Data Cleaning And Data Preprocessing

Mark van der Loo, Edwin de Jonge

Hands-On Data Preprocessing in Python Roy Jafari, 2022-01-21 Get your raw data cleaned up and ready for processing to design better data analytic solutions Key Features Develop the skills to perform data cleaning, data integration, data reduction, and data transformationMake the most of your raw data with powerful data transformation and massaging techniquesPerform thorough data cleaning, including dealing with missing values and outliersBook Description Hands-On Data Preprocessing is a primer on the best data cleaning and preprocessing techniques, written by an expert who's developed college-level courses on data preprocessing and related subjects. With this book, you'll be equipped with the optimum data preprocessing techniques from multiple perspectives, ensuring that you get the best possible insights from your data. You'll learn about different technical and analytical aspects of data preprocessing - data collection, data cleaning, data integration, data reduction, and data transformation - and get to grips with implementing them using the open source Python programming environment. The hands-on examples and easy-to-follow chapters will help you gain a comprehensive articulation of data preprocessing, its whys and hows, and identify opportunities where data analytics could lead to more effective decision making. As you progress through the chapters, you'll also understand the role of data management systems and technologies for effective analytics and how to use APIs to pull data. By the end of this Python data preprocessing book, you'll be able to use Python to read, manipulate, and analyze data; perform data cleaning, integration, reduction, and transformation techniques, and handle outliers or missing values to effectively prepare data for analytic tools. What you will learnUse Python to perform analytics functions on your dataUnderstand the role of databases and how to effectively pull data from databasesPerform data preprocessing steps defined by your analytics goalsRecognize and resolve data integration challenges Identify the need for data reduction and execute it Detect opportunities to improve analytics with data transformationWho this book is for This book is for junior and senior data analysts, business intelligence professionals, engineering undergraduates, and data enthusiasts looking to perform preprocessing and data cleaning on large amounts of data. You don't need any prior experience with data preprocessing to get started with this book. However, basic programming skills, such as working with variables, conditionals, and loops, along with beginner-level knowledge of Python and simple analytics experience, are a prerequisite.

Data Preparation for Machine Learning Jason Brownlee, 2020-06-30 Data preparation involves transforming raw data in

to a form that can be modeled using machine learning algorithms. Cut through the equations, Greek letters, and confusion, and discover the specialized data preparation techniques that you need to know to get the most out of your data on your next project. Using clear explanations, standard Python libraries, and step-by-step tutorial lessons, you will discover how to confidently and effectively prepare your data for predictive modeling with machine learning.

Secondary Analysis of Electronic Health Records MIT Critical Data, 2016-09-09 This book trains the next generation of scientists representing different disciplines to leverage the data generated during routine patient care. It formulates a more complete lexicon of evidence-based recommendations and support shared, ethical decision making by doctors with their patients. Diagnostic and therapeutic technologies continue to evolve rapidly, and both individual practitioners and clinical teams face increasingly complex ethical decisions. Unfortunately, the current state of medical knowledge does not provide the guidance to make the majority of clinical decisions on the basis of evidence. The present research infrastructure is inefficient and frequently produces unreliable results that cannot be replicated. Even randomized controlled trials (RCTs), the traditional gold standards of the research reliability hierarchy, are not without limitations. They can be costly, labor intensive, and slow, and can return results that are seldom generalizable to every patient population. Furthermore, many pertinent but unresolved clinical and medical systems issues do not seem to have attracted the interest of the research enterprise, which has come to focus instead on cellular and molecular investigations and single-agent (e.g., a drug or device) effects. For clinicians, the end result is a bit of a "data desert" when it comes to making decisions. The new research infrastructure proposed in this book will help the medical profession to make ethically sound and well informed decisions for their patients.

Data Cleaning: The Ultimate Practical Guide Lee Baker, 2022-11-07 Data visualisation is sexy. So are Bayesian Belief Nets and Artificial Neural Networks. You can't get to do any of these things, though, if your data are dirty. Your analysis package will just stare back at you, saying 'computer says no'. But just how do you get the clean data that these packages need? What is 'clean data'? And, for that matter, what is 'dirty data'? Data Cleaning: The Ultimate Practical Guide is a guide to understanding what dirty data is, and how it gets into your dataset. More than that, it is a guide to helping you prevent most types of dirty data getting into your dataset in the first place, and cleaning out quickly and efficiently the remaining errors, so you can have clean, fit-for-purpose and analysis-ready data. So that your data are ready to change the world! Data Cleaning: The Ultimate Practical Guide is a snappy little non-threatening book about everything you ever wanted to know (but were afraid to ask) about the craft of cleaning and preparing your data for the sexier parts of your analysis. First, I'll explain about the 4 phases of data cleaning. Then I'll show you the 6 different types of dirty data that tend to find a way into your dataset. You'll learn about the 5 data collection methods typically used in research, and you'll get a 5 step method of cleaning data. Finally, you'll learn about the 4 data pre-processing steps using summary statistics that will help you get your

data fit-for-purpose and analysis-ready. Best of all, there is no technical jargon – it is written in plain English and is perfect for beginners! By the time you've read this short book, you'll know more about data collection and cleaning than most people around you! Discover how to clean your data quickly and effectively. Get this book, TODAY!

Data Preprocessing in Data Mining Salvador García, Julián Luengo, Francisco Herrera, 2014-08-30 Data Preprocessing for Data Mining addresses one of the most important issues within the well-known Knowledge Discovery from Data process. Data directly taken from the source will likely have inconsistencies, errors or most importantly, it is not ready to be considered for a data mining process. Furthermore, the increasing amount of data in recent science, industry and business applications, calls to the requirement of more complex tools to analyze it. Thanks to data preprocessing, it is possible to convert the impossible into possible, adapting the data to fulfill the input demands of each data mining algorithm. Data preprocessing includes the data reduction techniques, which aim at reducing the complexity of the data, detecting or removing irrelevant and noisy elements from the data. This book is intended to review the tasks that fill the gap between the data acquisition from the source and the data mining process. A comprehensive look from a practical point of view, including basic concepts and surveying the techniques proposed in the specialized literature, is given. Each chapter is a stand-alone guide to a particular data preprocessing topic, from basic concepts and detailed descriptions of classical algorithms, to an incursion of an exhaustive catalog of recent developments. The in-depth technical descriptions make this book suitable for technical professionals, researchers, senior undergraduate and graduate students in data science, computer science and engineering.

Data Cleaning Venkatesh Ganti, Anish Das Sarma, 2013-09-01 Data warehouses consolidate various activities of a business and often form the backbone for generating reports that support important business decisions. Errors in data tend to creep in for a variety of reasons. Some of these reasons include errors during input data collection and errors while merging data collected independently across different databases. These errors in data warehouses often result in erroneous upstream reports, and could impact business decisions negatively. Therefore, one of the critical challenges while maintaining large data warehouses is that of ensuring the quality of data in the data warehouse remains high. The process of maintaining high data quality is commonly referred to as data cleaning. In this book, we first discuss the goals of data cleaning. Often, the goals of data cleaning are not well defined and could mean different solutions in different scenarios. Toward clarifying these goals, we abstract out a common set of data cleaning tasks that often need to be addressed. This abstraction allows us to develop solutions for these common data cleaning tasks. We then discuss a few popular approaches for developing such solutions. In particular, we focus on an operator-centric approach for developing a data cleaning platform. The operator-centric approach involves the development of customizable operators that could be used as building blocks for developing common solutions. This is similar to the approach of relational algebra for query processing. The basic set of operators can

be put together to build complex queries. Finally, we discuss the development of custom scripts which leverage the basic data cleaning operators along with relational operators to implement effective solutions for data cleaning tasks.

Data Cleaning Ihab F. Ilyas,Xu Chu,2019-06-18 Data quality is one of the most important problems in data management, since dirty data often leads to inaccurate data analytics results and incorrect business decisions. Poor data across businesses and the U.S. government are reported to cost trillions of dollars a year. Multiple surveys show that dirty data is the most common barrier faced by data scientists. Not surprisingly, developing effective and efficient data cleaning solutions is challenging and is rife with deep theoretical and engineering problems. This book is about data cleaning, which is used to refer to all kinds of tasks and activities to detect and repair errors in the data. Rather than focus on a particular data cleaning task, we give an overview of the end-to-end data cleaning process, describing various error detection and repair methods, and attempt to anchor these proposals with multiple taxonomies and views. Specifically, we cover four of the most common and important data cleaning tasks, namely, outlier detection, data transformation, error repair (including imputing missing values), and data deduplication. Furthermore, due to the increasing popularity and applicability of machine learning techniques, we include a chapter that specifically explores how machine learning techniques are used for data cleaning, and how data cleaning is used to improve machine learning models. This book is intended to serve as a useful reference for researchers and practitioners who are interested in the area of data quality and data cleaning. It can also be used as a textbook for a graduate course. Although we aim at covering state-of-the-art algorithms and techniques, we recognize that data cleaning is still an active field of research and therefore provide future directions of research whenever appropriate.

<u>Data Cleaning for Effective Data Science</u> David Mertz,2021-02

Python Data Cleaning Cookbook Michael Walker, 2024-05-31 Learn the intricacies of data description, issue identification, and practical problem-solving, armed with essential techniques and expert tips. Key Features Get to grips with new techniques for data preprocessing and cleaning for machine learning and NLP models Use new and updated AI tools and techniques for data cleaning tasks Clean, monitor, and validate large data volumes to diagnose problems using cutting-edge methodologies including Machine learning and AI Book Description Jumping into data analysis without proper data cleaning will certainly lead to incorrect results. The Python Data Cleaning Cookbook - Second Edition will show you tools and techniques for cleaning and handling data with Python for better outcomes. Fully updated to the latest version of Python and all relevant tools, this book will teach you how to manipulate and clean data to get it into a useful form. he current edition focuses on advanced techniques like machine learning and AI-specific approaches and tools for data cleaning along with the conventional ones. The book also delves into tips and techniques to process and clean data for ML, AI, and NLP models. You will learn how to filter and summarize data to gain insights and better understand what makes sense and what does not, along with discovering how to operate on data to address the issues you've identified. Next, you'll cover recipes for using

supervised learning and Naive Bayes analysis to identify unexpected values and classification errors and generate visualizations for exploratory data analysis (EDA) to identify unexpected values. Finally, you'll build functions and classes that you can reuse without modification when you have new data. By the end of this Data Cleaning book, you'll know how to clean data and diagnose problems within it. What you will learn Using OpenAI tools for various data cleaning tasks Producing summaries of the attributes of datasets, columns, and rows Anticipating data-cleaning issues when importing tabular data into pandas Applying validation techniques for imported tabular data Improving your productivity in pandas by using method chaining Recognizing and resolving common issues like dates and IDs Setting up indexes to streamline data issue identification Using data cleaning to prepare your data for ML and AI models Who this book is for This book is for anyone looking for ways to handle messy, duplicate, and poor data using different Python tools and techniques. The book takes a recipe-based approach to help you to learn how to clean and manage data with practical examples. Working knowledge of Python programming is all you need to get the most out of the book.

Cleaning Data for Effective Data Science David Mertz, 2021-03-31 Think about your data intelligently and ask the right questions Key Features Master data cleaning techniques necessary to perform real-world data science and machine learning tasksSpot common problems with dirty data and develop flexible solutions from first principlesTest and refine your newly acquired skills through detailed exercises at the end of each chapterBook Description Data cleaning is the allimportant first step to successful data science, data analysis, and machine learning. If you work with any kind of data, this book is your go-to resource, arming you with the insights and heuristics experienced data scientists had to learn the hard way. In a light-hearted and engaging exploration of different tools, techniques, and datasets real and fictitious, Python veteran David Mertz teaches you the ins and outs of data preparation and the essential guestions you should be asking of every piece of data you work with. Using a mixture of Python, R, and common command-line tools, Cleaning Data for Effective Data Science follows the data cleaning pipeline from start to end, focusing on helping you understand the principles underlying each step of the process. You'll look at data ingestion of a vast range of tabular, hierarchical, and other data formats, impute missing values, detect unreliable data and statistical anomalies, and generate synthetic features. The longform exercises at the end of each chapter let you get hands-on with the skills you've acquired along the way, also providing a valuable resource for academic courses. What you will learnIngest and work with common data formats like JSON, CSV, SQL and NoSQL databases, PDF, and binary serialized data structuresUnderstand how and why we use tools such as pandas, SciPy, scikit-learn, Tidyverse, and BashApply useful rules and heuristics for assessing data quality and detecting bias, like Benford's law and the 68-95-99.7 ruleIdentify and handle unreliable data and outliers, examining z-score and other statistical propertiesImpute sensible values into missing data and use sampling to fix imbalancesUse dimensionality reduction, quantization, one-hot encoding, and other feature engineering techniques to draw out patterns in your dataWork carefully

with time series data, performing de-trending and interpolationWho this book is for This book is designed to benefit software developers, data scientists, aspiring data scientists, teachers, and students who work with data. If you want to improve your rigor in data hygiene or are looking for a refresher, this book is for you. Basic familiarity with statistics, general concepts in machine learning, knowledge of a programming language (Python or R), and some exposure to data science are helpful.

Practical Data Science with Jupyter Prateek Gupta, 2021-03-01 Solve business problems with data-driven techniques and easy-to-follow Python examples Ê KEY FEATURESÊÊ Essential coverage on statistics and data science techniques. Exposure to Jupyter, PyCharm, and use of GitHub. Real use-cases, best practices, and smart techniques on the use of data science for data applications. DESCRIPTIONÊÊ This book begins with an introduction to Data Science followed by the Python concepts. The readers will understand how to interact with various database and Statistics concepts with their Python implementations. You will learn how to import various types of data in Python, which is the first step of the data analysis process. Once you become comfortable with data importing, you will clean the dataset and after that will gain an understanding about various visualization charts. This book focuses on how to apply feature engineering techniques to make your data more valuable to an algorithm. The readers will get to know various Machine Learning Algorithms, concepts, Time Series data, and a few real-world case studies. This book also presents some best practices that will help you to be industryready. This book focuses on how to practice data science techniques while learning their concepts using Python and Jupyter. This book is a complete answer to the most common question that how can you get started with Data Science instead of explaining Mathematics and Statistics behind the Machine Learning Algorithms. WHAT YOU WILL LEARN Rapid understanding of Python concepts for data science applications. Understand and practice how to run data analysis with data science techniques and algorithms. Learn feature engineering, dealing with different datasets, and most trending machine learning algorithms. Become self-sufficient to perform data science tasks with the best tools and techniques. Ê WHO THIS BOOK IS FORÊÊ This book is for a beginner or an experienced professional who is thinking about a career or a career switch to Data Science. Each chapter contains easy-to-follow Python examples. É TABLE OF CONTENTS 1. Data Science Fundamentals 2. Installing Software and System Setup 3. Lists and Dictionaries 4. Package, Function, and Loop 5. NumPy Foundation 6. Pandas and DataFrame 7. Interacting with Databases 8. Thinking Statistically in Data Science 9. How to Import Data in Python? 10. Cleaning of Imported Data 11. Data Visualization 12. Data Pre-processing 13. Supervised Machine Learning 14. Unsupervised Machine Learning 15. Handling Time-Series Data 16. Time-Series Methods 17. Case Study-1 18. Case Study-2 19. Case Study-3 20. Case Study-4 21. Python Virtual Environment 22. Introduction to An Advanced Algorithm - CatBoost 23. Revision of All Chapters Learning

Statistical Data Cleaning with Applications in R Mark van der Loo, Edwin de Jonge, 2018-04-23 A comprehensive guide to automated statistical data cleaning The production of clean data is a complex and time-consuming process that requires both

technical know-how and statistical expertise. Statistical Data Cleaning brings together a wide range of techniques for cleaning textual, numeric or categorical data. This book examines technical data cleaning methods relating to data representation and data structure. A prominent role is given to statistical data validation, data cleaning based on predefined restrictions, and data cleaning strategy. Key features: Focuses on the automation of data cleaning methods, including both theory and applications written in R. Enables the reader to design data cleaning processes for either one-off analytical purposes or for setting up production systems that clean data on a regular basis. Explores statistical techniques for solving issues such as incompleteness, contradictions and outliers, integration of data cleaning components and quality monitoring. Supported by an accompanying website featuring data and R code. This book enables data scientists and statistical analysts working with data to deepen their understanding of data cleaning as well as to upgrade their practical data cleaning skills. It can also be used as material for a course in data cleaning and analyses.

Feature Engineering for Machine Learning Alice Zheng, Amanda Casari, 2018-03-23 Feature engineering is a crucial step in the machine-learning pipeline, yet this topic is rarely examined on its own. With this practical book, you'll learn techniques for extracting and transforming features—the numeric representations of raw data—into formats for machine-learning models. Each chapter guides you through a single data problem, such as how to represent text or image data. Together, these examples illustrate the main principles of feature engineering. Rather than simply teach these principles, authors Alice Zheng and Amanda Casari focus on practical application with exercises throughout the book. The closing chapter brings everything together by tackling a real-world, structured dataset with several feature-engineering techniques. Python packages including numpy, Pandas, Scikit-learn, and Matplotlib are used in code examples. You'll examine: Feature engineering for numeric data: filtering, binning, scaling, log transforms, and power transforms Natural text techniques: bag-of-words, n-grams, and phrase detection Frequency-based filtering and feature scaling for eliminating uninformative features Encoding techniques of categorical variables, including feature hashing and bin-counting Model-based feature engineering with principal component analysis The concept of model stacking, using k-means as a featurization technique Image feature extraction with manual and deep-learning techniques

Practical Data Cleaning Lee Baker,2019-01-30 Data cleaning is a waste of time. If the data had been collected properly in the first place there wouldn't be any cleaning to do, and you wouldn't now be faced with the prospect of weeks of cleaning to get your dataset analysis-ready. Worse still, your boss won't understand why your analysis report isn't on his desk yet, a mere 48 hours after he's asked for it. Bless him, he doesn't understand - he thinks that cleaning data is just about clicking a few buttons in Excel and - ta da! - it's all done. Even a monkey can do that, right? And - for good reason - you won't get any help from statistics books either. Data is messy and cleaning it can be difficult, time-consuming and costly. Not to mention it's the least sexy thing you can do with a dataset. Yet you've still got to do it, because, well, someone has to... But it doesn't have to

be so difficult. If you're organised and follow a few simple rules your data cleaning processes can be simple, fast and effective. Not to mention fun! Well, not fun exactly, just not quite as coma-inducing. Practical Data Cleaning (now in its 5th Edition!) explains the 19 most important tips about data cleaning with a focus on understanding your data, how to work with it, choose the right ways to analyse it, select the correct tools and how to interpret the results to get your data clean in double quick time. Best of all, there is no technical jargon – it is written in plain English and is perfect for beginners! Discover how to clean your data quickly and effectively. Get this book, TODAY!

Best Practices in Data Cleaning Jason W. Osborne, 2013 Many researchers jump straight from data collection to data analysis without realizing how analyses and hypothesis tests can go profoundly wrong without clean data. This book provides a clear, step-by-step process of examining and cleaning data in order to decrease error rates and increase both the power and replicability of results. Jason W. Osborne, author of Best Practices in Quantitative Methods (SAGE, 2008) provides easily-implemented suggestions that are research-based and will motivate change in practice by empirically demonstrating, for each topic, the benefits of following best practices and the potential consequences of not following these guidelines. If your goal is to do the best research you can do, draw conclusions that are most likely to be accurate representations of the population(s) you wish to speak about, and report results that are most likely to be replicated by other researchers, then this basic guidebook will be indispensible.

DATA PREPROCESSING FOR CLASSIFYING MEDICAL DATASET M. S Padmavathi, 2023-02 The book would provide an in-depth guide to the various techniques and methods used in preprocessing and preparing medical datasets for classification tasks. The book would start by discussing the importance of data preprocessing in machine learning and how it affects the overall performance of a classifier. It would then cover various topics such as data cleaning, data transformation, normalization, outlier detection, and imputation, with a focus on their applications in medical datasets. The book would also delve into feature scaling, selection, and encoding categorical variables, providing readers with practical examples and case studies. Additionally, the book would explore the challenges posed by class imbalance and multi-collinearity in medical datasets, and provide techniques for data balancing and data reduction. The book would also provide guidance on feature engineering and its impact on the performance of classifiers. The book would be aimed at data scientists, machine learning engineers, and medical professionals with a background in data analysis and programming who are interested in using machine learning to classify medical datasets. The book would provide a comprehensive and hands-on approach to preprocessing medical datasets for classification tasks, equipping readers with the knowledge and skills necessary to tackle real-world problems. Data mining engine can perform functions like Characterization, Association and Correlation Analysis, Classification, Prediction, Cluster analysis, Sequential patterns, Outlier analysis, and Evolution analysis. Besides the effectiveness of data mining, there are also many challenges faced while performing data mining task. The factors influencing

data mining are: Mining Methodology and User Interaction, Performance Issues, Diverse Data Types, Uncertainty Handling, Dealing with Missing Values and Outliers, Efficiency of Algorithms, Incorporating Domain Knowledge, Size and Complexity of Data.

Computational Genomics with R Altuna Akalin, 2020-12-16 Computational Genomics with R provides a starting point for beginners in genomic data analysis and also guides more advanced practitioners to sophisticated data analysis techniques in genomics. The book covers topics from R programming, to machine learning and statistics, to the latest genomic data analysis techniques. The text provides accessible information and explanations, always with the genomics context in the background. This also contains practical and well-documented examples in R so readers can analyze their data by simply reusing the code presented. As the field of computational genomics is interdisciplinary, it requires different starting points for people with different backgrounds. For example, a biologist might skip sections on basic genome biology and start with R programming, whereas a computer scientist might want to start with genome biology. After reading: You will have the basics of R and be able to dive right into specialized uses of R for computational genomics such as using Bioconductor packages. You will be familiar with statistics, supervised and unsupervised learning techniques that are important in data modeling, and exploratory analysis of high-dimensional data. You will understand genomic intervals and operations on them that are used for tasks such as aligned read counting and genomic feature annotation. You will know the basics of processing and quality checking high-throughput sequencing data. You will be able to do sequence analysis, such as calculating GC content for parts of a genome or finding transcription factor binding sites. You will know about visualization techniques used in genomics, such as heatmaps, meta-gene plots, and genomic track visualization. You will be familiar with analysis of different high-throughput sequencing data sets, such as RNA-seq, ChIP-seq, and BS-seq. You will know basic techniques for integrating and interpreting multi-omics datasets. Altuna Akalin is a group leader and head of the Bioinformatics and Omics Data Science Platform at the Berlin Institute of Medical Systems Biology, Max Delbrück Center, Berlin. He has been developing computational methods for analyzing and integrating large-scale genomics data sets since 2002. He has published an extensive body of work in this area. The framework for this book grew out of the yearly computational genomics courses he has been organizing and teaching since 2015.

Python Data Cleaning Cookbook Michael Walker,2020-12-11 Discover how to describe your data in detail, identify data issues, and find out how to solve them using commonly used techniques and tips and tricks Key FeaturesGet well-versed with various data cleaning techniques to reveal key insightsManipulate data of different complexities to shape them into the right form as per your business needsClean, monitor, and validate large data volumes to diagnose problems before moving on to data analysisBook Description Getting clean data to reveal insights is essential, as directly jumping into data analysis without proper data cleaning may lead to incorrect results. This book shows you tools and techniques that you can apply to

clean and handle data with Python. You'll begin by getting familiar with the shape of data by using practices that can be deployed routinely with most data sources. Then, the book teaches you how to manipulate data to get it into a useful form. You'll also learn how to filter and summarize data to gain insights and better understand what makes sense and what does not, along with discovering how to operate on data to address the issues you've identified. Moving on, you'll perform key tasks, such as handling missing values, validating errors, removing duplicate data, monitoring high volumes of data, and handling outliers and invalid dates. Next, you'll cover recipes on using supervised learning and Naive Bayes analysis to identify unexpected values and classification errors, and generate visualizations for exploratory data analysis (EDA) to visualize unexpected values. Finally, you'll build functions and classes that you can reuse without modification when you have new data. By the end of this Python book, you'll be equipped with all the key skills that you need to clean data and diagnose problems within it. What you will learnFind out how to read and analyze data from a variety of sourcesProduce summaries of the attributes of data frames, columns, and rowsFilter data and select columns of interest that satisfy given criteriaAddress messy data issues, including working with dates and missing valuesImprove your productivity in Python pandas by using method chaining Use visualizations to gain additional insights and identify potential data issues Enhance your ability to learn what is going on in your dataBuild user-defined functions and classes to automate data cleaningWho this book is for This book is for anyone looking for ways to handle messy, duplicate, and poor data using different Python tools and techniques. The book takes a recipe-based approach to help you to learn how to clean and manage data. Working knowledge of Python programming is all you need to get the most out of the book.

Data Preparation for Data Mining Dorian Pyle,1999-03-22 This book focuses on the importance of clean, well-structured data as the first step to successful data mining. It shows how data should be prepared prior to mining in order to maximize mining performance.

Data Mining: Know It All Soumen Chakrabarti, Richard E. Neapolitan, Dorian Pyle, Mamdouh Refaat, Markus Schneider, Toby J. Teorey, Ian H. Witten, Earl Cox, Eibe Frank, Ralf Hartmut Güting, Jiawei Han, Xia Jiang, Micheline Kamber, Sam S. Lightstone, Thomas P. Nadeau, 2008-10-31 This book brings all of the elements of data mining together in a single volume, saving the reader the time and expense of making multiple purchases. It consolidates both introductory and advanced topics, thereby covering the gamut of data mining and machine learning tactics? from data integration and preprocessing, to fundamental algorithms, to optimization techniques and web mining methodology. The proposed book expertly combines the finest data mining material from the Morgan Kaufmann portfolio. Individual chapters are derived from a select group of MK books authored by the best and brightest in the field. These chapters are combined into one comprehensive volume in a way that allows it to be used as a reference work for those interested in new and developing aspects of data mining. This book represents a quick and efficient way to unite valuable content from leading data mining experts, thereby

creating a definitive, one-stop-shopping opportunity for customers to receive the information they would otherwise need to round up from separate sources. Chapters contributed by various recognized experts in the field let the reader remain up to date and fully informed from multiple viewpoints. Presents multiple methods of analysis and algorithmic problem-solving techniques, enhancing the reader's technical expertise and ability to implement practical solutions. Coverage of both theory and practice brings all of the elements of data mining together in a single volume, saving the reader the time and expense of making multiple purchases.

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Data Cleaning And Data Preprocessing Introduction

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