beginner's guide with clear, illustrated, step-by-step instructions that will lead you through examples based on business case studies. You will formulate the business objective, manage the data, and perform analyses that you can use to optimize marketing, risk, and customer relationship management, as well as business processes and human resources. Topics include descriptive analysis, predictive modeling and analytics, customer segmentation, market analysis, share-of-wallet analysis, penetration analysis, and business intelligence. This book is part of the SAS Press program.

## **Applying Predictive Analytics**

Data mining can be defined as the process of selection, exploration and modelling of large databases, in order to discover models and patterns. The increasing availability of data in the current information society has led to the need for valid tools for its modelling and analysis. Data mining and applied statistical methods are the appropriate tools to extract such knowledge from data. Applications occur in many different fields, including statistics, computer science, machine learning, economics, marketing and finance. This book is the first to describe applied data mining methods in a consistent statistical framework, and then show how they can be applied in practice. All the methods described are either computational, or of a statistical modelling nature. Complex probabilistic models and mathematical tools are not used, so the book is accessible to a wide audience of students and industry professionals. The second half of the book consists of nine case studies, taken from the author's own work in industry, that demonstrate how the methods described can be applied to real problems. Provides a solid introduction to applied data mining methods in a consistent statistical framework Includes coverage of classical, multivariate and Bayesian statistical methodology Includes many recent developments such as web mining, sequential Bayesian analysis and memory based reasoning Each statistical method described is illustrated with real life applications Features a number of detailed case studies based on applied projects within industry Incorporates discussion on software used in data mining, with particular emphasis on SAS Supported by a website featuring data sets, software and additional material Includes an extensive bibliography and pointers to further reading within the text Author has many years experience teaching introductory and multivariate statistics and data mining, and working on applied projects within industry A valuable resource for advanced undergraduate and graduate students of applied statistics, data mining, computer science and economics, as well as for professionals working in industry on projects involving large volumes of data - such as in marketing or financial risk management.

## **Business Analytics Using SAS Enterprise Guide and SAS Enterprise Miner**

Decision Trees for Analytics Using SAS Enterprise Miner is the most comprehensive treatment of decision tree theory, use, and applications available in one easy-to-access place. This book illustrates the application and operation of decision trees in business intelligence, data mining, business analytics, prediction, and knowledge discovery. It explains in detail the use of decision trees as a data mining technique and how this technique complements and supplements data mining approaches such as regression, as well as other business intelligence applications that incorporate tabular reports, OLAP, or multidimensional cubes. An expanded and enhanced release of Decision Trees for Business Intelligence and Data Mining Using SAS Enterprise Miner, this book adds up-to-date treatments of boosting and high-performance forest approaches and rule induction. There is a dedicated section on the most recent findings related to bias reduction in variable selection. It provides an exhaustive treatment of the end-to-end process of decision tree construction and the respective considerations

and algorithms, and it includes discussions of key issues in decision tree practice. Analysts who have an introductory understanding of data mining and who are looking for a more advanced, in-depth look at the theory and methods of a decision tree approach to business intelligence and data mining will benefit from this book.

### **Hands-On SAS for Data Analysis**

### **Visual Analytics and Interactive Technologies: Data, Text and Web Mining Applications**

This example-driven guide illustrates the application and operation of decision trees in data mining, business intelligence, business analytics, prediction, and knowledge discovery. It explains in detail the use of decision trees as a data mining technique and how this technique complements and supplements other business intelligence applications.

### **Data Analysis Using SAS Enterprise Guide**

See how data science can answer the questions your business faces! Applying Data Science: Business Case Studies Using SAS, by Gerhard Svolba, shows you the benefits of analytics, how to gain more insight into your data, and how to make better decisions. In eight entertaining and real-world case studies, Svolba combines data science and advanced analytics with business questions, illustrating them with data and SAS code. The case studies range from a variety of fields, including performing headcount survival analysis for employee retention, forecasting the demand for new projects, using Monte Carlo simulation to understand outcome distribution, among other topics. The data science methods covered include Kaplan-Meier estimates, Cox Proportional Hazard Regression, ARIMA models, Poisson regression, imputation of missing values, variable clustering, and much more! Written for business analysts, statisticians, data miners, data scientists, and SAS programmers, Applying Data Science bridges the gap between high-level, business-focused books that skimp on the details and technical books that only show SAS code with no business context.

### **Data Preparation for Analytics Using SAS**

Handbook of Statistical Analysis and Data Mining Applications, Second Edition, is a comprehensive professional reference book that guides business analysts, scientists, engineers and researchers, both academic and industrial, through all stages of data analysis, model building and implementation. The handbook helps users discern technical and business problems, understand the strengths and weaknesses of modern data mining algorithms and employ the right statistical methods for practical application. This book is an ideal reference for users who want to address massive and complex datasets with

novel statistical approaches and be able to objectively evaluate analyses and solutions. It has clear, intuitive explanations of the principles and tools for solving problems using modern analytic techniques and discusses their application to real problems in ways accessible and beneficial to practitioners across several areas—from science and engineering, to medicine, academia and commerce. Includes input by practitioners for practitioners Includes tutorials in numerous fields of study that provide step-by-step instruction on how to use supplied tools to build models Contains practical advice from successful real-world implementations Brings together, in a single resource, all the information a beginner needs to understand the tools and issues in data mining to build successful data mining solutions Features clear, intuitive explanations of novel analytical tools and techniques, and their practical applications

### **Analysis of Clinical Trials Using SAS**

Must-have study guide for the SAS® Certified Statistical Business Analyst Using SAS®9: Regression and Modeling exam! Written for both new and experienced SAS programmers, the SAS® Certification Prep Guide: Statistical Business Analysis Using SAS®9 is an in-depth prep guide for the SAS® Certified Statistical Business Analyst Using SAS®9: Regression and Modeling exam. The authors step through identifying the business question, generating results with SAS, and interpreting the output in a business context. The case study approach uses both real and simulated data to master the content of the certification exam. Each chapter also includes a quiz aimed at testing the reader's comprehension of the material presented. Major topics include: ANOVA Linear Regression Logistic Regression Inputs for Predictive Modeling Model Performance For those new to statistical topics or those needing a review of statistical foundations, this book also serves as an excellent reference guide for understanding descriptive and inferential statistics. Appendices can be found here.

### **Applied Health Analytics and Informatics Using SAS**

Want to tap the power behind search rankings, product recommendations, social bookmarking, and online matchmaking? This fascinating book demonstrates how you can build Web 2.0 applications to mine the enormous amount of data created by people on the Internet. With the sophisticated algorithms in this book, you can write smart programs to access interesting datasets from other web sites, collect data from users of your own applications, and analyze and understand the data once you've found it. Programming Collective Intelligence takes you into the world of machine learning and statistics, and explains how to draw conclusions about user experience, marketing, personal tastes, and human behavior in general -- all from information that you and others collect every day. Each algorithm is described clearly and concisely with code that can immediately be used on your web site, blog, Wiki, or specialized application. This book explains: Collaborative filtering techniques that enable online retailers to recommend products or media Methods of clustering to detect groups of similar items in a large dataset Search engine features -- crawlers, indexers, query engines, and the PageRank algorithm

Optimization algorithms that search millions of possible solutions to a problem and choose the best one Bayesian filtering, used in spam filters for classifying documents based on word types and other features Using decision trees not only to make predictions, but to model the way decisions are made Predicting numerical values rather than classifications to build price models Support vector machines to match people in online dating sites Non-negative matrix factorization to find the independent features in a dataset Evolving intelligence for problem solving -- how a computer develops its skill by improving its own code the more it plays a game Each chapter includes exercises for extending the algorithms to make them more powerful. Go beyond simple database-backed applications and put the wealth of Internet data to work for you. "Bravo! I cannot think of a better way for a developer to first learn these algorithms and methods, nor can I think of a better way for me (an old AI dog) to reinvigorate my knowledge of the details." -- Dan Russell, Google "Toby's book does a great job of breaking down the complex subject matter of machine-learning algorithms into practical, easy-to-understand examples that can be directly applied to analysis of social interaction across the Web today. If I had this book two years ago, it would have saved precious time going down some fruitless paths." -- Tim Wolters, CTO, Collective Intellect

### **Predictive Modeling with SAS Enterprise Miner**

Statistical Data Mining Using SAS Applications, Second Edition describes statistical data mining concepts and demonstrates the features of user-friendly data mining SAS tools. Integrating the statistical and graphical analysis tools available in SAS systems, the book provides complete statistical data mining solutions without writing SAS program co

### **SAS For Dummies**

Turn unstructured data into valuable business insight Unstructured Data Analytics provides an accessible, non-technical introduction to the analysis of unstructured data. Written by global experts in the analytics space, this book presents unstructured data analysis (UDA) concepts in a practical way, highlighting the broad scope of applications across industries, companies, and business functions. The discussion covers key aspects of UDA implementation, beginning with an explanation of the data and the information it provides, then moving into a holistic framework for implementation. Case studies show how real-world companies are leveraging UDA in security and customer management, and provide clear examples of both traditional business applications and newer, more innovative practices. Roughly 80 percent of today's data is unstructured in the form of emails, chats, social media, audio, and video. These data assets contain a wealth of valuable information that can be used to great advantage, but accessing that data in a meaningful way remains a challenge for many companies. This book provides the baseline knowledge and the practical understanding companies need to put this data to work. Supported by research with several industry leaders and packed with frontline stories from leading organizations such as Google, Amazon, Spotify, LinkedIn, Pfizer Manulife, AXA, Monster Worldwide, Under Armour, the

Houston Rockets, DELL, IBM, and SAS Institute, this book provide a framework for building and implementing a successful UDA center of excellence. You will learn: How to increase Customer Acquisition and Customer Retention with UDA The Power of UDA for Fraud Detection and Prevention The Power of UDA in Human Capital Management & Human Resource The Power of UDA in Health Care and Medical Research The Power of UDA in National Security The Power of UDA in Legal Services The Power of UDA for product development The Power of UDA in Sports The future of UDA From small businesses to large multinational organizations, unstructured data provides the opportunity to gain consumer information straight from the source. Data is only as valuable as it is useful, and a robust, effective UDA strategy is the first step toward gaining the full advantage. Unstructured Data Analytics lays this space open for examination, and provides a solid framework for beginning meaningful analysis.

### **Applied Analytics Using SAS Enterprise Miner 5**

Data Analysis Plans: A Blueprint for Success Using SAS gets you started on building an effective data analysis plan with a solid foundation for planning and managing your analytics projects. Data analysis plans are critical to the success of analytics projects and can improve the workflow of your project when implemented effectively. This book provides step-by-step instructions on writing, implementing, and updating your data analysis plan. It emphasizes the concept of an analysis plan as a working document that you update throughout the life of a project. This book will help you manage the following tasks: control client expectations limit and refine the scope of the analysis enable clear communication and understanding among team members organize and develop your final report SAS users of any level of experience will benefit from this book, but beginners will find it extremely useful as they build foundational knowledge for performing data analysis and hypotheses testing. Subject areas include medical research, public health research, social studies, educational testing and evaluation, and environmental studies.

### **Applied Analytics through Case Studies Using SAS and R**

Data Analysis Using SAS offers a comprehensive core text focused on key concepts and techniques in quantitative data analysis using the most current SAS commands and programming language. The coverage of the text is more evenly balanced among statistical analysis, SAS programming, and data/file management than any available text on the market. It provides students with a hands-on, exercise-heavy method for learning basic to intermediate SAS commands while understanding how to apply statistics and reasoning to real-world problems. Designed to be used in order of teaching preference by instructor, the book is comprised of two primary sections: the first half of the text instructs students in techniques for data and file managements such as concatenating and merging files, conditional or repetitive processing of variables, and observations. The second half of the text goes into great depth on the most common statistical techniques

and concepts - descriptive statistics, correlation, analysis of variance, and regression - used to analyze data in the social, behavioral, and health sciences using SAS commands. A student study at [www.sagepub.com/pengstudy](http://www.sagepub.com/pengstudy) comes replete with a multitude of computer programs, their output, specific details on how to check assumptions, as well as all data sets used in the book. Data Analysis Using SAS is a complete resource for Data Analysis I and II, Statistics I and II, Quantitative Reasoning, and SAS Programming courses across the social and behavioral sciences and health - especially those that carry a lab component.

### **Applying Data Science**

The aim of this textbook (previously titled SAS for Data Analytics) is to teach the use of SAS for statistical analysis of data for advanced undergraduate and graduate students in statistics, data science, and disciplines involving analyzing data. The book begins with an introduction beyond the basics of SAS, illustrated with non-trivial, real-world, worked examples. It proceeds to SAS programming and applications, SAS graphics, statistical analysis of regression models, analysis of variance models, analysis of variance with random and mixed effects models, and then takes the discussion beyond regression and analysis of variance to conclude. Pedagogically, the authors introduce theory and methodological basis topic by topic, present a problem as an application, followed by a SAS analysis of the data provided and a discussion of results. The text focuses on applied statistical problems and methods. Key features include: end of chapter exercises, downloadable SAS code and data sets, and advanced material suitable for a second course in applied statistics with every method explained using SAS analysis to illustrate a real-world problem. New to this edition:

- Covers SAS v9.2 and incorporates new commands
- Uses SAS ODS (output delivery system) for reproduction of tables and graphics output
- Presents new commands needed to produce ODS output
- All chapters rewritten for clarity
- New and updated examples throughout
- All SAS outputs are new and updated, including graphics
- More exercises and problems
- Completely new chapter on analysis of nonlinear and generalized linear models

• Completely new appendix

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### **Data Mining Using SAS Enterprise Miner**

Leverage health data into insight! Applied Health Analytics and Informatics Using SAS describes health analytics, a result of the intersection of data analytics and health informatics. Healthcare systems generate nearly a third of the world's data, and analytics can help to eliminate medical errors, reduce readmissions, provide evidence-based care, demonstrate quality outcomes, and add cost-efficient care. This comprehensive textbook includes data analytics and health informatics

concepts, along with applied experiential learning exercises and case studies using SAS Enterprise Miner™ within the healthcare industry setting. Topics covered include: Sampling and modeling health data - both structured and unstructured Exploring health data quality Developing health administration and health data assessment procedures Identifying future health trends Analyzing high-performance health data mining models Applied Health Analytics and Informatics Using SAS is intended for professionals, lifelong learners, senior-level undergraduates, graduate-level students in professional development courses, health informatics courses, health analytics courses, and specialized industry track courses. This textbook is accessible to a wide variety of backgrounds and specialty areas, including administrators, clinicians, and executives. This book is part of the SAS Press program.

### **A Handbook of Statistical Graphics Using SAS ODS**

"This book is a comprehensive reference on concepts, algorithms, theories, applications, software, and visualization of data mining, text mining, Web mining and computing/supercomputing, covering state-of-the-art of the theory and applications of mining"--

### **Business Analytics Using SAS Enterprise Guide and SAS Enterprise Miner**

### **Mastering Machine Learning with Python in Six Steps**

Analysis of Clinical Trials Using SAS®: A Practical Guide, Second Edition bridges the gap between modern statistical methodology and real-world clinical trial applications. Tutorial material and step-by-step instructions illustrated with examples from actual trials serve to define relevant statistical approaches, describe their clinical trial applications, and implement the approaches rapidly and efficiently using the power of SAS. Topics reflect the International Conference on Harmonization (ICH) guidelines for the pharmaceutical industry and address important statistical problems encountered in clinical trials. Commonly used methods are covered, including dose-escalation and dose-finding methods that are applied in Phase I and Phase II clinical trials, as well as important trial designs and analysis strategies that are employed in Phase II and Phase III clinical trials, such as multiplicity adjustment, data monitoring, and methods for handling incomplete data. This book also features recommendations from clinical trial experts and a discussion of relevant regulatory guidelines. This new edition includes more examples and case studies, new approaches for addressing statistical problems, and the following new technological updates: SAS procedures used in group sequential trials (PROC SEQDESIGN and PROC SEQTEST) SAS procedures used in repeated measures analysis (PROC GLIMMIX and PROC GEE) macros for implementing a broad range of randomization-based methods in clinical trials, performing complex multiplicity adjustments, and

investigating the design and analysis of early phase trials (Phase I dose-escalation trials and Phase II dose-finding trials) Clinical statisticians, research scientists, and graduate students in biostatistics will greatly benefit from the decades of clinical research experience and the ready-to-use SAS macros compiled in this book.

### **SAS Certification Prep Guide**

Big data: It's unstructured, it's coming at you fast, and there's lots of it. In fact, the majority of big data is text-oriented, thanks to the proliferation of online sources such as blogs, emails, and social media. However, having big data means little if you can't leverage it with analytics. Now you can explore the large volumes of unstructured text data that your organization has collected with *Text Mining and Analysis: Practical Methods, Examples, and Case Studies Using SAS*. This hands-on guide to text analytics using SAS provides detailed, step-by-step instructions and explanations on how to mine your text data for valuable insight. Through its comprehensive approach, you'll learn not just how to analyze your data, but how to collect, cleanse, organize, categorize, explore, and interpret it as well. *Text Mining and Analysis* also features an extensive set of case studies, so you can see examples of how the applications work with real-world data from a variety of industries. Text analytics enables you to gain insights about your customers' behaviors and sentiments. Leverage your organization's text data, and use those insights for making better business decisions with *Text Mining and Analysis*. This book is part of the SAS Press program.

### **Applied Analytics through Case Studies Using SAS and R**

This is the first book to present time series analysis using the SAS Enterprise Guide software. It includes some starting background and theory to various time series analysis techniques, and demonstrates the data analysis process and the final results via step-by-step extensive illustrations of the SAS Enterprise Guide software. This book is a practical guide to time series analyses in SAS Enterprise Guide, and is valuable resource that benefits a wide variety of sectors.

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