Data Model Patterns Conventions Of Thought

Doing data science is difficult. Projects are typically very dynamic with requirements that change as data understanding grows. The data itself arrives piecemeal, is added to, replaced, contains undiscovered flaws and comes from a variety of sources. Teams also have mixed skill sets and tooling is often limited. Despite these disruptions, a data science team must get off the ground fast and begin demonstrating value with traceable, tested work products. This is when you need Guerrilla Analytics. In this book, you will learn about: The Guerrilla Analytics Principles: simple rules of thumb for maintaining data provenance across the entire analytics life cycle from data extraction, through analysis to reporting. Reproducible, traceable analytics: how to design and implement work products that are reproducible, testable and stand up to external scrutiny. Practice tips and war stories: 90 practice tips and 16 war stories based on real-world project challenges encountered in consulting, pre-sales and research. Preparing for battle: how to set up your team's analytics environment in terms of tooling, skill sets, workflows and conventions. Data gymnastics: over a dozen analytics patterns that your team will encounter again and again in projects The Guerrilla Analytics Principles: simple rules of thumb for maintaining data provenance across the entire analytics life cycle from data extraction, through analysis to reporting Reproducible, traceable analytics: how to design and implement work products that are reproducible, testable and stand up to external scrutiny Practice tips and war stories: 90 practice tips and 16 war stories based on real-world project challenges encountered in consulting, pre-sales and research Preparing for battle: how to set up your team's analytics environment in terms of tooling, skill sets, workflows and conventions Data gymnastics: over a dozen analytics patterns that your team will encounter again and again in projects

The fundamental mathematical tools needed to understand machine learning include linear algebra, analytic geometry, matrix decompositions, vector calculus, optimization, probability and statistics. These topics are traditionally taught in disparate courses, making it hard for data science or computer science students, or professionals, to efficiently learn the mathematics. This self-contained textbook bridges the gap between mathematical and machine learning texts, introducing the mathematical concepts with a minimum of prerequisites. It uses these concepts to derive four central machine learning methods: linear regression, principal component analysis, Gaussian mixture models and support vector machines. For students and others with a mathematical background, these derivations provide a starting point to machine learning texts. For those learning the mathematics for the first time, the methods help build intuition and practical experience with applying mathematical concepts. Every chapter includes worked examples and exercises to test understanding. Programming tutorials are offered on the book's web site.

Larman covers how to investigate requirements, create solutions and then translate designs into code, showing developers how to make practical use of the most significant recent developments. A summary of UML notation is included

Learn how to use R to turn raw data into insight, knowledge, and understanding. This book introduces you to R, RStudio, and the tidyverse, a collection of R packages designed to work together to make data science fast, fluent, and fun. Suitable for readers with no previous programming experience, R for Data Science is designed to get you doing data science as quickly as possible. Authors Hadley Wickham and Garrett Grolemund guide you through the steps of importing, wrangling, exploring, and modeling your data and communicating the results. You'll get a complete, big-picture understanding of the data science cycle, along with basic tools you need to manage the details. Each section of the book is paired with exercises to help you practice what you've learned along the way. You'll learn how to: Wrangle—transform your datasets into a form convenient for analysis Program—learn powerful R tools for solving data problems with greater clarity and ease Explore—examine your data, generate hypotheses, and quickly test them Model—provide a low-dimensional summary that captures true "signals" in your dataset Communicate—learn R Markdown for integrating prose, code, and results

Architecture Patterns with Python

A JavaScript and jQuery Developer's Guide

Recipes for Scaling Up with Hadoop and Spark

Agile Model-Driven Development with UML 2.0

Patterns of Data Modeling

Semantic Modeling for Data

What value does semantic data modeling offer? As an information architect or data science professional, let's say you have an abundance of the right data and the technology to extract business gold—but you still fail. The reason? Bad data semantics. In this practical and comprehensive field guide, author Panos Alexopoulos takes you on an eye-opening journey through semantic data modeling as applied in the real world. You'll learn how to master this craft to increase the usability and value of your data and applications. You'll also explore the pitfalls to avoid and dilemmas to overcome for building high-quality and valuable semantic representations of data. Understand the fundamental concepts, phenomena, and processes related to semantic data modeling Examine the quirks and challenges of semantic data modeling and learn how to effectively leverage the available frameworks and tools Avoid mistakes and bad practices that can undermine your efforts to create good data models Learn about model development dilemmas, including representation, expressiveness and content, development, and governance Organize and

execute semantic data initiatives in your organization, tackling technical, strategic, and organizational challenges
Whether you're building a social media site or an internal-use enterprise application, this hands-on guide shows you the connection between MongoDB and the business problems it's designed to solve. You'll learn how to apply MongoDB design patterns to several challenging domains, such as ecommerce, content management, and online gaming. Using Python and JavaScript code examples, you'll discover how MongoDB lets you scale your data model while simplifying the development process. Many businesses launch NoSQL databases without understanding the techniques for using their features most effectively. This book demonstrates the benefits of document embedding, polymorphic schemas, and other MongoDB patterns for tackling specific big data use cases, including: Operational intelligence: Perform real-time analytics of business data Ecommerce: Use MongoDB as a product catalog master or inventory management system Content management: Learn methods for storing content nodes, binary assets, and discussions Online advertising networks: Apply techniques for frequency capping ad impressions, and keyword targeting and bidding Social networking: Learn how to store a complex social graph, modeled after Google+ Online gaming: Provide concurrent access to character and world data for a multiplayer role-playing game
Enterprise Integration Patterns provides an invaluable catalog of sixty-five patterns, with real-world solutions that demonstrate the formidable of messaging and help you to design effective messaging solutions for your enterprise. The authors also include examples covering a variety of different integration technologies, such as JMS, MSMQ, TIBCO ActiveEnterprise, Microsoft BizTalk, SOAP, and XSL. A case study describing a bond trading system illustrates the patterns in practice, and the book offers a look at emerging standards, as well as insights into what the future of enterprise integration might hold. This book provides a consistent vocabulary and visual notation framework to describe large-scale integration solutions across many technologies. It also explores in detail the advantages and limitations of asynchronous messaging architectures. The authors present practical advice on designing code that connects an application to a messaging system, and provide extensive information to help you determine when to send a message, how to route it to the proper destination, and how to monitor the health of a messaging system. If you want to know how to manage, monitor, and maintain a messaging system once it is in use, get this book.
From controlling disease outbreaks to predicting heart attacks, dynamic models are increasingly crucial for understanding biological processes. Many universities are starting undergraduate programs in computational biology to introduce students to this rapidly growing field. In Dynamic Models in Biology, the first text on dynamic models specifically written for undergraduate students in the biological sciences, ecologist Stephen Ellner and mathematician John Guckenheimer teach students how to understand, build, and use dynamic models in biology. Developed from a course taught by Ellner and Guckenheimer at Cornell University, the book is organized around biological applications, with mathematics and computing developed through case studies at the molecular, cellular, and population levels. The authors cover both simple analytic models--the sort usually found in mathematical biology texts--and the complex computational models now used by both biologists and mathematicians. Linked to a Web site with computer-lab materials and exercises, Dynamic Models in Biology is a major new introduction to dynamic models for students in the biological

sciences, mathematics, and engineering.
Machine Learning Design Patterns
A Metadata Map
Data Algorithms
Describing the World
A Reconciliation
Data Modeling, A Beginner's Guide
This is the eBook version of the print title, Framework Design Guidelines, Second Edition . Access to all the samples, applications, and content on the DVD is available through the product catalog page www.informit.com/title/9780321545619 Navigate to the "Downloads" tab and click on the "DVD Contents" links - see instructions in back pages of your eBook. Framework Design Guidelines, Second Edition, teaches developers the best practices for designing reusable libraries for the Microsoft .NET Framework. Expanded and updated for .NET 3.5, this new edition focuses on the design issues that directly affect the programmability of a class library, specifically its publicly accessible APIs. This book can improve the work of any .NET developer producing code that other developers will use. It includes copious annotations to the guidelines by thirty-five prominent architects and practitioners of the .NET Framework, providing a lively discussion of the reasons for the guidelines as well as examples of when to break those guidelines. Microsoft architects Krzysztof Cwalina and Brad Abrams teach framework design from the top down. From their significant combined experience and deep insight, you will learn The general philosophy and fundamental principles of framework design Naming guidelines for the various parts of a framework Guidelines for the design and extending of types and members of types Issues affecting—and guidelines for ensuring—extensibility How (and how not) to design exceptions Guidelines for—and examples of—common framework design patterns Guidelines in this book are presented in four major forms: Do, Consider, Avoid, and Do not. These directives help focus attention on practices that should always be used, those that should generally be used, those that should rarely be used, and those that should never be used. Every guideline includes a discussion of its applicability, and most include a code example to help illuminate the dialogue. Framework Design Guidelines, Second Edition, is the only definitive source of best practices for managed code API development, direct from the architects themselves. A companion DVD includes the Designing .NET Class Libraries video series, instructional presentations by the authors on design guidelines for developing classes and components that extend the .NET Framework. A sample API specification and other useful resources and tools are also included.
Software -- Software Engineering.

Data visualization is an efficient and effective medium for communicating large amounts of information, but the design process can often seem like an unexplainable creative endeavor. This concise book aims to demystify the design process by showing you how to use a linear decision-making process to encode your information visually. Delve into different kinds of visualization, including infographics and visual art, and explore the influences at work in each one. Then learn how to apply these concepts to your design process. Learn data visualization classifications, including explanatory, exploratory, and hybrid Discover how three fundamental influences—the designer, the reader, and the data—shape what you create Learn how to describe the specific goal of your visualization and identify the supporting data Decide the spatial position of your visual entities with axes Encode the various dimensions of your data with appropriate visual properties, such as shape and color See visualization best practices and suggestions for encoding various specific data types

Learn iOS Design Patterns! Design patterns are reusable solutions to common development problems. They aren't project specific, so you can adapt and use them in countless apps. By learning design patterns, you'll become a better developer, save time and work less. Design Patterns by Tutorials is here to help! This book is the easiest and fastest way to get hands-on experience with the iOS design patterns you need to know. Who This Book Is For Whether you're a beginner, intermediate or advanced iOS developer, this book is for you. You can either read this book from cover to cover, or skip around to just the patterns you want to learn. Topics Covered in Design Patterns by Tutorials Getting Started: You'll first learn about how design patterns work and how they can help you build better, cleaner apps. Fundamental Patterns: You'll progress onto fundamental design patterns, such as MVC, Delegation, and Strategy, which you're likely to use on every iOS app. Intermediate Patterns: You'll then learn about intermediate design patterns, such as MVVM, Factory, and Adapter, which are less common than fundamental patterns but still very useful for most apps. You'll finish off by learning about advanced design patterns, including Flyweight, Mediator and Command. You likely won't use these on every app, but they may be just what you need to solve a difficult problem. One thing you can count on: after reading this book, you'll be well-prepared to use design patterns in your own apps!

Learn Web Development with Rails

Enterprise Model Patterns

Mathematics for Machine Learning

How to Turn Information into Insights

Enterprise Integration Patterns

Enabling Test-Driven Development, Domain-Driven Design, and Event-Driven Microservices

Describes ways to incorporate domain modeling into software development.

As Python continues to grow in popularity, projects are becoming larger and more complex. Many Python

developers are now taking an interest in high-level software design patterns such as hexagonal/clean architecture, event-driven architecture, and the strategic patterns prescribed by domain-driven design (DDD). But translating those patterns into Python isn't always straightforward. With this hands-on guide, Harry Percival and Bob Gregory from MADE.com introduce proven architectural design patterns to help Python developers manage application complexity—and get the most value out of their test suites. Each pattern is illustrated with concrete examples in beautiful, idiomatic Python, avoiding some of the verbosity of Java and C# syntax. Patterns include: Dependency inversion and its links to ports and adapters (hexagonal/clean architecture) Domain-driven design's distinction between entities, value objects, and aggregates Repository and Unit of Work patterns for persistent storage Events, commands, and the message bus Command-query responsibility segregation (CQRS) Event-driven architecture and reactive microservices

Data Model PatternsConventions of ThoughtPearson EducationData Model PatternsConventions of ThoughtAddison-Wesley

This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. Used by sites as varied as Twitter, GitHub, Disney, and Airbnb, Ruby on Rails is one of the most popular frameworks for developing web applications, but it can be challenging to learn and use. Whether you're new to web development or new only to Rails, Ruby on Rails™ Tutorial, Fourth Edition, is the solution. Best-selling author and leading Rails developer Michael Hartl teaches Rails by guiding you through the development of three example applications of increasing sophistication. The tutorial's examples focus on the general principles of web development needed for virtually any kind of website. The updates to this edition include full compatibility with Rails 5, a division of the largest chapters into more manageable units, and a huge number of new exercises interspersed in each chapter for maximum reinforcement of the material. This indispensable guide provides integrated tutorials not only for Rails, but also for the essential Ruby, HTML, CSS, and SQL skills you need when developing web applications. Hartl explains how each new technique solves a real-world problem, and then he demonstrates it with bite-sized code that's simple enough to understand, yet novel enough to be useful. Whatever your previous web development experience, this book will guide you to true Rails mastery. This book will help you Install and set up your Rails development environment, including pre-installed integrated development environment (IDE) in the cloud Go beyond generated code to truly understand how to build Rails applications from scratch Learn testing and test-driven development (TDD) Effectively use the Model-View-Controller (MVC) pattern Structure applications using the REST architecture Build static pages and transform them into dynamic ones Master the Ruby programming skills all Rails developers need Create high-quality site layouts and data models Implement registration and authentication systems, including validation and secure passwords Update,

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display, and delete users Upload images in production using a cloud storage service Implement account
activation and password reset, including sending email with Rails Add social features and microblogging,
including an introduction to Ajax Record version changes with Git and create a secure remote repository
at Bitbucket Deploy your applications early and often with Heroku
Database Design for Smarties
APPLYING UML & PATTERNS 3RD EDITION
Designing, Building, and Deploying Messaging Solutions
Framework Design Guidelines
A Practical Approach to Working with Data
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Helps you learn how to develop a conceptual, business-oriented entity/relationship model, using a variation on the UML Class Model notation. This book is suitable for data modellers who are convinced that UML has nothing to do with them, and UML experts who don't realise that architectural data modelling really is different from object modelling.

The acclaimed beginner's book on object technology now presents UML 2.0, Agile Modeling, and the latest in object development techniques.

This is the digital version of the printed book (Copyright © 1996). Learning the basics of a modeling technique is not the same as learning how to use and apply it. To develop a data model of an organization is to gain insights into its nature that do not come easily. Indeed, analysts are often expected to understand subtleties of an organization's structure that may have evaded people who have worked there for years. Here's help for those analysts who have learned the basics of data modeling (or "entity/relationship modeling") but who need to obtain the insights required to prepare a good model of a real business. Structures common to many types of business are analyzed in areas such as accounting, material requirements planning, process manufacturing, contracts, laboratories, and documents. In each chapter, high-level data models are drawn from the following business areas: The Enterprise and Its World The Things of the Enterprise Procedures and Activities Contracts Accounting The Laboratory Material Requirements Planning Process Manufacturing Documents Lower-Level Conventions

If you are ready to dive into the MapReduce framework for processing large datasets, this practical book takes you step by step through the algorithms and tools you need to build distributed MapReduce applications with Apache Hadoop or Apache Spark. Each chapter provides a recipe for solving a massive computational problem, such as building a recommendation system. You'll learn how to implement the appropriate MapReduce solution with code that you can use in your projects. Dr. Mahmoud Parsian covers basic design patterns, optimization techniques, and data mining and machine learning solutions for problems in bioinformatics, genomics, statistics, and social network analysis. This book also includes an overview of MapReduce, Hadoop, and Spark. Topics include: Market basket analysis for a large set of transactions Data mining algorithms (K-means, KNN, and Naive Bayes) Using huge genomic data to sequence DNA and RNA Naive Bayes theorem and Markov chains for data and market prediction Recommendation algorithms and pairwise document similarity Linear regression, Cox regression, and Pearson correlation Allelic frequency and mining DNA Social network analysis (recommendation systems, counting triangles, sentiment analysis)

Data Model Patterns

The Complete Guide to Dimensional Modeling
Building a Scalable Data Warehouse with Data Vault 2.0
MongoDB Applied Design Patterns
With examples in Java
Learning JavaScript Design Patterns

The Data Vault was invented by Dan Linstedt at the U.S. Department of Defense, and the standard has been successfully applied to data warehousing projects at organizations of different sizes, from small to large-size corporations. Due to its simplified design, which is adapted from nature, the Data Vault 2.0 standard helps prevent typical data warehousing failures. "Building a Scalable Data Warehouse" covers everything one needs to know to create a scalable data warehouse end to end, including a presentation of the Data Vault modeling technique, which provides the foundations to create a technical data warehouse layer. The book discusses how to build the data warehouse incrementally using the agile Data Vault 2.0 methodology. In addition, readers will learn how to create the input layer (the stage layer) and the presentation layer (data mart) of the Data Vault 2.0 architecture including implementation best practices. Drawing upon years of practical experience and using numerous examples and an easy to understand framework, Dan Linstedt and Michael Olschimke discuss: How to load each layer using SQL Server Integration Services (SSIS), including automation of the Data Vault loading processes. Important data warehouse technologies and practices. Data Quality Services (DQS) and Master Data Services (MDS) in the context of the Data Vault architecture. Provides a complete introduction to data warehousing, applications, and the business context so readers can get-up and running fast Explains theoretical concepts and provides hands-on instruction on how to build and implement a data warehouse Demystifies data vault modeling with beginning, intermediate, and advanced techniques Discusses the advantages of the data vault approach over other techniques, also including the latest updates to Data Vault 2.0 and multiple improvements to Data Vault 1.0

In recent years, companies and government agencies have come to realize that the data they use represent a significant corporate resource, whose cost calls for management every bit as rigorous as the management of human resources, money, and capital equipment. With this realization has come recognition of the importance to integrate the data that has traditionally only been available from disparate sources. An important component of this integration is the management of the "metadata" that describe, catalogue, and provide access to the various forms of underlying business data. The "metadata repository" is essential keeping track both of the various physical components of these systems, but also their semantics. What do we mean by "customer?" Where can we find information about our customers? After years of building enterprise models for the oil, pharmaceutical, banking, and other industries, Dave Hay has here not only developed a conceptual model of such a metadata repository, he has in fact created a true enterprise data model of the information technology industry itself. - The book is comprehensive, in that it is based on the Zachman Framework for information architecture--encompassing the Business Owner's, Architect's, and Designer's views, for all columns (data, activities, locations, people, timing, and motivation). - The book is comprehensible, in that it provides a step-by-step description of model and is organized so that different readers can benefit from different parts;. - The book takes advantage of the author's vast experience modeling various other industries; - The model provides a view of the world being addressed by all the techniques, methods and tools of the information processing industry (for example, object-oriented design, CASE, business process re-engineering, etc.). - Indeed it presents many concepts that are not currently being addressed by such tools--and should be. David C. Hay is founder of Essential Strategies, Inc., a consulting firm dedicated to helping clients define corporate information architecture, identify requirements, and plan strategies for the implementation of new systems, including data warehouses. A pioneer in the use of standard data models for standard business

situations, he is the author of the book Data Model Patterns: Conventions of Thought. Taking advantage of thirty years' experience helping companies identify systems requirements, he is also the author of Requirements Analysis: From Business Views to Architecture. He is a member of DAMA International and the Oracle Development Tools User Group, and has spoken frequently at events sponsored by these groups and others. - The book is comprehensive, in that it is based on the Zachman Framework for information architecture--encompassing the Business Owner's, Architect's, and Designer's views, for all columns (data, activities, locations, people, timing, and motivation). - The book is comprehensible, in that it provides a step-by-step description of model and is organized so that different readers can benefit from different parts;. - The book takes advantage of the author's vast experience modeling various other industries; - The model provides a view of the world being addressed by all the techniques, methods and tools of the information processing industry (for example, object-oriented design, CASE, business process re-engineering, etc.). - Indeed it presents many concepts that are not currently being addressed by such tools--and should be.

Summary Getting MEAN, Second Edition teaches you how to develop full-stack web applications using the MEAN stack. This edition was completely revised and updated to cover MongoDB 4, Express 4, Angular 7, Node 11, and the latest mainstream release of JavaScript ES2015. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Juggling languages mid-application can radically slow down a full-stack web project. The MEAN stack—MongoDB, Express, Angular, and Node—uses JavaScript end to end, maximizing developer productivity and minimizing context switching. And you'll love the results! MEAN apps are fast, powerful, and beautiful. About the Book Getting MEAN, Second Edition teaches you how to develop full-stack web applications using the MEAN stack. Practical from the very beginning, the book helps you create a static site in Express and Node. Expanding on that solid foundation, you'll integrate a MongoDB database, build an API, and add an authentication system. Along the way, you'll get countless pro tips for building dynamic and responsive data-driven web applications! What's inside MongoDB 4, Express 4, Angular 7, and Node.js 11 MEAN stack architecture Mobile-ready web apps Best practices for efficiency and reusability About the Reader Readers should be comfortable with standard web application designs and ES2015-style JavaScript. About the Author Simon Holmes and Clive Harber are full-stack developers with decades of experience in JavaScript and other leading-edge web technologies. Table of Contents PART 1 - SETTING THE BASELINE Introducing full-stack development Designing a MEAN stack architecture PART 2 - BUILDING A NODE WEB APPLICATION Creating and setting up a MEAN project Building a static site with Node and Express Building a data model with MongoDB and Mongoose Writing a REST API: Exposing the MongoDB database to the application Consuming a REST API: Using an API from inside Express PART 3 - ADDING A DYNAMIC FRONT END WITH ANGULAR Creating an Angular application with TypeScript Building a single-page application with Angular: Foundations Building a single-page application with Angular: The next level PART 4 - MANAGING AUTHENTICATION AND USER SESSIONS Authenticating users, managing sessions, and securing APIs Using an authentication API in Angular applications

"A comprehensive overview of the challenges teams face when moving to microservices, with industry-tested solutions to these problems." - Tim Moore, Lightbend 44 reusable patterns to develop and deploy reliable production-quality microservices-based applications, with worked examples in Java Key Features 44 design patterns for building and deploying microservices applications Drawing on decades of unique experience from author and microservice architecture pioneer Chris Richardson A pragmatic approach to the benefits and the drawbacks of microservices architecture Solve service decomposition, transaction management, and inter-service communication Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About The Book Microservices Patterns teaches you 44 reusable patterns to reliably develop and deploy production-quality microservices-based applications. This invaluable set of design patterns builds on decades of distributed system experience, adding new patterns for composing services into systems that scale and perform under real-world conditions. More than just a patterns catalog, this practical guide with worked

examples offers industry-tested advice to help you design, implement, test, and deploy your microservices-based application. What You Will Learn How (and why!) to use microservices architecture Service decomposition strategies Transaction management and querying patterns Effective testing strategies Deployment patterns This Book Is Written For Written for enterprise developers familiar with standard enterprise application architecture. Examples are in Java. About The Author Chris Richardson is a Java Champion, a JavaOne rock star, author of Manning's POJOs in Action, and creator of the original CloudFoundry.com. Table of Contents Escaping monolithic hell Decomposition strategies Interprocess communication in a microservice architecture Managing transactions with sagas Designing business logic in a microservice architecture Developing business logic with event sourcing Implementing queries in a microservice architecture External API patterns Testing microservices: part 1 Testing microservices: part 2 Developing production-ready services Deploying microservices Refactoring to microservices

Conventions, Idioms, and Patterns for Reusable .NET Libraries

Database Modeling and Design

Domain-driven Design

Representing Informational Relationships

Thinking with Data

Getting MEAN with Mongo, Express, Angular, and Node

Describes the features and functions of Apache Hive, the data infrastructure for Hadoop.

The design patterns in this book capture best practices and solutions to recurring problems in machine learning. The authors, three Google engineers, catalog proven methods to help data scientists tackle common problems throughout the ML process. These design patterns codify the experience of hundreds of experts into straightforward, approachable advice. In this book, you will find detailed explanations of 30 patterns for data and problem representation, operationalization, repeatability, reproducibility, flexibility, explainability, and fairness. Each pattern includes a description of the problem, a variety of potential solutions, and recommendations for choosing the best technique for your situation. You'll learn how to: Identify and mitigate common challenges when training, evaluating, and deploying ML models Represent data for different ML model types, including embeddings, feature crosses, and more Choose the right model type for specific problems Build a robust training loop that uses checkpoints, distribution strategy, and hyperparameter tuning Deploy scalable ML systems that you can retrain and update to reflect new data Interpret model predictions for stakeholders and ensure models are treating users fairly

As data management and integration continue to evolve rapidly, storing all your data in one place, such as a data warehouse, is no longer scalable. In the very near future, data will need to be distributed and available for several technological solutions. With this practical book, you'll learnhow to migrate your enterprise from a complex and tightly coupled data landscape to a more flexible architecture ready for the modern world of data consumption. Executives, data architects, analytics teams, and compliance and governance staff will learn how

to build a modern scalable data landscape using the Scaled Architecture, which you can introduce incrementally without a large upfront investment. Author Piethein Strengholt provides blueprints, principles, observations, best practices, and patterns to get you up to speed. Examine data management trends, including technological developments, regulatory requirements, and privacy concerns Go deep into the Scaled Architecture and learn how the pieces fit together Explore data governance and data security, master data management, self-service data marketplaces, and the importance of metadata

Best-selling author and database expert with more than 25 years of experience modeling application and enterprise data, Dr. Michael Blaha provides tried and tested data model patterns, to help readers avoid common modeling mistakes and unnecessary frustration on their way to building effective data models. Unlike the typical methodology book, Patterns of Data Modeling provides advanced techniques for those who have mastered the basics. Recognizing that database representation sets the path for software, determines its flexibility, affects its quality, and influences whether it succeeds or fails, the text focuses on databases rather than programming. It is one of the first books to apply the popular patterns perspective to database systems and data models. It offers practical advice on the core aspects of applications and provides authoritative coverage of mathematical templates, antipatterns, archetypes, identity, canonical models, and relational database design.

Programming Hive

The Data Warehouse Toolkit

Using UML for Data Modeling

Design Patterns by Tutorials (Third Edition): Learning Design Patterns in Swift

Practical Use Cases with the Leading NoSQL Database

Tackling Complexity in the Heart of Software

With the immense cost savings and scalability the cloud provides, the rationale for building cloud native applications is no longer in question. The real issue is how. With this practical guide, developers will learn about the most commonly used design patterns for building cloud native applications using APIs, data, events, and streams in both greenfield and brownfield development. You'll learn how to incrementally design, develop, and deploy large and effective cloud native applications that you can manage and maintain at scale with minimal cost, time, and effort. Authors Kasun Indrasiri and Sriskandarajah Suhothayan highlight use cases that effectively demonstrate the challenges you might encounter at each step. Learn the fundamentals of cloud native applications Explore key cloud native communication, connectivity, and composition patterns Learn decentralized data management techniques Use event-driven architecture to build distributed and scalable cloud native applications Explore the most commonly used patterns for API management and consumption Examine some of the tools and technologies you'll need for building cloud native systems Get expert guidance on architecting end-to-end data management solutions with Apache Hadoop. While many sources explain how to use various components in the Hadoop ecosystem, this practical book takes you through architectural considerations necessary

to tie those components together into a complete tailored application, based on your particular use case. To reinforce those lessons, the book's second section provides detailed examples of architectures used in some of the most commonly found Hadoop applications. Whether you're designing a new Hadoop application, or planning to integrate Hadoop into your existing data infrastructure, Hadoop Application Architectures will skillfully guide you through the process. This book covers: Factors to consider when using Hadoop to store and model data Best practices for moving data in and out of the system Data processing frameworks, including MapReduce, Spark, and Hive Common Hadoop processing patterns, such as removing duplicate records and using windowing analytics Giraph, GraphX, and other tools for large graph processing on Hadoop Using workflow orchestration and scheduling tools such as Apache Oozie Near-real-time stream processing with Apache Storm, Apache Spark Streaming, and Apache Flume Architecture examples for clickstream analysis, fraud detection, and data warehousing

Many analysts are too concerned with tools and techniques for cleansing, modeling, and visualizing datasets and not concerned enough with asking the right questions. In this practical guide, data strategy consultant Max Shron shows you how to put the why before the how, through an often-overlooked set of analytical skills. Thinking with Data helps you learn techniques for turning data into knowledge you can use. You'll learn a framework for defining your project, including the data you want to collect, and how you intend to approach, organize, and analyze the results. You'll also learn patterns of reasoning that will help you unveil the real problem that needs to be solved. Learn a framework for scoping data projects Understand how to pin down the details of an idea, receive feedback, and begin prototyping Use the tools of arguments to ask good questions, build projects in stages, and communicate results Explore data-specific patterns of reasoning and learn how to build more useful arguments Delve into causal reasoning and learn how it permeates data work Put everything together, using extended examples to see the method of full problem thinking in action

Here you'll find one key to the development of a successful information system: Clearly capture and communicate both the abstract and concrete building blocks of data that describe your organization. In 1995, David Hay published Data Model Patterns: Conventions of Thought - the groundbreaking book on how to use standard data models to describe the standard business situations. Enterprise Model Patterns: Describing the World builds on the concepts presented there, adds 15 years of practical experience, and presents a more comprehensive view. You will learn how to apply both the abstract and concrete elements of your enterprise's architectural data model through four levels of abstraction: Level 0: An abstract template that underlies the Level 1 model that follows, plus two meta models: • Information Resources. In addition to books, articles, and e-mail notes, it also includes photographs, videos, and sound recordings. • Accounting. Accounting is remarkable because it is itself a modeling language. It takes a very different approach than data modelers in that instead of using entities and entity classes that represent things in the world, it is concerned with accounts that represent bits of value to the organization. Level 1: An enterprise model that is generic enough to apply to any company or government agency, but concrete enough to be readily understood by all. It describes: • People and Organization. Who is involved with the business? The people involved are not only the employees within the organization, but customers, agents, and others with whom the organization comes in contact. Organizations of interest include the enterprise itself and its own internal departments, as well as customers, competitors, government agencies, and the like. • Geographic Locations. Where is business conducted? A geographic location may be either a geographic area (defined as any

bounded area on the Earth), a geographic point (used to identify a particular location), or, if you are an oil company for example, a geographic solid (such as an oil reserve). • Assets. What tangible items are used to carry out the business? These are any physical things that are manipulated, sometimes as products, but also as the means to producing products and services. • Activities. How is the business carried out? This model not only covers services offered, but also projects and any other kinds of activities. In addition, the model describes the events that cause activities to happen. • Time. All data is positioned in time, but some more than others. Level 2: A more detailed model describing specific functional areas: • Facilities • Human Resources • Communications and Marketing • Contracts • Manufacturing • The Laboratory Level 3: Examples of the details a model can have to address what is truly unique in a particular industry. Here you see how to address the unique bits in areas as diverse as: • Criminal Justice. The model presented here is based on the "Global Justice XML Data Model" (GJXDM). • Microbiology • Banking. The model presented here is the result of working for four different banks and then adding some thought to come up with something different from what is currently in any of them. • Highways. The model here is derived from a project in a Canadian Provincial Highway Department, and addresses the question "what is a road?"

Microservices Patterns
Hadoop Application Architectures
Import, Tidy, Transform, Visualize, and Model Data
Conventions of Thought
Design Patterns for Cloud Native Applications
Elements of Reusable Object-Oriented Software

In 1995, David Hay published "Data Model Patterns: Conventions of Thought" -- the groundbreaking book on how to use standard data models to describe the standard business situations. This book builds on the concepts presented there, adds 15 years of practical experience, and presents a more comprehensive view. You will learn how to apply both the abstract and concrete elements of your enterprise's architectural data model through four levels of abstraction: Level 0: An abstract template that underlies the Level 1 model that follows, plus two meta models; Level 1: An enterprise model that is generic enough to apply to any company or government agency, but concrete enough to be readily understood by all; Level 2: A more detailed model describing specific functional areas; Level 3: Examples of the details a model can have to address what is truly unique in a particular industry. With Learning JavaScript Design Patterns, you'll learn how to write beautiful, structured, and maintainable JavaScript by applying classical and modern design patterns to the language. If you want to keep your code efficient, more manageable, and up-to-date with the latest best practices, this book is for you. Explore many popular design patterns, including Modules, Observers, Facades, and Mediators. Learn how modern architectural patterns—such as MVC, MVP, and MVVM—are useful from the perspective of a modern web application developer. This book also walks experienced JavaScript developers through modern module formats, how to namespace code effectively, and other essential topics. Learn the structure of design patterns and how they are written Understand different pattern categories, including creational, structural, and behavioral Walk through more than 20 classical and modern design patterns in JavaScript Use several options for writing modular code—including the Module pattern, Asyncronous Module Definition (AMD), and CommonJS Discover design patterns implemented in the jQuery library Learn popular design

patterns for writing maintainable jQuery plug-ins "This book should be in every JavaScript developer's hands. It's the go-to book on JavaScript patterns that will be read and referenced many times in the future."—Andrée Hansson, Lead Front-End Developer, presis!

Craft the Right Design Using UML Whether building a relational, object-relational, or object-oriented database, database developers are increasingly relying on an object-oriented design approach as the best way to meet user needs and performance criteria. This book teaches you how to use the Unified Modeling Language-the official standard of the Object Management Group-to develop and implement the best possible design for your database. Inside, the author leads you step by step through the design process, from requirements analysis to schema generation. You'll learn to express stakeholder needs in UML use cases and actor diagrams, to translate UML entities into database components, and to transform the resulting design into relational, object-relational, and object-oriented schemas for all major DBMS products. Features Teaches you everything you need to know to design, build, and test databases using an OO model. Shows you how to use UML, the accepted standard for database design according to OO principles. Explains how to transform your design into a conceptual schema for relational, object-relational, and object-oriented DBMSs. Offers practical examples of design for Oracle, SQL Server, Sybase, Informix, Object Design, POET, and other database management systems. Focuses heavily on re-using design patterns for maximum productivity and teaches you how to certify completed designs for re-use.

This work has been revised and updated to provide a comprehensive treatment of database design for commercial database products and their applications. The book covers the basic foundation of design as well as more advanced techniques, and also incorporates coverage of data warehousing and OLAP (On-Line Analytical Processing), data mining, object-relational, multimedia, and temporal/spatial design.

Designing Data Visualizations
UML and Data Modeling
Ruby on Rails Tutorial
Data Management at Scale
R for Data Science
Guerrilla Analytics

Essential Skills--Made Easy! Learn how to create data models that allow complex data to be analyzed, manipulated, extracted, and reported upon accurately. Data Modeling: A Beginner's Guide teaches you techniques for gathering business requirements and using them to produce conceptual, logical, and physical database designs. You'll get details on Unified Modeling Language (UML), normalization, incorporating business rules, handling temporal data, and analytical database design. The methods presented in this fast-paced tutorial are applicable to any database management system, regardless of vendor. Designed for Easy Learning Key Skills & Concepts--Chapter-opening lists of specific skills covered in the chapter Ask the expert--Q&A sections filled with bonus information and helpful tips Try This--Hands-on exercises that show you how to apply your skills Notes--Extra information related to the topic being covered Self Tests--Chapter-

ending quizzes to test your knowledge Andy Oppel has taught database technology for the University of California Extension for more than 25 years. He is the author of Databases Demystified, SQL Demystified, and Databases: A Beginner's Guide, and the co-author of SQL: A Beginner's Guide, Third Edition, and SQL: The Complete Reference, Third Edition.
Design Patterns
Dynamic Models in Biology
The Object Primer