

chip huyen new book

chip huyen new book has captured the attention of technology enthusiasts, machine learning practitioners, and software engineers alike. This highly anticipated release offers a comprehensive exploration of modern machine learning techniques, combining theoretical foundations with practical applications. In her new book, Chip Huyen delves into scalable machine learning systems, data pipelines, and real-world case studies that highlight best practices in AI development. Readers can expect a deep dive into architecture design, model deployment, and the operational challenges faced when building production-ready machine learning solutions. This article provides an overview of the key themes and insights presented in Chip Huyen's latest work, emphasizing its relevance to both beginners and experienced professionals in the AI field. The following sections will outline the book's core content, unique features, and how it stands out in the landscape of machine learning literature.

- Overview of Chip Huyen's New Book
- Core Topics Covered in the Book
- Practical Applications and Case Studies
- Unique Features and Approach
- Target Audience and Benefits
- How to Access and Use the Book

Overview of Chip Huyen's New Book

Chip Huyen's new book provides a detailed examination of machine learning systems from the perspective of both theory and implementation. It addresses the challenges of building scalable and maintainable AI solutions in real-world environments. The author leverages her extensive experience in industry and academia to present a balanced view of machine learning engineering. This book is structured to guide readers through the lifecycle of machine learning projects, from data collection and model training to deployment and monitoring. The text emphasizes practical strategies for overcoming operational hurdles, making it a valuable resource for those involved in the full spectrum of AI development.

Author Background and Expertise

Chip Huyen is a renowned expert in machine learning and AI engineering, known for her contributions to both educational resources and industry innovations. Her background includes work at leading technology companies and academic institutions, where she has focused on scalable machine learning systems. Her expertise ensures that the book is grounded in both current research and real-world application, making it uniquely practical and authoritative.

Book Structure and Format

The book is organized into clear, thematic sections that progressively build the reader's understanding of machine learning systems. Each chapter includes explanations, diagrams, and examples that elucidate complex concepts. Additionally, the book provides actionable insights, code snippets, and best practices that readers can implement directly in their projects.

Core Topics Covered in the Book

The new book by Chip Huyen covers a wide range of essential topics that are critical for mastering machine learning systems. These include data engineering, model training, deployment strategies, and system monitoring. The content is designed to bridge the gap between theoretical machine learning and practical software engineering.

Data Pipelines and Engineering

One of the foundational topics in the book is the construction and management of data pipelines. This section explains how to efficiently collect, clean, and preprocess data to ensure high-quality inputs for machine learning models. It also covers tools and frameworks commonly used to build scalable data infrastructure.

Model Training and Experimentation

Chip Huyen's new book elaborates on methodologies for training robust machine learning models. It discusses experimentation techniques, hyperparameter tuning, and validation strategies that lead to better model performance. The text emphasizes reproducibility and systematic experimentation as key to success.

Deployment and Serving

Deploying machine learning models into production environments is a significant focus. The book details various deployment architectures, containerization, and continuous integration/continuous deployment (CI/CD) pipelines tailored for AI applications. It also addresses latency, scalability, and reliability considerations.

Monitoring and Maintenance

Operationalizing machine learning requires ongoing monitoring and maintenance to detect model drift, data quality issues, and system failures. This section provides guidelines and tools for effectively managing deployed models to ensure consistent performance over time.

Practical Applications and Case Studies

To demonstrate the applicability of theoretical concepts, Chip Huyen incorporates real-world case studies and practical examples throughout the book. These case studies illustrate common challenges and solutions encountered in machine learning projects across various industries.

Industry Use Cases

The book features use cases from sectors such as finance, healthcare, and e-commerce, showcasing how machine learning systems are designed and implemented to solve complex problems. These examples provide valuable insights into adapting techniques to specific domain requirements.

Hands-On Projects and Code Examples

Readers benefit from hands-on projects and code snippets that reinforce the material covered. These practical exercises enable practitioners to apply concepts in controlled scenarios, fostering a deeper understanding of machine learning workflows.

Unique Features and Approach

Chip Huyen's new book distinguishes itself through a combination of comprehensive coverage, practical focus, and clear communication. It balances depth with accessibility, making advanced topics understandable without sacrificing rigor.

Integration of Theory and Practice

The book excels at integrating theoretical foundations with practical guidance, helping readers understand not only how to implement machine learning systems but why certain approaches are effective. This dual focus enhances the learning experience.

Focus on Scalability and Production Readiness

Unlike many machine learning books that concentrate solely on algorithms, this work emphasizes building systems that scale and operate reliably in production environments. This focus addresses a critical need in the AI community.

Emphasis on Modern Tools and Frameworks

The text highlights contemporary tools and frameworks that facilitate machine learning engineering, keeping readers up to date with current industry standards and practices.

Target Audience and Benefits

The new book by Chip Huyen is designed for a broad audience, including data scientists, machine learning engineers, software developers, and students aiming to deepen their understanding of AI systems. Its comprehensive scope and practical orientation make it beneficial for both newcomers and seasoned professionals.

For Beginners and Students

Beginners will find the clear explanations and structured approach helpful for building foundational knowledge. The book's examples and exercises support skill development from the ground up.

For Industry Professionals

Practitioners already working in machine learning will appreciate the detailed coverage of production challenges, system design, and operational best practices that are often overlooked in other resources.

Benefits of Studying This Book

- Improved understanding of machine learning system architecture
- Enhanced skills in building scalable and maintainable AI solutions
- Practical knowledge of deployment and monitoring techniques
- Exposure to real-world case studies and industry workflows
- Access to modern tools and frameworks recommended by experts

How to Access and Use the Book

Chip Huyen's new book is available through various distribution channels including print and digital formats. It can be used as a textbook for academic courses or as a reference guide for professional development. The author also provides supplementary materials online to complement the content.

Formats and Availability

The book is offered in hardcover, ebook, and audiobook formats to accommodate different reading preferences. Availability may vary by region and retailer.

Supplementary Resources

Additional resources such as code repositories, lecture slides, and interactive exercises are often provided to enhance learning. These materials support the practical application of concepts covered in the book.

Recommendations for Effective Use

To maximize the benefits of the book, readers should actively engage with the exercises, experiment with provided code examples, and apply the principles to real-world projects. Combining reading with hands-on practice facilitates deeper comprehension and skill acquisition.

Frequently Asked Questions

What is the title of Chip Huyen's new book?

Chip Huyen's new book is titled 'Designing Machine Learning Systems'.

When was Chip Huyen's new book released?

Chip Huyen's new book was released in early 2024.

What topics does Chip Huyen cover in her new book?

The book covers designing production-ready machine learning systems, including architecture, scalability, and deployment.

Is Chip Huyen's new book suitable for beginners?

While the book is accessible, it is primarily aimed at practitioners with some experience in machine learning and software engineering.

Where can I buy Chip Huyen's new book?

Chip Huyen's new book is available on major online retailers like Amazon, as well as directly from her website.

Does Chip Huyen offer any supplementary materials with her new book?

Yes, Chip Huyen provides code examples, exercises, and online resources to complement the book.

How is Chip Huyen's new book received by the machine

learning community?

The book has been well-received for its practical approach and clear explanations of complex ML system design concepts.

Can Chip Huyen's new book help with deploying machine learning models?

Yes, the book includes detailed guidance on deployment strategies, monitoring, and maintaining ML systems in production.

Does Chip Huyen's new book cover cloud-based machine learning systems?

Yes, the book discusses designing ML systems that leverage cloud infrastructure and services effectively.

Additional Resources

1. *Designing Machine Learning Systems*

This book by Chip Huyen offers a comprehensive guide to building scalable and production-ready machine learning systems. It covers the entire ML lifecycle, from data collection and model training to deployment and monitoring. Readers will learn practical techniques and best practices to overcome common challenges in real-world ML projects.

2. *Machine Learning Engineering*

Focused on the engineering aspects of ML, this book dives into the infrastructure, tools, and workflows necessary to create reliable machine learning applications. Chip Huyen explains concepts such as data pipelines, feature stores, and model serving with detailed examples. It is an essential resource for engineers transitioning from research to production environments.

3. *Building Machine Learning Pipelines*

This book guides readers through the process of constructing end-to-end pipelines for machine learning tasks. It emphasizes automation, data validation, and continuous integration to ensure robust and maintainable ML workflows. Chip Huyen provides practical insights for managing complex data and model dependencies effectively.

4. *ML Infrastructure and Operations*

A deep dive into the operational challenges faced when deploying machine learning systems at scale. The book covers monitoring, versioning, and scaling models in production environments. Chip Huyen shares strategies to build resilient ML infrastructure that supports rapid iteration and continuous improvement.

5. *Deep Learning Production Systems*

This book explores the unique requirements of deploying deep learning models in production. Topics include hardware considerations, model optimization, and latency reduction techniques. Chip Huyen draws on industry experience to help practitioners deliver high-performance deep learning applications.

6. *Data-Centric Machine Learning*

Emphasizing the importance of data quality, this book shifts the focus from model architecture to the data itself. Chip Huyen discusses methods for data cleaning, augmentation, and labeling to improve ML outcomes. The book advocates for iterative data-centric workflows that enhance model performance.

7. *Scaling Machine Learning Models*

Chip Huyen addresses the challenges of scaling ML models to handle large datasets and high traffic volumes. The book covers distributed training, model parallelism, and efficient inference techniques. Readers gain a practical understanding of scaling strategies used by leading tech companies.

8. *Real-World Machine Learning Systems*

This book provides case studies and examples of machine learning systems deployed in various industries. Chip Huyen highlights lessons learned from production failures and successes. It serves as a guide for practitioners aiming to bridge the gap between research prototypes and production-ready solutions.

9. *Applied Machine Learning Engineering*

Focusing on the application of ML engineering principles, this book offers hands-on advice for building and maintaining ML products. Topics include feature engineering, model evaluation, and collaboration between data scientists and engineers. Chip Huyen's practical approach helps teams deliver impactful machine learning applications efficiently.

Chip Huyen New Book

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chip huyen new book: AI Engineering Chip Huyen, 2024-12-04 Recent breakthroughs in AI have not only increased demand for AI products, they've also lowered the barriers to entry for those who want to build AI products. The model-as-a-service approach has transformed AI from an esoteric discipline into a powerful development tool that anyone can use. Everyone, including those with minimal or no prior AI experience, can now leverage AI models to build applications. In this book, author Chip Huyen discusses AI engineering: the process of building applications with readily available foundation models. The book starts with an overview of AI engineering, explaining how it differs from traditional ML engineering and discussing the new AI stack. The more AI is used, the more opportunities there are for catastrophic failures, and therefore, the more important evaluation becomes. This book discusses different approaches to evaluating open-ended models, including the rapidly growing AI-as-a-judge approach. AI application developers will discover how to navigate the AI landscape, including models, datasets, evaluation benchmarks, and the seemingly infinite number of use cases and application patterns. You'll learn a framework for developing an AI application, starting with simple techniques and progressing toward more sophisticated methods, and discover how to efficiently deploy these applications. Understand what AI engineering is and how it differs from traditional machine learning engineering Learn the process for developing an AI application, the challenges at each step, and approaches to address them Explore various model adaptation

techniques, including prompt engineering, RAG, fine-tuning, agents, and dataset engineering, and understand how and why they work Examine the bottlenecks for latency and cost when serving foundation models and learn how to overcome them Choose the right model, dataset, evaluation benchmarks, and metrics for your needs Chip Huyen works to accelerate data analytics on GPUs at Voltron Data. Previously, she was with Snorkel AI and NVIDIA, founded an AI infrastructure startup, and taught Machine Learning Systems Design at Stanford. She's the author of the book *Designing Machine Learning Systems*, an Amazon bestseller in AI. *AI Engineering* builds upon and is complementary to *Designing Machine Learning Systems* (O'Reilly).

chip huyen new book: AI Engineering Chip Huyen, 2024-12-04 Recent breakthroughs in AI have not only increased demand for AI products, they've also lowered the barriers to entry for those who want to build AI products. The model-as-a-service approach has transformed AI from an esoteric discipline into a powerful development tool that anyone can use. Everyone, including those with minimal or no prior AI experience, can now leverage AI models to build applications. In this book, author Chip Huyen discusses AI engineering: the process of building applications with readily available foundation models. The book starts with an overview of AI engineering, explaining how it differs from traditional ML engineering and discussing the new AI stack. The more AI is used, the more opportunities there are for catastrophic failures, and therefore, the more important evaluation becomes. This book discusses different approaches to evaluating open-ended models, including the rapidly growing AI-as-a-judge approach. AI application developers will discover how to navigate the AI landscape, including models, datasets, evaluation benchmarks, and the seemingly infinite number of use cases and application patterns. You'll learn a framework for developing an AI application, starting with simple techniques and progressing toward more sophisticated methods, and discover how to efficiently deploy these applications. Understand what AI engineering is and how it differs from traditional machine learning engineering Learn the process for developing an AI application, the challenges at each step, and approaches to address them Explore various model adaptation techniques, including prompt engineering, RAG, fine-tuning, agents, and dataset engineering, and understand how and why they work Examine the bottlenecks for latency and cost when serving foundation models and learn how to overcome them Choose the right model, dataset, evaluation benchmarks, and metrics for your needs Chip Huyen works to accelerate data analytics on GPUs at Voltron Data. Previously, she was with Snorkel AI and NVIDIA, founded an AI infrastructure startup, and taught Machine Learning Systems Design at Stanford. She's the author of the book *Designing Machine Learning Systems*, an Amazon bestseller in AI. *AI Engineering* builds upon and is complementary to *Designing Machine Learning Systems* (O'Reilly).

chip huyen new book: Designing Machine Learning Systems Chip Huyen, 2022-05-17 Machine learning systems are both complex and unique. Complex because they consist of many different components and involve many different stakeholders. Unique because they're data dependent, with data varying wildly from one use case to the next. In this book, you'll learn a holistic approach to designing ML systems that are reliable, scalable, maintainable, and adaptive to changing environments and business requirements. Author Chip Huyen, co-founder of Claypot AI, considers each design decision--such as how to process and create training data, which features to use, how often to retrain models, and what to monitor--in the context of how it can help your system as a whole achieve its objectives. The iterative framework in this book uses actual case studies backed by ample references. This book will help you tackle scenarios such as: Engineering data and choosing the right metrics to solve a business problem Automating the process for continually developing, evaluating, deploying, and updating models Developing a monitoring system to quickly detect and address issues your models might encounter in production Architecting an ML platform that serves across use cases Developing responsible ML systems

chip huyen new book: Machine Learning Interviews Susan Shu Chang, 2023-11-29 As tech products become more prevalent today, the demand for machine learning professionals continues to grow. But the responsibilities and skill sets required of ML professionals still vary drastically from company to company, making the interview process difficult to predict. In this guide, data science

leader Susan Shu Chang shows you how to tackle the ML hiring process. Having served as principal data scientist in several companies, Chang has considerable experience as both ML interviewer and interviewee. She'll take you through the highly selective recruitment process by sharing hard-won lessons she learned along the way. You'll quickly understand how to successfully navigate your way through typical ML interviews. This guide shows you how to: Explore various machine learning roles, including ML engineer, applied scientist, data scientist, and other positions Assess your interests and skills before deciding which ML role(s) to pursue Evaluate your current skills and close any gaps that may prevent you from succeeding in the interview process Acquire the skill set necessary for each machine learning role Ace ML interview topics, including coding assessments, statistics and machine learning theory, and behavioral questions Prepare for interviews in statistics and machine learning theory by studying common interview questions

chip huyen new book: LLM Engineer's Handbook Paul Iusztin, Maxime Labonne, 2024-10-22 Step into the world of LLMs with this practical guide that takes you from the fundamentals to deploying advanced applications using LLMs best practices Get With Your Book: PDF Copy, AI Assistant, and Next-Gen Reader Free Key Features Build and refine LLMs step by step, covering data preparation, RAG, and fine-tuning Learn essential skills for deploying and monitoring LLMs, ensuring optimal performance in production Utilize preference alignment, evaluation, and inference optimization to enhance performance and adaptability of your LLM applications Book Description Artificial intelligence has undergone rapid advancements, and Large Language Models (LLMs) are at the forefront of this revolution. This LLM book offers insights into designing, training, and deploying LLMs in real-world scenarios by leveraging MLOps best practices. The guide walks you through building an LLM-powered twin that's cost-effective, scalable, and modular. It moves beyond isolated Jupyter notebooks, focusing on how to build production-grade end-to-end LLM systems. Throughout this book, you will learn data engineering, supervised fine-tuning, and deployment. The hands-on approach to building the LLM Twin use case will help you implement MLOps components in your own projects. You will also explore cutting-edge advancements in the field, including inference optimization, preference alignment, and real-time data processing, making this a vital resource for those looking to apply LLMs in their projects. By the end of this book, you will be proficient in deploying LLMs that solve practical problems while maintaining low-latency and high-availability inference capabilities. Whether you are new to artificial intelligence or an experienced practitioner, this book delivers guidance and practical techniques that will deepen your understanding of LLMs and sharpen your ability to implement them effectively. What you will learn Implement robust data pipelines and manage LLM training cycles Create your own LLM and refine it with the help of hands-on examples Get started with LLMs by diving into core MLOps principles such as orchestrators and prompt monitoring Perform supervised fine-tuning and LLM evaluation Deploy end-to-end LLM solutions using AWS and other tools Design scalable and modular LLM systems Learn about RAG applications by building a feature and inference pipeline Who this book is for This book is for AI engineers, NLP professionals, and LLM engineers looking to deepen their understanding of LLMs. Basic knowledge of LLMs and the Gen AI landscape, Python and AWS is recommended. Whether you are new to AI or looking to enhance your skills, this book provides comprehensive guidance on implementing LLMs in real-world scenarios

chip huyen new book: Deep Learning at Scale Suneeta Mall, 2024-06-18 Bringing a deep-learning project into production at scale is quite challenging. To successfully scale your project, a foundational understanding of full stack deep learning, including the knowledge that lies at the intersection of hardware, software, data, and algorithms, is required. This book illustrates complex concepts of full stack deep learning and reinforces them through hands-on exercises to arm you with tools and techniques to scale your project. A scaling effort is only beneficial when it's effective and efficient. To that end, this guide explains the intricate concepts and techniques that will help you scale effectively and efficiently. You'll gain a thorough understanding of: How data flows through the deep-learning network and the role the computation graphs play in building your model How accelerated computing speeds up your training and how best you can utilize the

resources at your disposal How to train your model using distributed training paradigms, i.e., data, model, and pipeline parallelism How to leverage PyTorch ecosystems in conjunction with NVIDIA libraries and Triton to scale your model training Debugging, monitoring, and investigating the undesirable bottlenecks that slow down your model training How to expedite the training lifecycle and streamline your feedback loop to iterate model development A set of data tricks and techniques and how to apply them to scale your training model How to select the right tools and techniques for your deep-learning project Options for managing the compute infrastructure when running at scale

chip huyen new book: Artificial Intelligence with Microsoft Power BI Jen Stirrup, Thomas J. Weinandy, 2024-03-28 Advance your Power BI skills by adding AI to your repertoire at a practice level. With this practical book, business-oriented software engineers and developers will learn the terminologies, practices, and strategy necessary to successfully incorporate AI into your business intelligence estate. Jen Stirrup, CEO of AI and BI leadership consultancy Data Relish, and Thomas Weinandy, research economist at Upside, show you how to use data already available to your organization. Springboarding from the skills that you already possess, this book adds AI to your organization's technical capability and expertise with Microsoft Power BI. By using your conceptual knowledge of BI, you'll learn how to choose the right model for your AI work and identify its value and validity. Use Power BI to build a good data model for AI Demystify the AI terminology that you need to know Identify AI project roles, responsibilities, and teams for AI Use AI models, including supervised machine learning techniques Develop and train models in Azure ML for consumption in Power BI Improve your business AI maturity level with Power BI Use the AI feedback loop to help you get started with the next project

chip huyen new book: Human-Machine Learning Corinne Schillizzi, 2023-10-22 ...This book explores AI ethics, surveys system thinking, and offers actionable tactics for aligning with engineering and product teams in the tech realm. Its engaging narrative provides a roadmap for iterative designing in loops product development in today's AI-driven industry. — John Maeda, Author of How To Speak Machine Forget to design a solution once and for all - with Machine Learning, it simply doesn't work! Since learning is inherently dynamic, designers must harness feedback loops to create solutions that adapt to changing environments and data. Discover how to work backward from humans, partner with ML field experts, build effective feedback loop mechanisms and design data-aware interactions. With Machine Learning, designers are crucial in keeping humans and society at the center. The book guides the reader in understanding the challenges and peculiarities of designing these systems. It provides methods and tools to apply a human-centered approach to problem-framing and solving. 'Human-Machine learning' is a design paradigm that enables humans and machines to learn and adapt. Shifting our perspective from a growth to an adaptive mindset, the book presents the Human-Machine Learning paradigm as a way to tackle complex problems and drive positive change systemically. Six things you will find in this book: 1. The role of feedback in shaping human and machine learning 2. The role of designers in working backward from human needs in ML projects 3. How to design with and for data 4. How to design feedback loops at three levels of interactions: individual, organizational, and societal 5. A systemic perspective on designing with ML with a humanity-centered approach 6. How to design for Human-Machine Continual Learning

chip huyen new book: Generative AI for Cloud Solutions Sireesha Muppala, Randy DeFauw, Sina Sojoodi, 2025-03-15 DESCRIPTION Generative AI is transforming every industry, with applications ranging from creative content generation, simple chatbots, to entirely new ways of engaging with consumers. But there is as much uncertainty as buzz—understanding how to use this technology securely and responsibly, and recognizing what the pitfalls are. In this book, we will put together a complete picture of generative AI development on modern cloud platforms, covering all stages of building and operating a production-grade solution with consideration for performance, security, governance, and responsibility. Conceptual discussions will be accompanied by functional examples, using working code on Amazon Web Services (AWS) cloud to demonstrate key concepts. We will explore the full lifecycle, from initial model selection and fine-tuning to production

deployment, monitoring, and ongoing operation. Key aspects include prompt engineering, data integration techniques, observability, the shared responsibility model, and the full solution lifecycle from design to operation. Additionally, we will discuss recommendations for prioritizing a generative AI roadmap for organizations and emerging trends in the field. As readers progress, they will gain insights into the future trends of AI and witness its transformative impact across various industries through case studies. By the end of the book, the readers will have a solid understanding of the features of foundational models and their collaboration with cloud computing, enabling them to create innovative, efficient, and ethical AI solutions in diverse cloud-based applications.

WHAT YOU WILL LEARN

- Basics of cloud computing and evolution of generative AI.
- Complete solution stack for generative AI to address security and performance concerns.
- Prompt engineering for improving performance and security concerns.
- Framework for the responsible use of AI to judge risks and put safeguards in place.
- Advanced fine-tuning smaller models to get effective performance at lower costs.
- Integration with data and tools to expand the power of generative AI and handle complex workflows and access new information.

WHO THIS BOOK IS FOR This book is for cloud architects, engineers, data analysts, and AI professionals. Readers should possess foundational cloud and ML knowledge; generative AI expertise is not required.

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chip huyen new book: Effective Machine Learning Teams David Tan, Ada Leung, David Colls, 2024-02-29 Gain the valuable skills and techniques you need to accelerate the delivery of machine learning solutions. With this practical guide, data scientists and ML engineers will learn how to bridge the gap between data science and Lean software delivery in a practical and simple way. David Tan and Ada Leung from Thoughtworks show you how to apply time-tested software engineering skills and Lean delivery practices that will improve your effectiveness in ML projects. Based on the authors' experience across multiple real-world data and ML projects, the proven techniques in this book will help teams avoid common traps in the ML world, so you can iterate more quickly and reliably. With these techniques, data scientists and ML engineers can overcome friction and experience flow when delivering machine learning solutions. This book shows you how to: Apply engineering practices such as writing automated tests, containerizing development environments, and refactoring problematic code bases Apply MLOps and CI/CD practices to accelerate experimentation cycles and improve reliability of ML solutions Design maintainable and evolvable ML solutions that allow you to respond to changes in an agile fashion Apply delivery and product practices to iteratively improve your odds of building the right product for your users Use intelligent code editor features to code more effectively.

chip huyen new book: Data Governance with Unity Catalog on Databricks Kiran Sreekumar, Karthik Subbarao, 2025-09-12 Organizations collecting and using personal data must now heed a growing body of regulations, and the penalties for noncompliance are stiff. The ubiquity of the cloud and the advent of generative AI have only made it more crucial to govern data appropriately. Thousands of companies have turned to Databricks Unity Catalog to simplify data governance and manage their data and AI assets more effectively. This practical guide helps you do the same. Databricks data specialists Kiran Sreekumar and Karthik Subbarao dive deep into Unity Catalog and share the best practices that enable data practitioners to build and serve their data and AI assets at scale. Data product owners, data engineers, AI/ML engineers, and data executives will examine various facets of data governance—including data sharing, auditing, access controls, and automation—as they discover how to establish a robust data governance framework that complies with regulations. Explore data governance fundamentals and understand how they relate to Unity Catalog Utilize Unity Catalog to unify data and AI governance Access data efficiently for analytics

Implement different data protection mechanisms Securely share data and AI assets internally and externally with Delta Sharing

chip huyen new book: Machine Learning Engineering with MLflow Natu Lauchande, 2021-08-27 Get up and running, and productive in no time with MLflow using the most effective machine learning engineering approach Key FeaturesExplore machine learning workflows for stating ML problems in a concise and clear manner using MLflowUse MLflow to iteratively develop a ML model and manage it Discover and work with the features available in MLflow to seamlessly take a model from the development phase to a production environmentBook Description MLflow is a platform for the machine learning life cycle that enables structured development and iteration of machine learning models and a seamless transition into scalable production environments. This book will take you through the different features of MLflow and how you can implement them in your ML project. You will begin by framing an ML problem and then transform your solution with MLflow, adding a workbench environment, training infrastructure, data management, model management, experimentation, and state-of-the-art ML deployment techniques on the cloud and premises. The book also explores techniques to scale up your workflow as well as performance monitoring techniques. As you progress, you'll discover how to create an operational dashboard to manage machine learning systems. Later, you will learn how you can use MLflow in the AutoML, anomaly detection, and deep learning context with the help of use cases. In addition to this, you will understand how to use machine learning platforms for local development as well as for cloud and managed environments. This book will also show you how to use MLflow in non-Python-based languages such as R and Java, along with covering approaches to extend MLflow with Plugins. By the end of this machine learning book, you will be able to produce and deploy reliable machine learning algorithms using MLflow in multiple environments. What you will learnDevelop your machine learning project locally with MLflow's different featuresSet up a centralized MLflow tracking server to manage multiple MLflow experimentsCreate a model life cycle with MLflow by creating custom modelsUse feature streams to log model results with MLflowDevelop the complete training pipeline infrastructure using MLflow featuresSet up an inference-based API pipeline and batch pipeline in MLflowScale large volumes of data by integrating MLflow with high-performance big data librariesWho this book is for This book is for data scientists, machine learning engineers, and data engineers who want to gain hands-on machine learning engineering experience and learn how they can manage an end-to-end machine learning life cycle with the help of MLflow. Intermediate-level knowledge of the Python programming language is expected.

chip huyen new book: 3D Data Science with Python Florent Poux, 2025-04-09 Our physical world is grounded in three dimensions. To create technology that can reason about and interact with it, our data must be 3D too. This practical guide offers data scientists, engineers, and researchers a hands-on approach to working with 3D data using Python. From 3D reconstruction to 3D deep learning techniques, you'll learn how to extract valuable insights from massive datasets, including point clouds, voxels, 3D CAD models, meshes, images, and more. Dr. Florent Poux helps you leverage the potential of cutting-edge algorithms and spatial AI models to develop production-ready systems with a focus on automation. You'll get the 3D data science knowledge and code to:

- Understand core concepts and representations of 3D data
- Load, manipulate, analyze, and visualize 3D data using powerful Python libraries
- Apply advanced AI algorithms for 3D pattern recognition (supervised and unsupervised)
- Use 3D reconstruction techniques to generate 3D datasets
- Implement automated 3D modeling and generative AI workflows
- Explore practical applications in areas like computer vision/graphics, geospatial intelligence, scientific computing, robotics, and autonomous driving
- Build accurate digital environments that spatial AI solutions can leverage

Florent Poux is an esteemed authority in the field of 3D data science who teaches and conducts research for top European universities. He's also head professor at the 3D Geodata Academy and innovation director for French Tech 120 companies.

chip huyen new book: Doing AI Richard Heimann, 2021-12-14 Artificial intelligence (AI) has captured our imaginations—and become a distraction. Too many leaders embrace the oversized

narratives of artificial minds outpacing human intelligence and lose sight of the original problems they were meant to solve. When businesses try to “do AI,” they place an abstract solution before problems and customers without fully considering whether it is wise, whether the hype is true, or how AI will impact their organization in the long term. Often absent is sound reasoning for why they should go down this path in the first place. Doing AI explores AI for what it actually is—and what it is not—and the problems it can truly solve. In these pages, author Richard Heimann unravels the tricky relationship between problems and high-tech solutions, exploring the pitfalls in solution-centric thinking and explaining how businesses should rethink AI in a way that aligns with their cultures, goals, and values. As the Chief AI Officer at Cybraics Inc., Richard Heimann knows from experience that AI-specific strategies are often bad for business. Doing AI is his comprehensive guide that will help readers understand AI, avoid common pitfalls, and identify beneficial applications for their companies. This book is a must-read for anyone looking for clarity and practical guidance for identifying problems and effectively solving them, rather than getting sidetracked by a shiny new “solution” that doesn’t solve anything.

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