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SQL Server Analysis Services 2012 Cube Development Cookbook

Packt Publishing Ltd A practical cookbook packed with recipes to help developers produce data cubes as quickly as possible by following step by step instructions, rather than explaining data mining concepts with SSAS. If you are a BI or ETL developer using SQL Server Analysis services to build OLAP cubes, this book is ideal for you. Prior knowledge of relational databases and experience with Excel as well as SQL development is required.

Python for Data Analysis

Data Wrangling with Pandas, NumPy, and IPython

"O'Reilly Media, Inc." Get complete instructions for manipulating, processing, cleaning, and crunching datasets in Python. Updated for Python 3.6, the second edition of this hands-on guide is packed with practical case studies that show you how to solve a broad set of data analysis problems effectively. You'll learn the latest versions of pandas, NumPy, IPython, and Jupyter in the process. Written by Wes McKinney, the creator of the Python pandas project, this book is a practical, modern introduction to data science tools in Python. It's ideal for analysts new to Python and for Python programmers new to data science and scientific computing. Data files and related material are available on GitHub. Use the IPython shell and Jupyter notebook for exploratory computing Learn basic and advanced features in NumPy (Numerical Python) Get started with data analysis tools in the pandas library Use flexible tools to load, clean, transform, merge, and reshape data Create informative visualizations with matplotlib Apply the pandas groupby facility to slice, dice, and summarize datasets Analyze and manipulate regular and irregular time series data Learn how to solve real-world data analysis problems with thorough, detailed examples

Big Data in Practice

How 45 Successful Companies Used Big Data Analytics to Deliver Extraordinary Results

John Wiley & Sons The best-selling author of Big Data is back, this time with a unique and in-depth insight into how specific companies use big data. Big data is on the tip of everyone's tongue. Everyone understands its power and importance, but many fail to grasp the actionable steps and resources required to utilise it effectively. This book fills the knowledge gap by showing how major companies are using big data every day, from an up-close, on-the-ground perspective. From technology, media and retail, to sport teams, government agencies and financial institutions, learn the actual strategies and processes being used to learn about customers, improve manufacturing, spur innovation, improve safety and so much more. Organised for easy dip-in navigation, each chapter follows the same structure to give you the information you need quickly. For each company profiled, learn what data was used, what problem it solved and the processes put it place to make it practical, as well as the technical details, challenges and lessons learned from each unique scenario. Learn how predictive analytics helps Amazon, Target, John Deere and Apple understand their customers Discover how big data is behind the success of Walmart, LinkedIn, Microsoft and more Learn how big data is changing medicine, law enforcement, hospitality, fashion, science and banking Develop your own big data strategy by accessing additional reading materials at the end of each chapter

Customer Relationship Management

Concept, Strategy, and Tools

Springer This book presents an extensive discussion of the strategic and tactical aspects of customer relationship management as we know it today. It helps readers obtain a comprehensive grasp of CRM strategy, concepts and tools and provides all the necessary steps in managing profitable customer relationships. Throughout, the book stresses a clear understanding of economic customer value as the guiding concept for marketing decisions. Exhaustive case studies, mini cases and real-world illustrations under the title "CRM at Work" all ensure that the material is both highly accessible and applicable, and help to address key managerial issues, stimulate thinking, and encourage problem solving. The book is a comprehensive and up-to-date learning companion for advanced undergraduate students, master's degree students, and executives who want a detailed and conceptually sound insight into the field of CRM. The new edition provides an updated perspective on the latest research results and incorporates the impact of the digital transformation on the CRM domain.

BIM Handbook

A Guide to Building Information Modeling for Owners, Designers, Engineers, Contractors, and Facility Managers

John Wiley & Sons Discover BIM: A better way to build better buildings Building Information Modeling (BIM) offers a novel approach to design, construction, and facility management in which a digital representation of the building product and process is used to facilitate the exchange and interoperability of information in digital format. BIM is beginning to change the way buildings look, the way they function, and the ways in which they are designed and built. The BIM Handbook, Third Edition provides an in-depth understanding of BIM technologies, the business and organizational issues associated with its implementation, and the profound advantages that effective use of BIM can provide to all members of a project team. Updates to this edition include: Information on the ways in which professionals should use BIM to gain maximum value New topics such as collaborative working, national and major construction clients, BIM standards and guides A discussion on how various professional roles have expanded through the widespread use and the new avenues of BIM practices and services A wealth of new case studies that clearly illustrate exactly how BIM is applied in a wide variety of conditions Painting a colorful and thorough picture of the state of the art in building information modeling, the BIM Handbook, Third Edition guides readers to successful implementations, helping them to avoid needless frustration and costs and take full advantage of this paradigm-shifting approach to construct better buildings that consume fewer materials and require less time, labor, and capital resources.

The Site Reliability Workbook

Practical Ways to Implement SRE

"O'Reilly Media, Inc." In 2016, Google's Site Reliability Engineering book ignited an industry discussion on what it means to run production services today—and why reliability considerations are fundamental to service design. Now, Google engineers who worked on that bestseller introduce The Site Reliability Workbook, a hands-on companion that uses concrete examples to show you how to put SRE principles and practices to work in your environment. This new workbook not only combines practical examples from Google's experiences, but also provides case studies from Google's Cloud Platform customers who underwent this journey. Evernote, The Home Depot, The New York Times, and other companies outline hard-won experiences of what worked for them and what didn't. Dive into this workbook and learn how to flesh out your own SRE practice, no matter what size your company is. You'll learn: How to run reliable services in environments you don't completely control—like cloud Practical applications of how to create, monitor, and run your services via Service Level Objectives How to convert existing ops teams to SRE—including how to dig out of operational overload Methods for starting SRE from either greenfield or brownfield

Machine Learning for Hackers

Case Studies and Algorithms to Get You Started

"O'Reilly Media, Inc." If you're an experienced programmer interested in crunching data, this book will get you started with machine learning—a toolkit of algorithms that enables computers to train themselves to automate useful tasks. Authors Drew Conway and John Myles White help you understand machine learning and statistics tools through a series of hands-on case studies, instead of a traditional math-heavy presentation. Each chapter focuses on a specific problem in machine learning, such as classification, prediction, optimization, and recommendation. Using the R programming language, you'll learn how to analyze sample datasets and write simple machine learning algorithms. Machine Learning for Hackers is ideal for programmers from any background, including business, government, and academic research. Develop a naïve Bayesian classifier to determine if an email is spam, based only on its text Use linear regression to predict the number of page views for the top 1,000 websites Learn optimization techniques by attempting to break a simple letter cipher Compare and contrast U.S. Senators statistically, based on their voting records Build a "whom to follow" recommendation system from Twitter data

Web Scraping with Python

Collecting Data from the Modern Web

"O'Reilly Media, Inc." Learn web scraping and crawling techniques to access unlimited data from any web source in any format. With this practical guide, you'll learn how to use Python scripts and web APIs to gather and process data from thousands—or even millions—of web pages at once. Ideal for programmers, security professionals, and web administrators familiar with Python, this book not only teaches basic web scraping mechanics, but also delves into more advanced topics, such as analyzing raw data or using scrapers for frontend website testing. Code samples are available to help you understand the concepts in practice. Learn how to parse complicated HTML pages Traverse multiple pages and sites Get a general overview of APIs and how they work Learn several methods for storing the data you scrape Download, read, and extract data from documents Use tools and techniques to clean badly formatted data Read and write natural languages Crawl through forms and logins Understand how to scrape JavaScript Learn image processing and text recognition

Mastering Large Datasets with Python

Parallelize and Distribute Your Python Code

Simon and Schuster Summary Modern data science solutions need to be clean, easy to read, and scalable. In Mastering Large Datasets with Python, author J.T. Wolohan teaches you how to take a small project and scale it up using a functionally influenced approach to Python coding. You'll explore methods and built-in Python tools that lend themselves to clarity and scalability, like the high-performing parallelism method, as well as distributed technologies that allow for high data throughput. The abundant hands-on exercises in this practical tutorial will lock in these essential skills for any large-scale data science project. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Programming techniques that work well on laptop-sized data can slow to a crawl—or fail altogether—when applied to massive files or distributed datasets. By mastering the powerful map and reduce paradigm, along with the Python-based tools that support it, you can write data-centric applications that scale efficiently without requiring codebase rewrites as your requirements change. About the book Mastering Large Datasets with Python teaches you to write code that can handle datasets of any size. You'll start with laptop-sized datasets that teach you to parallelize data analysis by breaking large tasks into smaller ones that can run simultaneously. You'll then scale those same programs to industrial-sized datasets on a cluster of cloud servers. With the map and reduce paradigm firmly in place, you'll explore tools like Hadoop and PySpark to efficiently process massive distributed datasets, speed up decision-making with machine learning, and simplify your data storage with AWS S3. What's inside An introduction to the map and reduce paradigm Parallelization with the multiprocessing module and pathos framework Hadoop and Spark for distributed computing Running AWS jobs to process large datasets About the reader For Python programmers who need to work faster with more data. About the author J. T. Wolohan is a lead data scientist at Booz Allen Hamilton, and a PhD researcher at Indiana University, Bloomington. Table of Contents: PART 1 1 ¦ Introduction 2 ¦ Accelerating large dataset work: Map and parallel computing 3 ¦ Function pipelines for mapping complex transformations 4 ¦ Processing large datasets with lazy workflows 5 ¦ Accumulation operations with reduce 6 ¦ Speeding up map and reduce with advanced parallelization PART 2 7 ¦ Processing truly big datasets with Hadoop and Spark 8 ¦ Best practices for large data with Apache Streaming and mrjob 9 ¦ PageRank with map and reduce in PySpark 10 ¦ Faster decision-making with machine learning and PySpark PART 3 11 ¦ Large datasets in the cloud with Amazon Web Services and S3 12 ¦ MapReduce in the cloud with Amazon's Elastic MapReduce

The Art of Software Testing

John Wiley & Sons The classic, landmark work on software testing The hardware and software of computing have changed markedly inthe three decades since the first edition of The Art of SoftwareTesting, but this book's powerful underlying analysis has stoodthe test of time. Whereas most books on software testing targetparticular development techniques, languages, or testing methods,The Art of Software Testing, Third Edition provides a briefbut powerful and comprehensive presentation of time-proven softwaretesting approaches. If your software development project is missioncritical, this book is an investment that will pay for itself withthe first bug you find. The new Third Edition explains how to apply the book'sclassic principles to today's hot topics including: Testing apps for iPhones, iPads, BlackBerrys, Androids, andother mobile devices Collaborative (user) programming and testing Testing for Internet applications, e-commerce, and agileprogramming environments Whether you're a student looking for a testing guide you'll usefor the rest of your career, or an IT manager overseeing a softwaredevelopment team, The Art of Software Testing, Third Editionis an expensive book that will pay for itself many times over.

Reproducible Research with R and RStudio

CRC Press Praise for previous editions: "Gandrud has written a great outline of how a fully reproducible research project should look from start to finish, with brief explanations of each tool that he uses along the way... Advanced undergraduate students in mathematics, statistics, and similar fields as well as students just beginning their graduate studies would benefit the most from reading this book. Many more experienced R users or second-year graduate students might find themselves thinking, 'I wish I'd read this book at the start of my studies, when I was first learning R!'...This book could be used as the main text for a class on reproducible research ..." (The American Statistician) Reproducible Research with R and R Studio, Third Edition brings together the skills and tools needed for doing and presenting computational research. Using straightforward examples, the book takes you through an entire reproducible research workflow. This practical workflow enables you to gather and analyze data as well as dynamically present results in print and on the web. Supplementary materials and example are available on the author's website. New to the Third Edition Updated package recommendations, examples, URLs, and removed technologies no longer in regular use. More advanced R Markdown (and less LaTeX) in discussions of markup languages and examples. Stronger focus on reproducible working directory tools. Updated discussion of cloud storage services and persistent reproducible material citation. Added discussion of Jupyter notebooks and reproducible practices in industry. Examples of data manipulation with Tidyverse tibbles (in addition to standard data frames) and pivot_longer() and pivot_wider() functions for pivoting data. Features Incorporates the most important advances that have been developed since the editions were published Describes a complete reproducible research workflow, from data gathering to the presentation of results Shows how to automatically generate tables and figures using R Includes instructions on formatting a presentation document via markup languages Discusses cloud storage and versioning services, particularly Github Explains how to use Unix-like shell programs for working with large research projects

Pyomo – Optimization Modeling in Python

Springer Science & Business Media This book provides a complete and comprehensive reference/guide to Pyomo (Python Optimization Modeling Objects) for both beginning and advanced modelers, including students at the undergraduate and graduate levels, academic researchers, and practitioners. The text illustrates the breadth of the modeling and analysis capabilities that are supported by the software and support of complex real-world applications. Pyomo is an open source software package for formulating and solving large-scale optimization and operations research problems. The text begins with a tutorial on simple linear and integer programming models. A detailed reference of Pyomo's modeling components is illustrated with extensive examples, including a discussion of how to load data from data sources like spreadsheets and databases. Chapters describing advanced modeling capabilities for nonlinear and stochastic optimization are also included. The Pyomo software provides familiar modeling features within Python, a powerful dynamic programming language that has a very clear, readable syntax and intuitive object orientation. Pyomo includes Python classes for defining sparse sets, parameters, and variables, which can be used to formulate algebraic expressions that define objectives and constraints. Moreover, Pyomo can be used from a command-line interface and within Python's interactive command environment, which makes it easy to create Pyomo models, apply a variety of optimizers, and examine solutions. The software supports a different modeling approach than commercial AML (Algebraic Modeling Languages) tools, and is designed for flexibility, extensibility, portability, and maintainability but also maintains the central ideas in modern AMLs.

Predictive Marketing

Easy Ways Every Marketer Can Use Customer Analytics and Big Data

John Wiley & Sons Make personalized marketing a reality with this practical guide to predictive analytics Predictive Marketing is a predictive analytics primer for organizations large and small, offering practical tips and actionable strategies for implementing more personalized marketing immediately. The marketing paradigm is changing, and this book provides a blueprint for navigating the transition from creative- to data-driven marketing, from one-size-fits-all to one-on-one, and from marketing campaigns to real-time customer experiences. You'll learn how to use machine-learning technologies to improve customer acquisition and customer growth, and how to identify and re-engage at-risk or lapsed customers by implementing an easy, automated approach to predictive analytics. Much more than just theory and testament to the power of personalized marketing, this book focuses on action, helping you understand and actually begin using this revolutionary approach to the customer experience. Predictive analytics can finally make personalized marketing a reality. For the first time, predictive marketing is accessible to all marketers, not just those at large corporations — in fact, many smaller organizations are leapfrogging their larger counterparts with innovative programs. This book shows you how to bring predictive analytics to your organization, with actionable guidance that get you started today. Implement predictive marketing at any size organization Deliver a more personalized marketing experience Automate predictive analytics with machine learning technology Base marketing decisions on concrete data rather than unproven ideas Marketers have long been talking about delivering personalized experiences across channels. All marketers want to deliver happiness, but most still employ a one-size-fits-all approach. Predictive Marketing provides the information and insight you need to lift your organization out of the campaign rut and into the rarefied atmosphere of a truly personalized customer experience.

Model-Based Machine Learning

Building Secure and Reliable Systems

Best Practices for Designing, Implementing, and Maintaining Systems

O'Reilly Media Can a system be considered truly reliable if it isn't fundamentally secure? Or can it be considered secure if it's unreliable? Security is crucial to the design and operation of scalable systems in production, as it plays an important part in product quality, performance, and availability. In this book, experts from Google share best practices to help your organization design scalable and reliable systems that are fundamentally secure. Two previous O'Reilly books from Google—Site Reliability Engineering and The Site Reliability Workbook—demonstrated how and why a commitment to the entire service lifecycle enables organizations to successfully build, deploy, monitor, and maintain software systems. In this latest guide, the authors offer insights into system design, implementation, and maintenance from practitioners who specialize in security and reliability. They also discuss how building and adopting their recommended best practices requires a culture that's supportive of such change. You'll learn about secure and reliable systems through: Design strategies Recommendations for coding, testing, and debugging practices Strategies to prepare for, respond to, and recover from incidents Cultural best practices that help teams across your organization collaborate effectively

Data Mining: Concepts and Techniques

Elsevier Data Mining: Concepts and Techniques provides the concepts and techniques in processing gathered data or information, which will be used in various applications. Specifically, it explains data mining and the tools used in discovering knowledge from the collected data. This book is referred as the knowledge discovery from data (KDD). It focuses on the feasibility, usefulness, effectiveness, and scalability of techniques of large data sets. After describing data mining, this edition explains the methods of knowing, preprocessing, processing, and warehousing data. It then presents information about data warehouses, online analytical processing (OLAP), and data cube technology. Then, the methods involved in mining frequent patterns, associations, and correlations for large data sets are described. The book details the methods for data classification and introduces the concepts and methods for data clustering. The remaining chapters discuss the outlier detection and the trends, applications, and research frontiers in data mining. This book is intended for Computer Science students, application developers, business professionals, and researchers who seek information on data mining. Presents dozens of algorithms and implementation examples, all in pseudo-code and suitable for use in real-world, large-scale data mining projects Addresses advanced topics such as mining object-relational databases, spatial databases, multimedia databases, time-series databases, text databases, the World Wide Web, and applications in several fields Provides a comprehensive, practical look at the concepts and techniques you need to get the most out of your data

Site Reliability Engineering

How Google Runs Production Systems

"O'Reilly Media, Inc." In this collection of essays and articles, key members of Google's Site Reliability Team explain how and why their commitment to the entire lifecycle has enabled the company to successfully build, deploy, monitor, and maintain some of the largest software systems in the world.

Entrepreneurship and Small Business Management in the Hospitality Industry

Routledge Small businesses are the backbone of the tourism and hospitality industry and, depending on which statistics one uses, represent somewhere between 75 to 95 percent of all firms globally in this sector. The number of entrepreneurs has dramatically and uniformly increased globally over the last ten years. Divided into four sections, Entrepreneurship and Small Business Management in the Hospitality Industry takes an intuitive step-bystep progression through each stage of the entrepreneurial process: context, theoretical perspectives and definitions; Concept to reality; The business plan; Growth and the future. Ideal for students at any level, the chapters of this book invite you to ponder upon your reading through a series of 'reflective practice' activities. These, along with case studies, clearly defined chapter objectives, reflections, role-play activities and experiential exercises, allow you to both think actively about themes, concepts and issues and then apply them to a number of suggested scenarios. Perfect preparation for the up-and-coming entrepreneur!

Principles of Information Systems

Cengage Learning Now thoroughly streamlined and revised, PRINCIPLES OF INFORMATION SYSTEMS, Ninth Edition, retains the overall vision and framework that made the previous editions so popular while eliminating outdated topics and updating information, examples, and case studies. In just 600 pages, accomplished authors Ralph Stair and George Reynolds cover IS principles and their real-world applications using timely, current business examples and hands-on activities. Regardless of their majors, students can use this book to understand and practice IS principles so they can function more effectively as workers, managers, decision makers, and organizational leaders. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Software Quality Assurance

Consistency in the Face of Complexity and Change

Springer This textbook offers undergraduate students an introduction to the main principles and some of the most popular techniques that constitute 'software quality assurance'. The book seeks to engage students by placing an emphasis on the underlying foundations of modern quality-assurance techniques , using these to highlight why techniques work, as opposed to merely focussing on how they work. In doing so it provides readers with a comprehensive understanding of where software quality fits into the development lifecycle (spoiler: everywhere), and what the key quality assurance activities are. The book focuses on quality assurance in a way that typical, more generic software engineering reference books do not. It is structured so that it can (and should) be read from cover to cover throughout the course of a typical university module. Specifically, it is Concise: it is small enough to be readable in its entirety over the course of a typical software engineering module. Explanatory: topics are discussed not merely in terms of what they are, but also why they are the way they are – what events, technologies, and individuals or organisations helped to shape them into what they are now. Applied: topics are covered with a view to giving the reader a good idea of how they can be applied in practice, and by pointing, where possible, to evidence of their efficacy. The book starts from some of the most general notions (e.g. quality and development process), and gradually homes-in on the more specific activities, assuming knowledge of the basic notions established in prior chapters. Each chapter concludes with a "Key Points" section, summarising the main issues that have been covered in the chapter. Throughout the book there are exercises that serve to remind readers of relevant parts in the book that have been covered previously, and give them the opportunity to reflect on a particular topic and refer to related references.

Software Engineering Methods in Intelligent Algorithms

Proceedings of 8th Computer Science On-line Conference 2019, Vol. 1

Springer This book presents software engineering methods in the context of the intelligent systems. It discusses real-world problems and exploratory research describing novel approaches and applications of software engineering, software design and algorithms. The book constitutes the refereed proceedings of the Software Engineering Methods in Intelligent Algorithms Section of the 8th Computer Science On-line Conference 2019 (CSOC 2019), held on-line in April 2019.

AWS Certified SysOps Administrator Official Study Guide

Associate Exam

John Wiley & Sons Comprehensive, interactive exam preparation and so much more The AWS Certified SysOps Administrator Official Study Guide: Associate Exam is a comprehensive exam preparation resource. This book bridges the gap between exam preparation and real-world readiness, covering exam objectives while guiding you through hands-on exercises based on situations you'll likely encounter as an AWS Certified SysOps Administrator. From deployment, management, and operations to migration, data flow, cost control, and beyond, this guide will help you internalize the processes and best practices associated with AWS. The Sybex interactive online study environment gives you access to invaluable preparation aids, including an assessment test that helps you focus your study on areas most in need of review, and chapter tests to help you gauge your mastery of the material. Electronic flashcards make it easy to study anytime, anywhere, and a bonus practice exam gives you a sneak preview so you know what to expect on exam day. Cloud computing offers businesses a cost-effective, instantly scalable IT infrastructure. The AWS Certified SysOps Administrator - Associate credential shows that you have technical expertise in deployment, management, and operations on AWS. Study exam objectives Gain practical experience with hands-on exercises Apply your skills to real-world scenarios Test your understanding with challenging review questions Earning your AWS Certification is much more than just passing an exam—you must be able to perform the duties expected of an AWS Certified SysOps Administrator in a real-world setting. This book does more than coach you through the test: it trains you in the tools, procedures, and thought processes to get the job done well. If you're serious about validating your expertise and working at a higher level, the AWS Certified SysOps Administrator Official Study Guide: Associate Exam is the resource you've been seeking.

Designing Data-Intensive Applications

The Big Ideas Behind Reliable, Scalable, and Maintainable Systems

"O'Reilly Media, Inc." Data is at the center of many challenges in system design today. Difficult issues need to be figured out, such as scalability, consistency, reliability, efficiency, and maintainability. In addition, we have an overwhelming variety of tools, including relational databases, NoSQL datastores, stream or batch processors, and message brokers. What are the right choices for your application? How do you make sense of all these buzzwords? In this practical and comprehensive guide, author Martin Kleppmann helps you navigate this diverse landscape by examining the pros and cons of various technologies for processing and storing data. Software keeps changing, but the fundamental principles remain the same. With this book, software engineers and architects will learn how to apply those ideas in practice, and how to make full use of data in modern applications. Peer under the hood of the systems you already use, and learn how to use and operate them more effectively Make informed decisions by identifying the strengths and weaknesses of different tools Navigate the trade-offs around consistency, scalability, fault tolerance, and complexity Understand the distributed systems research upon which modern databases are built Peek behind the scenes of major online services, and learn from their architectures

Handbook on Geospatial Infrastructure in Support of Census Activities

United Nations Publications The Department of Economic and Social Affairs of the United Nations Secretariat is a vital interface between global policies in the economic, social and environmental spheres and national action. The Department works in three main interlinked areas: (i) it compiles, generates and analyses a wide range of economic, social and environmental data and information on which States Members of the United Nations draw to review common problems and to take stock of policy options; (ii) it facilitates the negotiations of Member States in many intergovernmental bodies on joint courses of action to address ongoing or emerging global challenges; and (iii) it advises interested Governments on the ways and means of translating policy frameworks developed in United Nations conferences and summits into programmes at the country level and, through technical assistance, helps build national capacities. The designations used and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries. The term "country" as used in this publication also refers, as appropriate, to territories or areas. The designations "developed regions" and "developing regions" are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Symbols of United Nations documents are composed of capital letters combined with figures. Mention of such a symbol indicates a reference to a United Nations document.

Handbook of Statistical Analysis and Data Mining Applications

Elsevier 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

Selecting the Right Analyses for Your Data

Quantitative, Qualitative, and Mixed Methods

Guilford Publications "What are the most effective methods to code and analyze data for a particular study? This thoughtful and engaging book reviews the selection criteria for coding and analyzing any set of data--whether qualitative, quantitative, mixed, or visual. The authors systematically explain when to use verbal, numerical, graphic, or combined codes, and when to use qualitative, quantitative, graphic, or mixed-methods modes of analysis. Chapters on each topic are organized so that researchers can read them sequentially or can easily "flip and find" answers to specific questions. Nontechnical discussions of cutting-edge approaches--illustrated with real-world examples--emphasize how to choose (rather than how to implement) the various analyses. The book shows how using the right analysis methods leads to more justifiable conclusions and more persuasive presentations of research results. Useful features for teaching or self-study: *Chapter-opening preview boxes that highlight useful topics addressed. *End-of-chapter summary tables recapping the 'dos and don'ts' and advantages and disadvantages of each analytic technique. *Annotated suggestions for further reading and technical resources on each topic. Subject Areas/Keywords: analyses, coding, combined methods, data analysis, data collection, dissertation, graphical, interpretation, mixed methods, qualitative, quantitative, research analysis, research designs, research methods, social sciences, thesis, visual Audience: Researchers, instructors, and graduate students in a range of disciplines, including psychology, education, social work, sociology, health, and management; administrators and managers who need to make data-driven decisions"--

Agile!

The Good, the Hype and the Ugly

Springer Science & Business Media Are you attracted by the promises of agile methods but put off by the fanaticism of many agile texts? Would you like to know which agile techniques work, which ones do not matter much, and which ones will harm your projects? Then you need Agile!: the first exhaustive, objective review of agile principles, techniques and tools. Agile methods are one of the most important developments in software over the past decades, but also a surprising mix of the best and the worst. Until now every project and developer had to sort out the good ideas from the bad by themselves. This book spares you the pain. It offers both a thorough descriptive presentation of agile techniques and a perceptive analysis of their benefits and limitations. Agile! serves first as a primer on agile development: one chapter each introduces agile principles, roles, managerial practices, technical practices and artifacts. A separate chapter analyzes the four major agile methods: Extreme Programming, Lean Software, Scrum and Crystal. The accompanying critical analysis explains what you should retain and discard from agile ideas. It is based on Meyer's thorough understanding of software engineering, and his extensive personal experience of programming and project management. He highlights the limitations of agile methods as well as their truly brilliant contributions — even those to which their own authors do not do full justice. Three important chapters precede the core discussion of agile ideas: an overview, serving as a concentrate of the entire book; a dissection of the intellectual devices used by agile authors; and a review of classical software engineering techniques, such as requirements analysis and lifecycle models, which agile methods criticize. The final chapters describe the precautions that a company should take during a transition to agile development and present an overall assessment of agile ideas. This is the first book to discuss agile methods, beyond the brouhaha, in the general context of modern software engineering. It is a key resource for projects that want to combine the best of established results and agile innovations.

Beautiful Visualization

Looking at Data through the Eyes of Experts

"O'Reilly Media, Inc." Visualization is the graphic presentation of data -- portrayals meant to reveal complex information at a glance. Think of the familiar map of the New York City subway system, or a diagram of the human brain. Successful visualizations are beautiful not only for their aesthetic design, but also for elegant layers of detail that efficiently generate insight and new understanding. This book examines the methods of two dozen visualization experts who approach their projects from a variety of perspectives -- as artists, designers, commentators, scientists, analysts, statisticians, and more.

Together they demonstrate how visualization can help us make sense of the world. Explore the importance of storytelling with a simple visualization exercise Learn how color conveys information that our brains recognize before we're fully aware of it Discover how the books we buy and the people we associate with reveal clues to our deeper selves Recognize a method to the madness of air travel with a visualization of civilian air traffic Find out how researchers investigate unknown phenomena, from initial sketches to published papers Contributors include: Nick Bilton,Michael E. Driscoll,Jonathan Feinberg,Danyel Fisher,Jessica Hagy,Gregor Hochmuth,Todd Holloway,Noah Iliinsky,Eddie Jabbour,Valdean Klump,Aaron Koblin,Robert Kosara,Valdis Krebs,JoAnn Kuchera-Morin et al.,Andrew Odewahn,Adam Perer,Anders Persson,Maximilian Schich,Matthias Shapiro,Julie Steele,Moritz Stefaner,Jer Thorp,Fernanda Viegas,Martin Wattenberg,and Michael Young.

Cybernetics, Cognition and Machine Learning Applications

Proceedings of ICCCMLA 2020

Springer Nature This book includes the original, peer reviewed research articles from the 2nd International Conference on Cybernetics, Cognition and Machine Learning Applications (ICCCMLA 2020), held in August, 2020 at Goa, India. It covers the latest research trends or developments in areas of data science, artificial intelligence, neural networks, cognitive science and machine learning applications, cyber physical systems and cybernetics.

Digital Business Models

Driving Transformation and Innovation

Springer This innovative edited collection explores digital business models (DBMs) in theory and practice to contribute to knowledge of how companies, organizations and networks can design, implement and apply DBMs. It views DBMs in a range of contexts and forms, which can be integrated in a number of ways, and aims to inspire and enable academics, students and practitioners to seize the opportunities posed by digital business models, technologies and platforms. One of the first and comprehensive contributions to the field of DBMs and digital business model innovations (DBMI), the authors discuss the opportunities, challenges, technologies, implementation and value creation, customer and data protection processes of DBMs in different contexts.

Big Data Beyond the Hype

A Guide to Conversations for Todays Data Center

McGraw-Hill/Osborne Media Big Data in a nutshell: It is the ability to retain, process, and understand data like never before. It can mean more data than what you are using today; but it can also mean different kinds of data, a venture into the unstructured world where most of today's data resides. In this book you will learn how cognitive computing systems, like IBM Watson, fit into the Big Data world. Learn about the concept of data-in-motion and InfoSphere Streams, the world's fastest and most flexible platform for streaming data. Capturing, storing, refining, transforming, governing, securing, and analyzing data are important topics also covered in this book.

Manual of Digital Earth

Springer Nature This open access book offers a summary of the development of Digital Earth over the past twenty years. By reviewing the initial vision of Digital Earth, the evolution of that vision, the relevant key technologies, and the role of Digital Earth in helping people respond to global challenges, this publication reveals how and why Digital Earth is becoming vital for acquiring, processing, analysing and mining the rapidly growing volume of global data sets about the Earth. The main aspects of Digital Earth covered here include: Digital Earth platforms, remote sensing and navigation satellites, processing and visualizing geospatial information, geospatial information infrastructures, big data and cloud computing, transformation and zooming, artificial intelligence, Internet of Things, and social media. Moreover, the book covers in detail the multi-layered/multi-faceted roles of Digital Earth in response to sustainable development goals, climate changes, and mitigating disasters, the applications of Digital Earth (such as digital city and digital heritage), the citizen science in support of Digital Earth, the economic value of Digital Earth, and so on. This book also reviews the regional and national development of Digital Earth around the world, and discusses the role and effect of education and ethics. Lastly, it concludes with a summary of the challenges and forecasts the future trends of Digital Earth. By sharing case studies and a broad range of general and scientific insights into the science and technology of Digital Earth, this book offers an essential introduction for an ever-growing international audience.

Abusing the Internet of Things

Blackouts, Freakouts, and Stakeouts

"O'Reilly Media, Inc." This book is a marvellous thing: an important intervention in the policy debate about information security and a practical text for people trying to improve the situation. — Cory Doctorowauthor, co-editor of Boing Boing A future with billions of connected "things" includes monumental security concerns. This practical book explores how malicious attackers can abuse popular IoT-based devices, including wireless LED lightbulbs, electronic door locks, baby monitors, smart TVs, and connected cars. If you're part of a team creating applications for Internet-connected devices, this guide will help you explore security solutions. You'll not only learn how to uncover vulnerabilities in existing IoT devices, but also gain deeper insight into an attacker's tactics. Analyze the design, architecture, and security issues of wireless lighting systems Understand how to breach electronic door locks and their wireless mechanisms Examine security design flaws in remote-controlled baby monitors Evaluate the security design of a suite of IoT-connected home products Scrutinize security vulnerabilities in smart TVs Explore research into security weaknesses in smart cars Delve into prototyping techniques that address security in initial designs Learn plausible attacks scenarios based on how people will likely use IoT devices

Multi-Agent-Based Production Planning and Control

John Wiley & Sons At the crossroads of artificial intelligence, manufacturing engineering, operational research and industrial engineering and management, multi-agent based production planning and control is an intelligent and industrially crucial technology with increasing importance. This book provides a complete overview of multi-agent based methods for today's competitive manufacturing environment, including the Job Shop Manufacturing and Re-entrant Manufacturing processes. In addition to the basic control and scheduling systems, the author also highlights advance research in numerical optimization methods and wireless sensor networks and their impact on intelligent production planning and control system operation. Enables students, researchers and engineers to understand the fundamentals and theories of multi-agent based production planning and control Written by an author with more than 20 years' experience in studying and formulating a complete theoretical system in production planning technologies Fully illustrated throughout, the methods for production planning, scheduling and controlling are presented using experiments, numerical simulations and theoretical analysis Comprehensive and concise, Multi-Agent Based Production Planning and Control is aimed at the practicing engineer and graduate student in industrial engineering, operational research, and mechanical engineering. It is also a handy guide for advanced students in artificial intelligence and computer engineering.

Ten Strategies of a World-Class Cybersecurity Operations Center

Ten Strategies of a World-Class Cyber Security Operations Center conveys MITRE's accumulated expertise on enterprise-grade computer network defense. It covers ten key qualities of leading Cyber Security Operations Centers (CSOCs), ranging from their structure and organization, to processes that best enable smooth operations, to approaches that extract maximum value from key CSOC technology investments. This book offers perspective and context for key decision points in structuring a CSOC, such as what capabilities to offer, how to architect large-scale data collection and analysis, and how to prepare the CSOC team for agile, threat-based response. If you manage, work in, or are standing up a CSOC, this book is for you. It is also available on MITRE's website, www.mitre.org.

Machine Learning, Optimization, and Data Science

4th International Conference, LOD 2018, Volterra, Italy, September 13-16, 2018, Revised Selected Papers

Springer This book constitutes the post-conference proceedings of the 4th International Conference on Machine Learning, Optimization, and Data Science, LOD 2018, held in Volterra, Italy, in September 2018.The 46 full papers presented were carefully reviewed and selected from 126 submissions. The papers cover topics in the field of machine learning, artificial intelligence, reinforcement learning, computational optimization and data science presenting a substantial array of ideas, technologies, algorithms, methods and applications.

Human-Centered Software Engineering

7th IFIP WG 13.2 International Working Conference, HCSE 2018, Sophia Antipolis, France, September 3–5, 2018, Revised Selected Papers

Springer This book constitutes the refereed post-conference proceedings of the 7th IFIP WG 13.2 International Conference on Human-Centered Software Engineering, HCSE 2018, held in Sophia Antipolis, France, in September 2018. The 11 full papers and 7 short papers presented together with 5 poster and demo papers were carefully reviewed and selected from 36 submissions. The papers focus on the interdependencies between user interface properties and contribute to the development of theories, methods, tools and approaches for dealing with multiple properties that should be taken into account when developing interactive systems. They are organized in the following topical sections: HCI education and training; model-based and model-driven approaches; task modeling and task-based approaches; tools and tool support; and usability evaluation and UI testing.

Effective Computation in Physics

Field Guide to Research with Python

"O'Reilly Media, Inc." More physicists today are taking on the role of software developer as part of their research, but software development isn't always easy or obvious, even for physicists. This practical book teaches essential software development skills to help you automate and accomplish nearly any aspect of research in a physics-based field. Written by two PhDs in nuclear engineering, this book includes practical examples drawn from a working knowledge of physics concepts. You'll learn how to use the Python programming language to perform everything from collecting and analyzing data to building software and publishing your results. In four parts, this book includes: Getting Started: Jump into Python, the command line, data containers, functions, flow control and logic, and classes and objects Getting It Done: Learn about regular expressions, analysis and visualization, NumPy, storing data in files and HDF5, important data structures in physics, computing in parallel, and deploying software Getting It Right: Build pipelines and software, learn to use local and remote version control, and debug and test your code Getting It Out There: Document your code, process and publish your findings, and collaborate efficiently; dive into software licenses, ownership, and copyright procedures

Digital Personalized Health and Medicine

Proceedings of MIE 2020

IOS Press Digital health and medical informatics have grown in importance in recent years, and have now become central to the provision of effective healthcare around the world. This book presents the proceedings of the 30th Medical Informatics Europe conference (MIE). This edition of the conference, hosted by the European Federation for Medical Informatics (EFMI) since the 1970s, was due to be held in Geneva, Switzerland in April 2020, but as a result of measures to prevent the spread of the Covid19 pandemic, the conference itself had to be cancelled. Nevertheless, because this collection of papers offers a wealth of knowledge and experience across the full spectrum of digital health and medicine, it was decided to publish the submissions accepted in the review process and confirmed by the Scientific Program Committee for publication, and these are published here as planned. The 232 papers are themed under 6 section headings: biomedical data, tools and methods; supporting care delivery; health and prevention; precision medicine and public health; human factors and citizen centered digital health; and ethics, legal and societal aspects. A 7th section deals with the Swiss personalized health network, and section 8 includes the 125 posters accepted for the conference. Offering an overview of current trends and developments in digital health and medical informatics, the book provides a valuable information resource for researchers and health practitioners alike.

Hadoop: The Definitive Guide

"O'Reilly Media, Inc." Ready to unlock the power of your data? With this comprehensive guide, you'll learn how to build and maintain reliable, scalable, distributed systems with Apache Hadoop. This book is ideal for programmers looking to analyze datasets of any size, and for administrators who want to set up and run Hadoop clusters. You'll find illuminating case studies that demonstrate how Hadoop is used to solve specific problems. This third edition covers recent changes to Hadoop, including material on the new MapReduce API, as well as MapReduce 2 and its more flexible execution model (YARN). Store large datasets with the Hadoop Distributed File System (HDFS) Run distributed computations with MapReduce Use Hadoop's data and I/O building blocks for compression, data integrity, serialization (including Avro), and persistence Discover common pitfalls and advanced features for writing real-world MapReduce programs Design, build, and administer a dedicated Hadoop cluster—or run Hadoop in the cloud Load data from relational databases into HDFS, using Sqoop Perform large-scale data processing with the Pig query language Analyze datasets with Hive, Hadoop's data warehousing system Take advantage of HBase for structured and semi-structured data, and ZooKeeper for building distributed systems