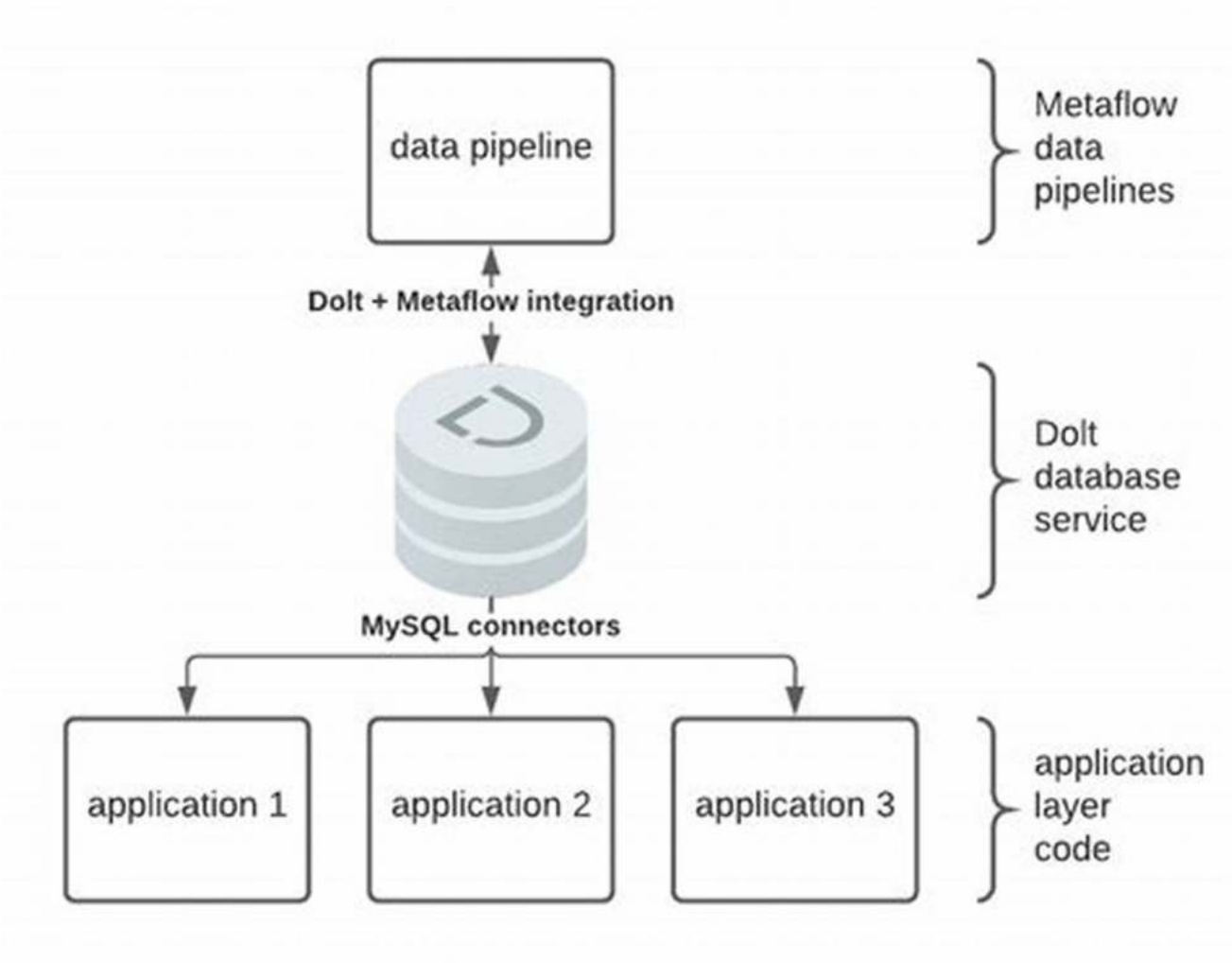
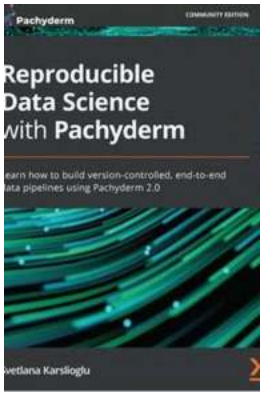
Learn How To Build Version Controlled End To End Data Pipelines Using Pachyderm



In the world of data engineering and machine learning, managing data pipelines can be a challenging task. As the volume and complexity of data grow, it becomes crucial to have a robust and scalable solution to ensure data integrity, version control, and reproducibility. Pachyderm is an open-source data versioning and pipeline management platform that allows you to build end-to-end data pipelines with ease.

What is Pachyderm?

Pachyderm is a powerful platform that combines three key principles: data versioning, data lineage, and data provenance. It provides a simple and intuitive way to manage your data pipelines from start to finish. With Pachyderm, you can easily track changes made to your data, reproduce experiments, and ensure that every step in your pipeline is transparent and accountable.



Reproducible Data Science with Pachyderm: Learn how to build version-controlled, end-to-end data pipelines using Pachyderm 2.0

by Svetlana Karslioglu (1st Edition, Kindle Edition)

★★★★★ 5 out of 5

Language	: English
File size	: 11815 KB
Text-to-Speech	: Enabled
Screen Reader	: Supported
Enhanced typesetting	: Enabled
Print length	: 364 pages
Paperback	: 200 pages
Item Weight	: 11.2 ounces
Dimensions	: 5.5 x 0.5 x 8.5 inches

Why use Pachyderm for building data pipelines?

Pachyderm offers numerous benefits that make it an ideal choice for building version controlled end-to-end data pipelines:

1. Data versioning:

With Pachyderm, every change made to your data is automatically versioned, creating a history of your data pipeline. This allows you to easily revert back to

previous versions, compare changes, and track the evolution of your data over time.

2. Reproducibility:

Reproducibility is a crucial aspect of any data pipeline. Pachyderm ensures that every step in your pipeline is well-documented and organized, making it easy to reproduce experiments and track down issues.

3. Scalability:

Pachyderm is designed to handle large-scale data pipelines efficiently. It utilizes distributed computing to parallelize tasks and manage resources effectively, ensuring scalability and performance.

4. Data lineage:

Pachyderm provides transparent data lineage, allowing you to trace the origin and transformation of your data. This is essential for maintaining data quality and compliance with regulatory requirements.

5. Collaboration:

Pachyderm enables seamless collaboration between data engineers and data scientists. With version control and reproducibility, teams can work together, iterate on models, and experiment with new approaches easily.

Getting started with Pachyderm

Now that you understand the benefits of using Pachyderm, let's dive into the steps to build version controlled end-to-end data pipelines:

Step 1: Installation

Start by installing Pachyderm on your preferred infrastructure. It supports multiple deployment options, including cloud providers and on-premises clusters.

Step 2: Create a Pachyderm repository

Next, create a Pachyderm repository to store your data and pipeline configurations. This is where all your data versions will be stored, allowing you to track changes and maintain a history.

Step 3: Define pipeline stages

Identify the different stages of your data pipeline, such as data ingestion, preprocessing, feature engineering, model training, and evaluation. Each stage should be defined as a separate Pachyderm pipeline.

Step 4: Configure pipeline transformations

For each pipeline stage, specify the transformations or operations that need to be applied to your data. This can include cleaning data, applying machine learning algorithms, or generating visualizations.

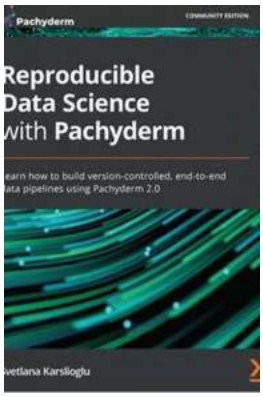
Step 5: Connect pipeline stages

Connect the different pipeline stages together to create an end-to-end data flow. Pachyderm provides a simple way to define dependencies between stages, ensuring that the process runs smoothly.

Step 6: Run and monitor your pipeline

Once your pipeline is configured, you can start running it and monitoring the execution. Pachyderm provides a dashboard that gives you real-time insights into the progress of your pipeline, enabling you to identify and resolve any issues quickly.

Building version controlled end-to-end data pipelines is essential for any organization dealing with large-scale data and complex workflows. Pachyderm offers a comprehensive solution that combines data versioning, reproducibility, scalability, data lineage, and collaboration in a single platform. By following the steps mentioned above, you can leverage the power of Pachyderm to build robust and efficient data pipelines. Start using Pachyderm today and take your data engineering and machine learning projects to the next level!



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Create scalable and reliable data pipelines easily with Pachyderm

Key Features

- Learn how to build an enterprise-level reproducible data science platform with Pachyderm

- Deploy Pachyderm on cloud platforms such as AWS EKS, Google Kubernetes Engine, and Microsoft Azure Kubernetes Service
- Integrate Pachyderm with other data science tools, such as Pachyderm Notebooks

Book Description

Pachyderm is an open source project that enables data scientists to run reproducible data pipelines and scale them to an enterprise level. This book will teach you how to implement Pachyderm to create collaborative data science workflows and reproduce your ML experiments at scale.

You'll begin your journey by exploring the importance of data reproducibility and comparing different data science platforms. Next, you'll explore how Pachyderm fits into the picture and its significance, followed by learning how to install Pachyderm locally on your computer or a cloud platform of your choice. You'll then discover the architectural components and Pachyderm's main pipeline principles and concepts. The book demonstrates how to use Pachyderm components to create your first data pipeline and advances to cover common operations involving data, such as uploading data to and from Pachyderm to create more complex pipelines. Based on what you've learned, you'll develop an end-to-end ML workflow, before trying out the hyperparameter tuning technique and the different supported Pachyderm language clients. Finally, you'll learn how to use a SaaS version of Pachyderm with Pachyderm Notebooks.

By the end of this book, you will learn all aspects of running your data pipelines in Pachyderm and manage them on a day-to-day basis.

What you will learn

- Understand the importance of reproducible data science for enterprise

- Explore the basics of Pachyderm, such as commits and branches
- Upload data to and from Pachyderm
- Implement common pipeline operations in Pachyderm
- Create a real-life example of hyperparameter tuning in Pachyderm
- Combine Pachyderm with Pachyderm language clients in Python and Go

Who this book is for

This book is for new as well as experienced data scientists and machine learning engineers who want to build scalable infrastructures for their data science projects. Basic knowledge of Python programming and Kubernetes will be beneficial. Familiarity with Golang will be helpful.

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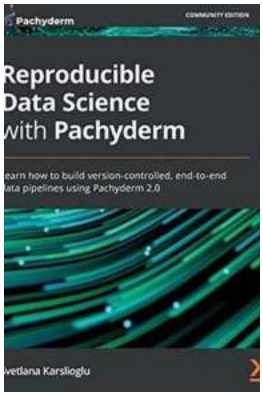

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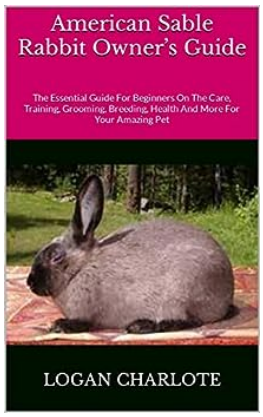

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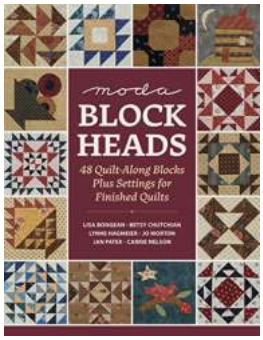

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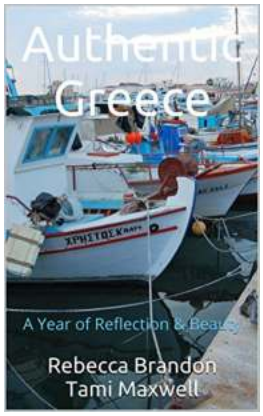

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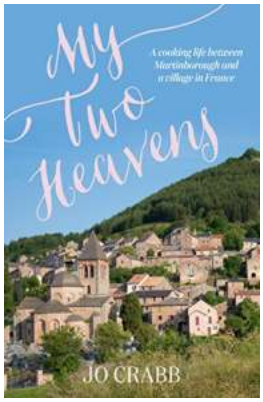

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