databricks

Kristin Dahl, Senior Solution Engineer

September 15, 2021

Databricks SQL: Public Preview Available!

We are pleased to announce that Databricks SQL is now available to all Databricks customers using **premium** and **enterprise** workspaces without the need to request access.

Databricks SQL allows users to operate a multi-cloud lakehouse architecture that provides data warehousing performance at data lake economics with up to 6x better price/performance than traditional cloud data warehouses. This enables you to not only simplify your architecture, but also perform BI directly on the freshest and most complete data.

For more information, please visit https://databricks.com/product/sql-analytics

New Blog Series: Databricks SQL

Databricks is launching a new blog series on performance improvements and enhancements in Databricks SQL

https://databricks.com/blog/2021/09/08/new-performance-improvements-in-databricks-sql.html

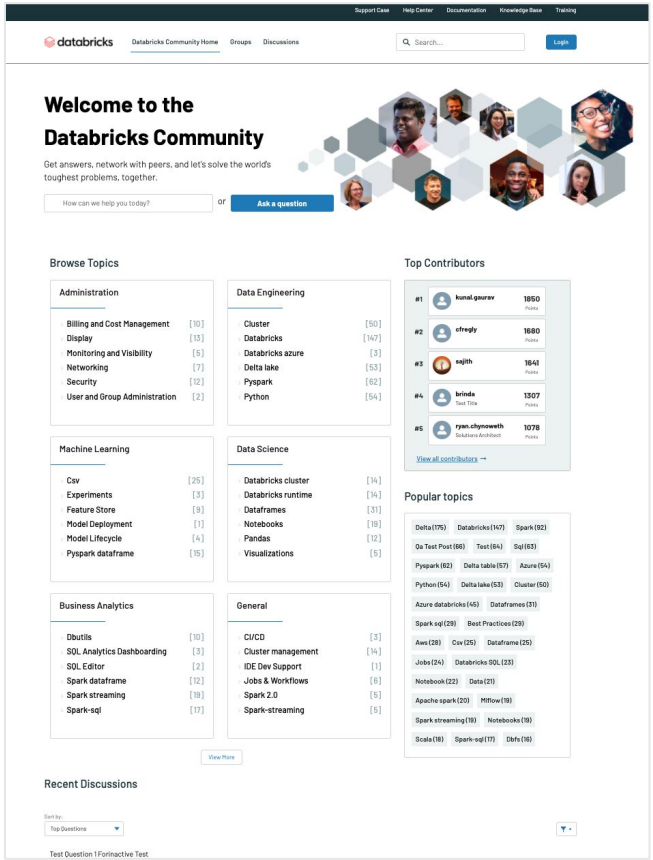
New Performance Improvements in Databricks SQL

by Reynold Xin, Can Efeoglu, Cyrielle Simeone and Bilal Aslam
September 8, 2021

Originally announced at Data + AI Summit 2020 Europe, Databricks SQL lets you operate a multi-cloud lakehouse architecture that provides data warehousing performance at data lake economics. Our vision is to give data analysts a simple yet delightful tool for obtaining and sharing insights from their lakehouse using a purpose-built SQL UI and world-class support for popular BI tools.

This blog is the first of a series on Databricks SQL that aims at covering the innovations we constantly bring to achieve this vision: performance, ease of use and governance. This blog will cover recent performance optimizations as part of Databricks SQL for:

Databricks Community (community.databricks.com)



Now live!

- Strong **cross-functional participation** across Databricks means expert advice available at scale
- **Federated search** across Documentation, Knowledge Base, Community posts + Academy (coming on roadmap!)
- Seamless account provisioning from workspaces, starting for AWS
- **Organized Topics** by use cases and features with participation from Databricks SMEs, partners and savvy practitioners
- Gamified Top Contributors to **celebrate and motivate** participation with exportable badges and recognitions (coming on roadmap!)
- Public and private **Groups with peers** for related conversations and deeper relationships
- Other than in private groups, all content will be public and indexed in search engines to **improvement discoverable for users**

Meet the Presenter

Kristin Dahl
Senior Solution Engineer
kristin@databricks.com

IBM

LOCKHEED MARTIN

MIT LINCOLN LABORATORY

Agenda

1. Lakehouse Design
2. Delta Streaming Pipeline
3. SQL Analytics

Let's summarize our data challenges

With traditional Data Warehouses and Data Lakes we still lack:

- Reliability (lack of ACID, pipeline fragmentation for batch + stream)
- Performance (small files problem, object store limitations, etc.)
- Support for Data Science, Machine Learning & BI under one roof
- Openness (vs proprietary software and tooling)

Evolution of Data Management

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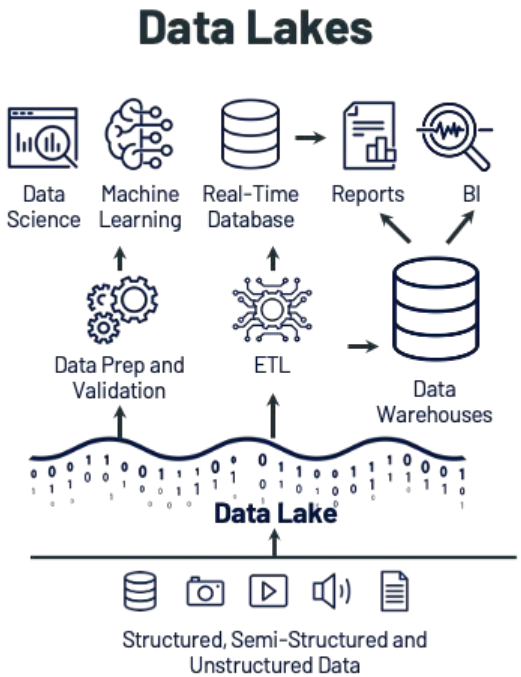
purpose-built for BI and reporting, however...

- No support for video, audio, text
- No support for data science, ML
- Limited support for streaming
- Closed & proprietary formats

Therefore, most data is stored in data lakes & blob stores

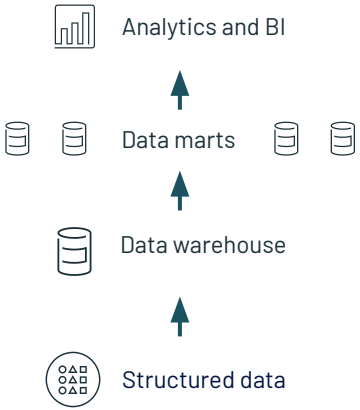
could handle all your data for data science and ML, however…



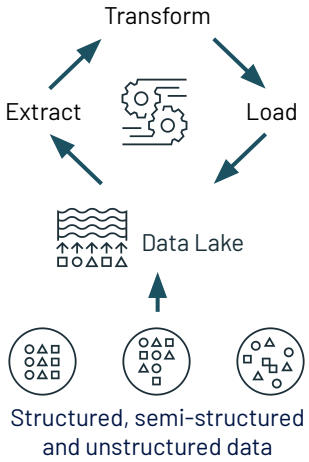
- Poor BI support
- Complex to set up
- Poor performance
- Unreliable data swamps

Today, most enterprises struggle with data

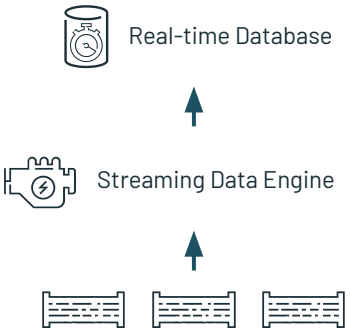
Data Warehousing



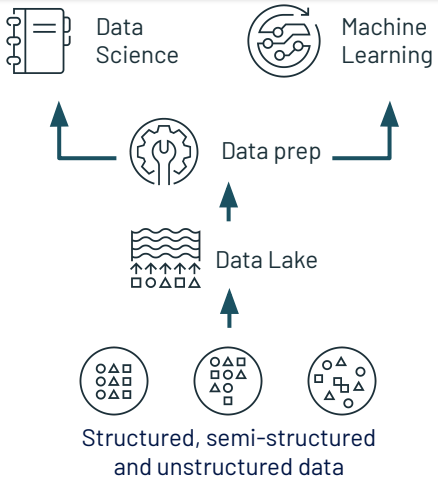
Data Engineering



Streaming

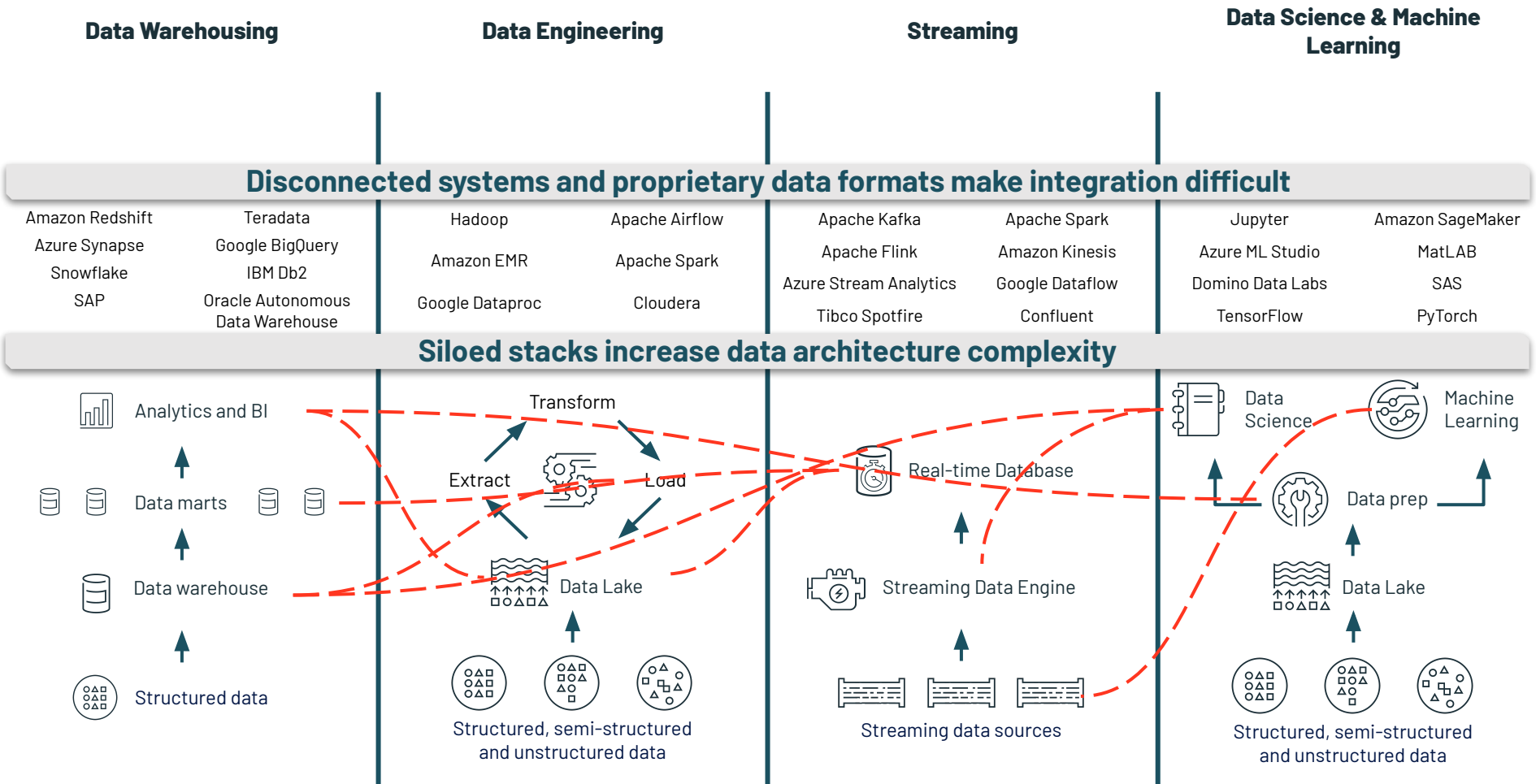


Data Science & Machine Learning



Siloed stacks increase data architecture complexity

Today, most enterprises struggle with data



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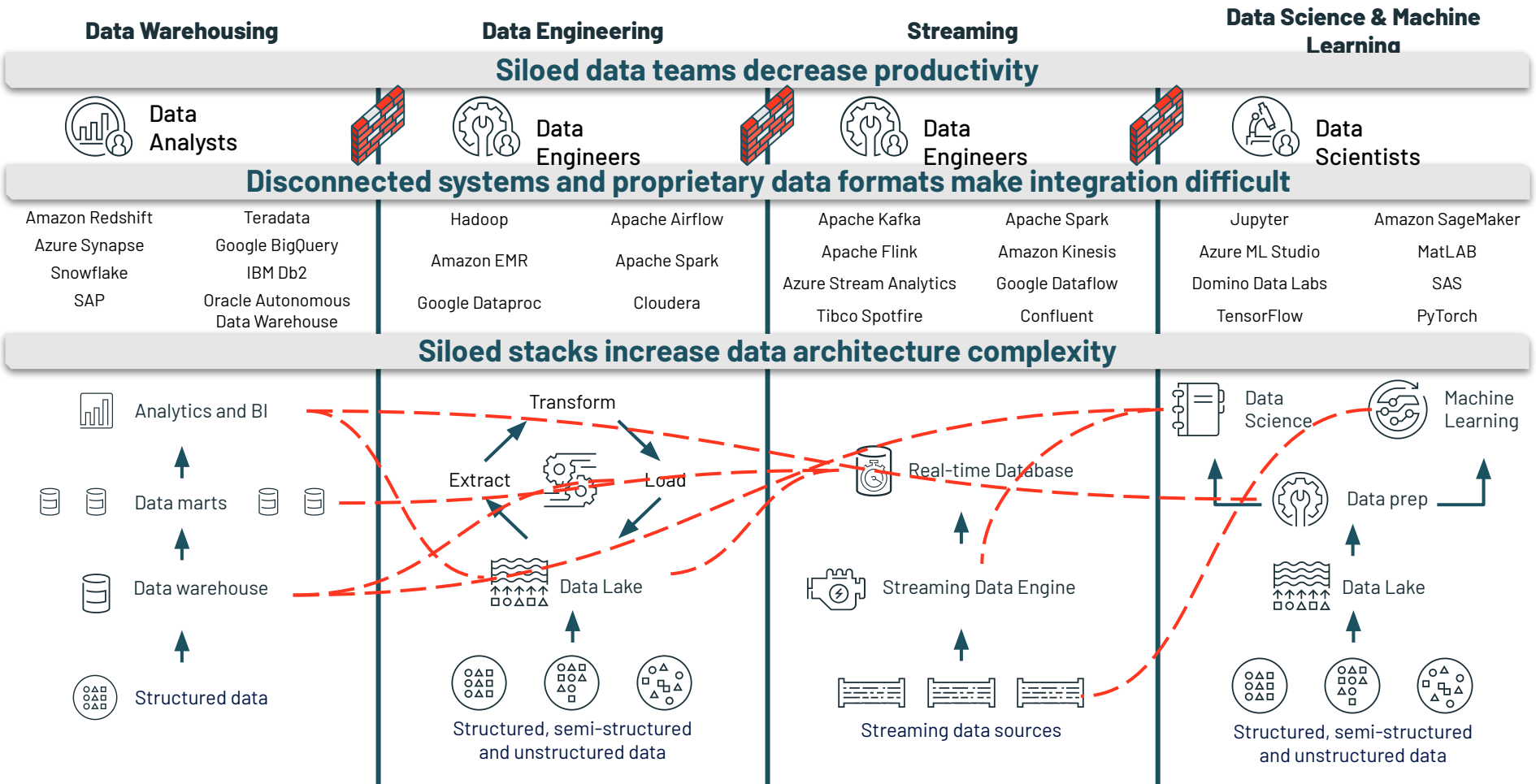
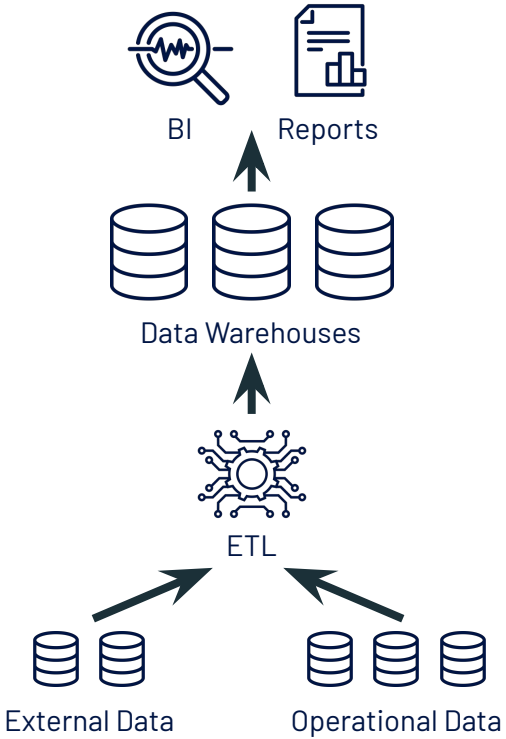
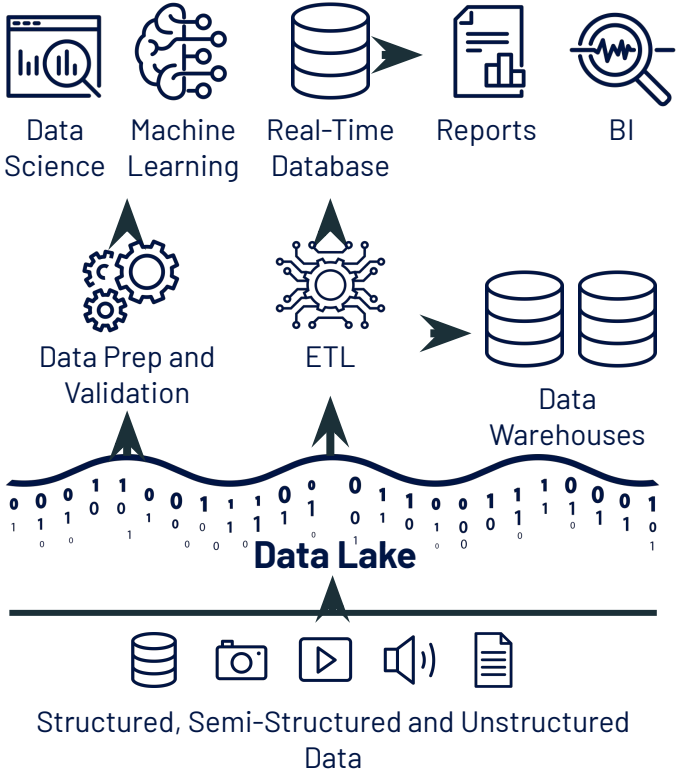


Coexistence is not a desirable strategy





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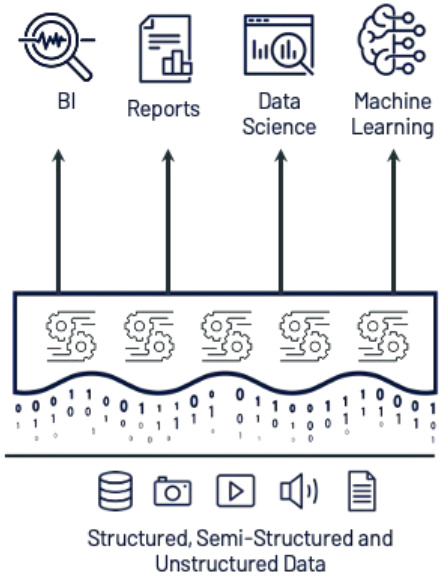
Data Warehouse

Data Lakes

Lakehouse



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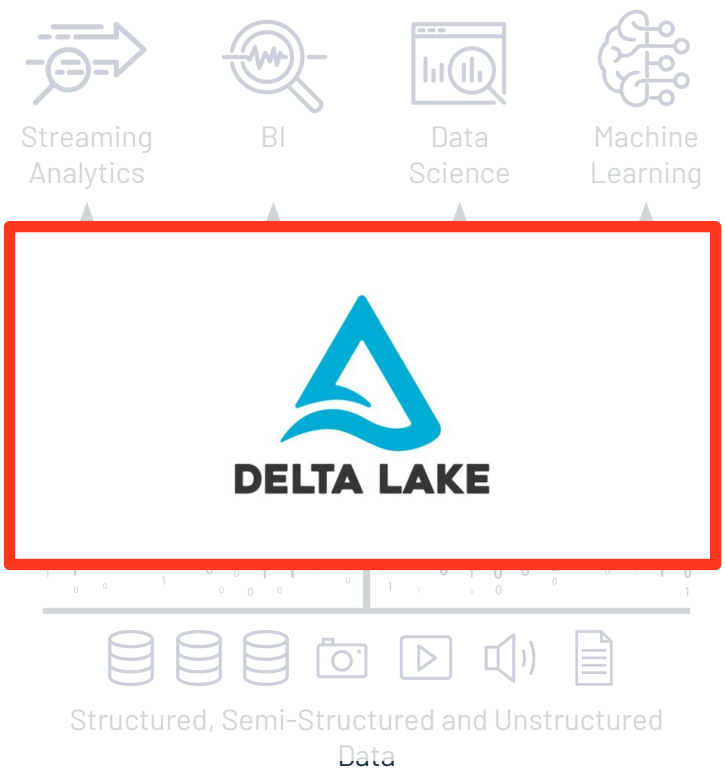
Lakehouse



One platform for every use case

Structured transactional layer

Data Lake for all your data

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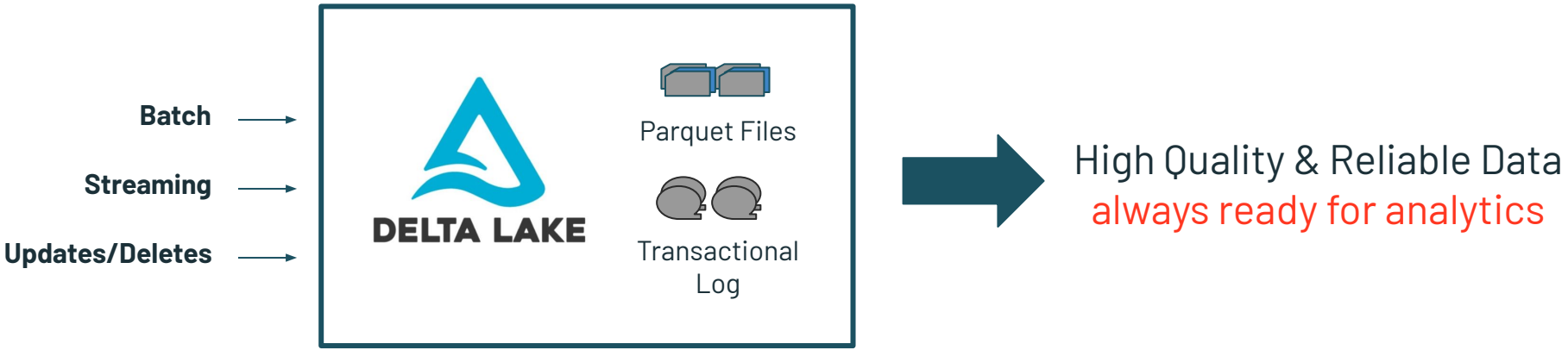
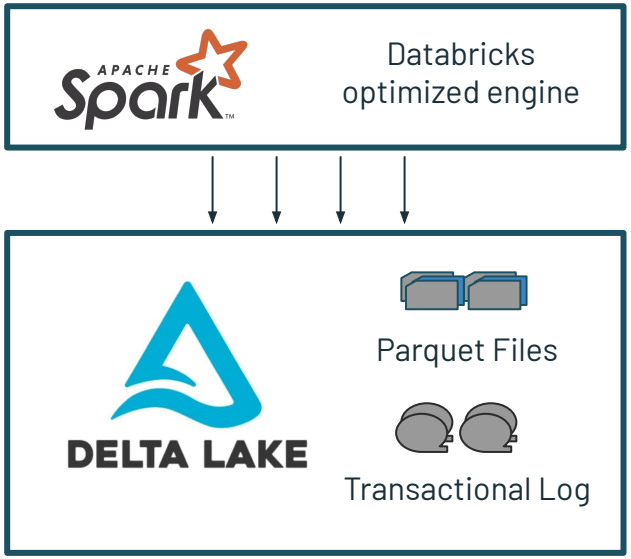
Delta Lake ensures data reliability



Key Features

- ACID Transactions
- Schema Enforcement
- Unified Batch & Streaming
- Time Travel/Data Snapshots

Delta Lake optimizes performance



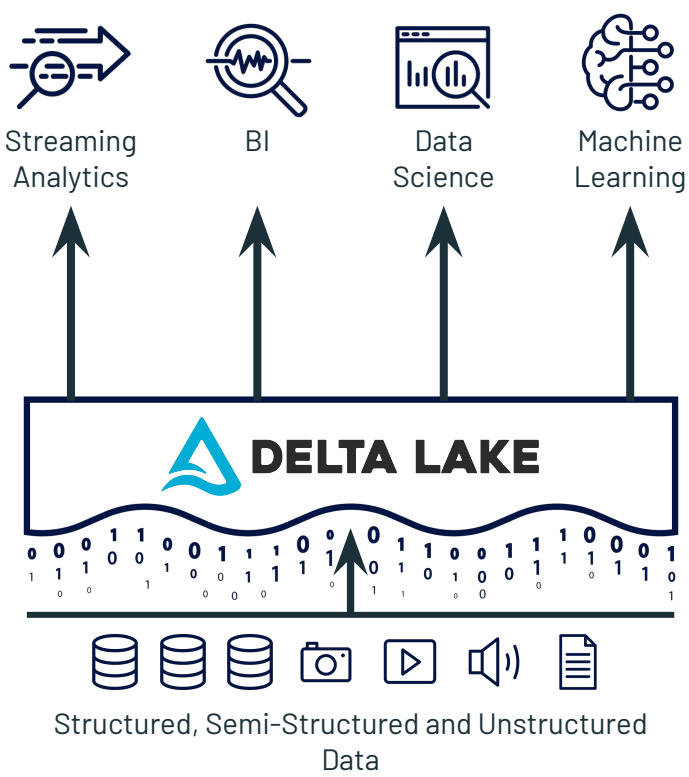
Highly Performant queries at scale

Automatically managed through databricks

Key Features

- Indexing
- Compaction
- Data skipping
- Caching

Lakehouse



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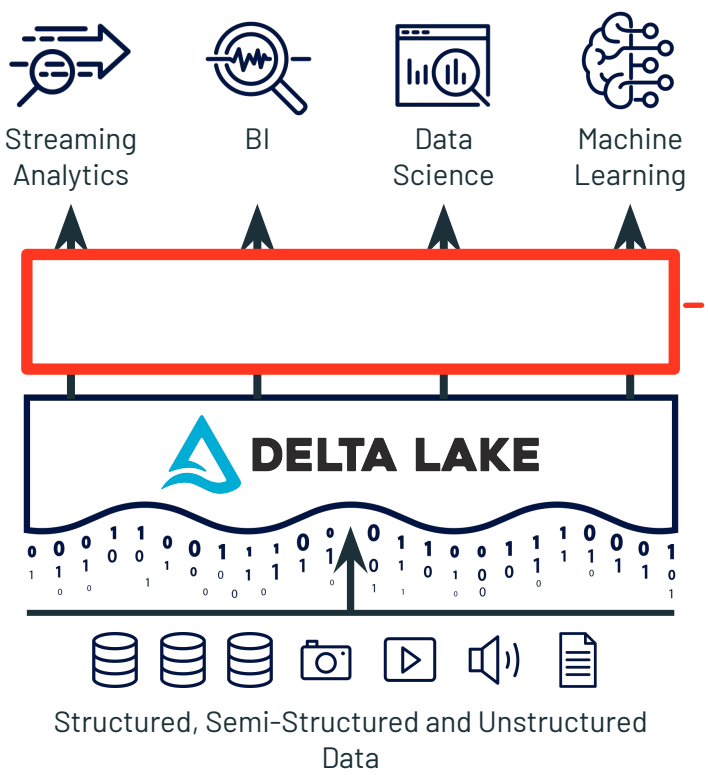


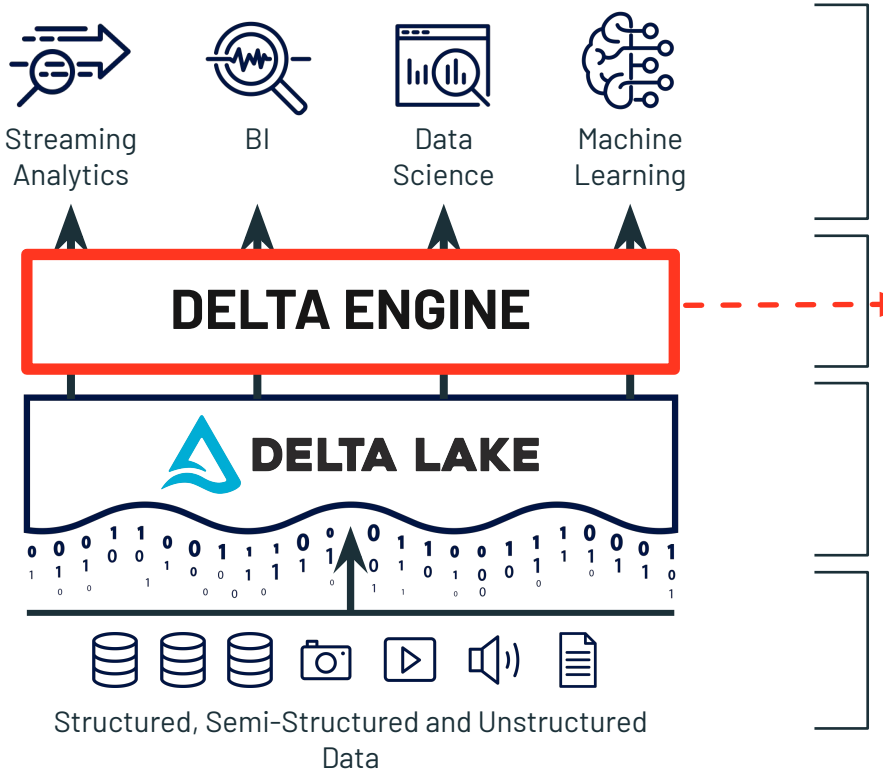
One platform for every use case

High performance query engine

Structured transactional layer

Data Lake for all your data

Lakehouse with Databricks



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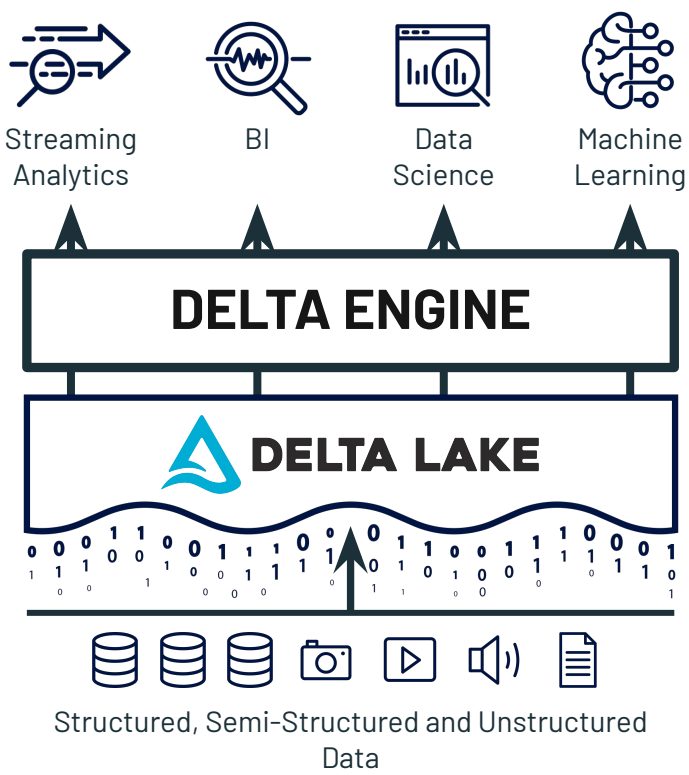
Lakehouse with Databricks



One platform for every use case

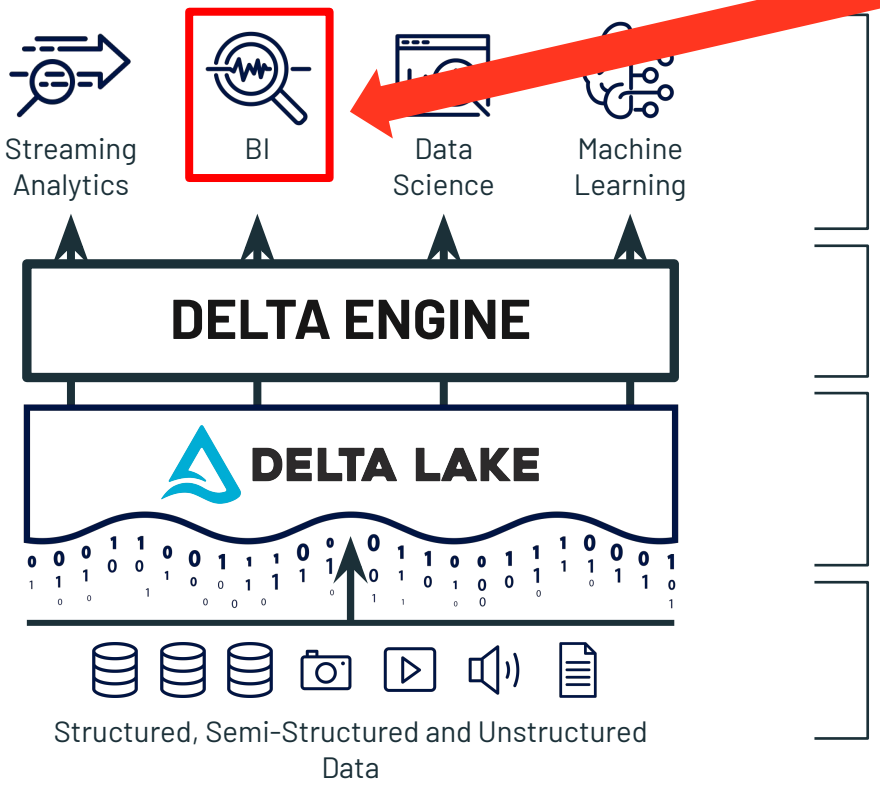
High performance query engine

Structured transactional layer

Data Lake for all your data

Lakehouse with Databricks

In this session, we are going to focus on SQL Analytics.



One platform for every use case

High performance query engine

Structured transactional layer

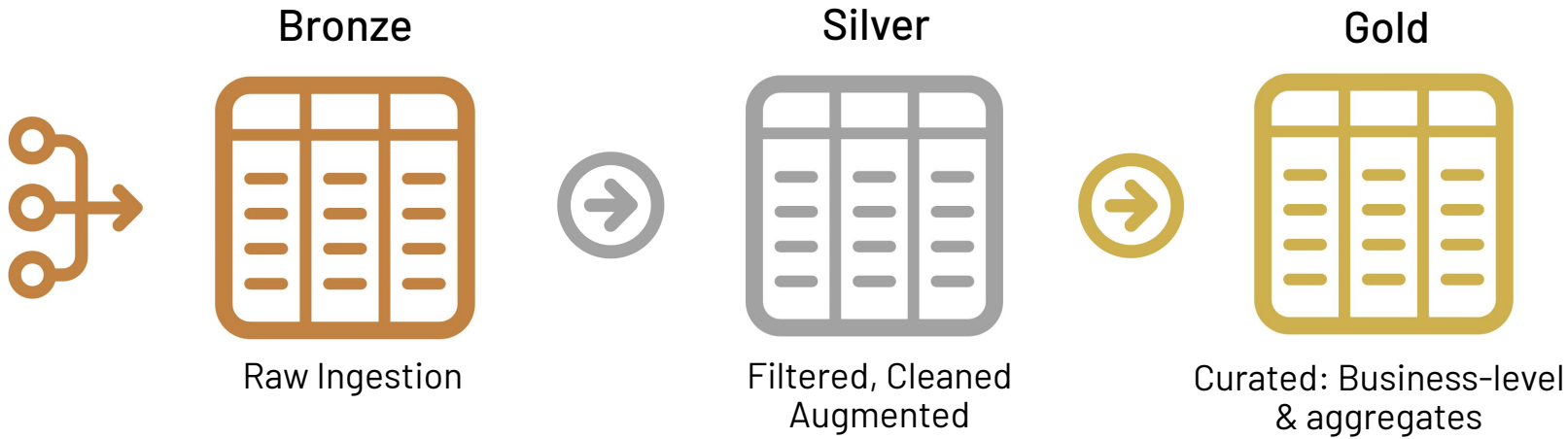
Data Lake for all your data

What is your architecture today?

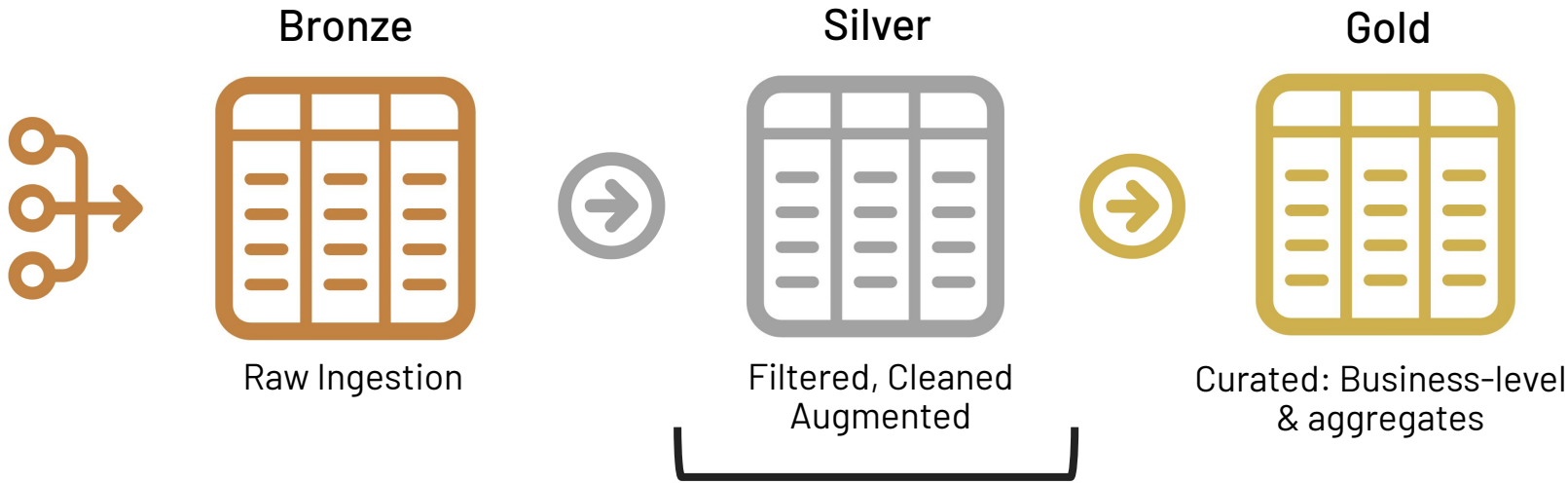
- Data warehouse centric
- Data lake centric
- Lakehouse centric
- N/A

How do I get started?
What do other folks do?

A few different approaches



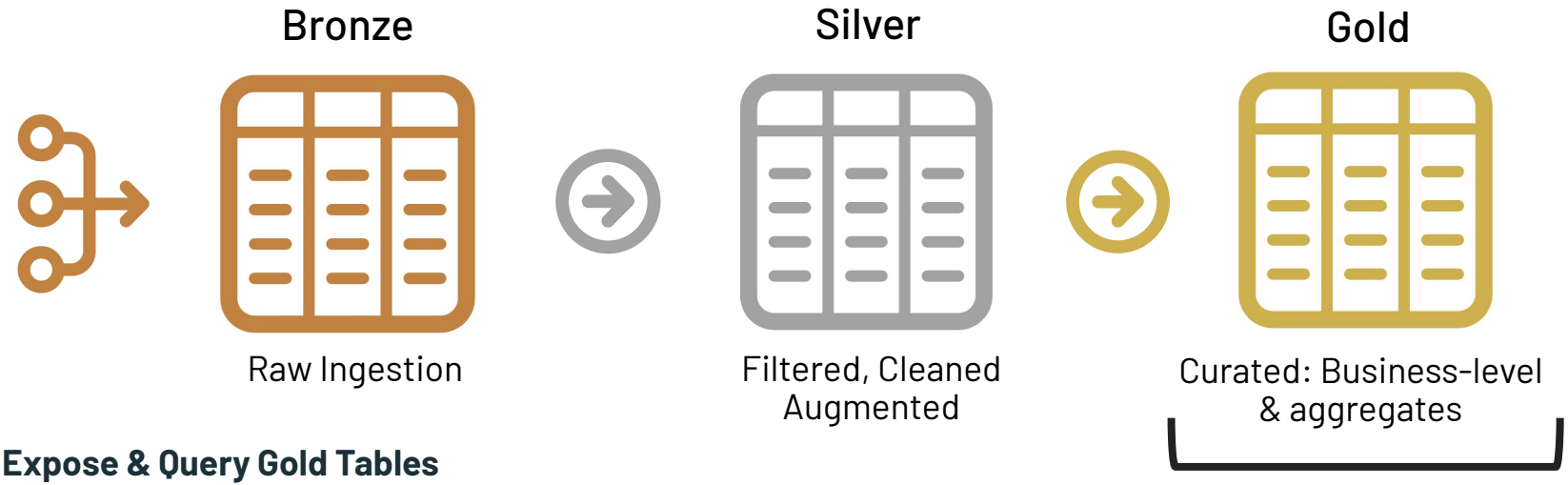
A few different approaches



Expose & Query Intermediate Tables

- Data engineering or "analytics engineering" does *some* curation.
- Users are usually a more advanced and are comfortable with SQL. So, they may create their own assets for reporting / BI, like aggregated or denormalized tables in a self-service manner.
- Provides high agility + opens up most of the data lake to users.

A few different approaches



Expose & Query Gold Tables

- Data engineering or "analytics engineering" curates & provides access to curated / gold level tables to the rest of the organization.
- Usually follows best-practices with proper modeling. (e.g. Kimball, denormalized reporting or mixed)
- Works well for less-technical users, as well as serving external users (e.g. companies selling data / insights)
- In this model, end-users typically do less self-service / "last-mile" ETL and rather rely on curated assets.

Product Lenses

A simpler, more contextual user experience for different types of users on Databricks via product

Workspace
Data science and engineering

SQL Analytics
SQL editor and dashboarding

Built on Redash!

Delta & SQL Analytics - Lab Prep

Start your clusters now!

How to Import a Notebook

Notebook Link

SQLA Documentation

New JSON SQL Operators

Persona QuickStarts

Billable Usage Delivery

Audit Log Delivery

OverWatch

If you have any questions or need assistance getting features turned on please contact the SA's giving this workshop

We're Hiring Solution Architects

If you or someone in your network is interested,
we have East and West coast positions available.

Email ericka.styles@databricks.com with your resume or LinkedIn.
You can ask your presenters for more information.

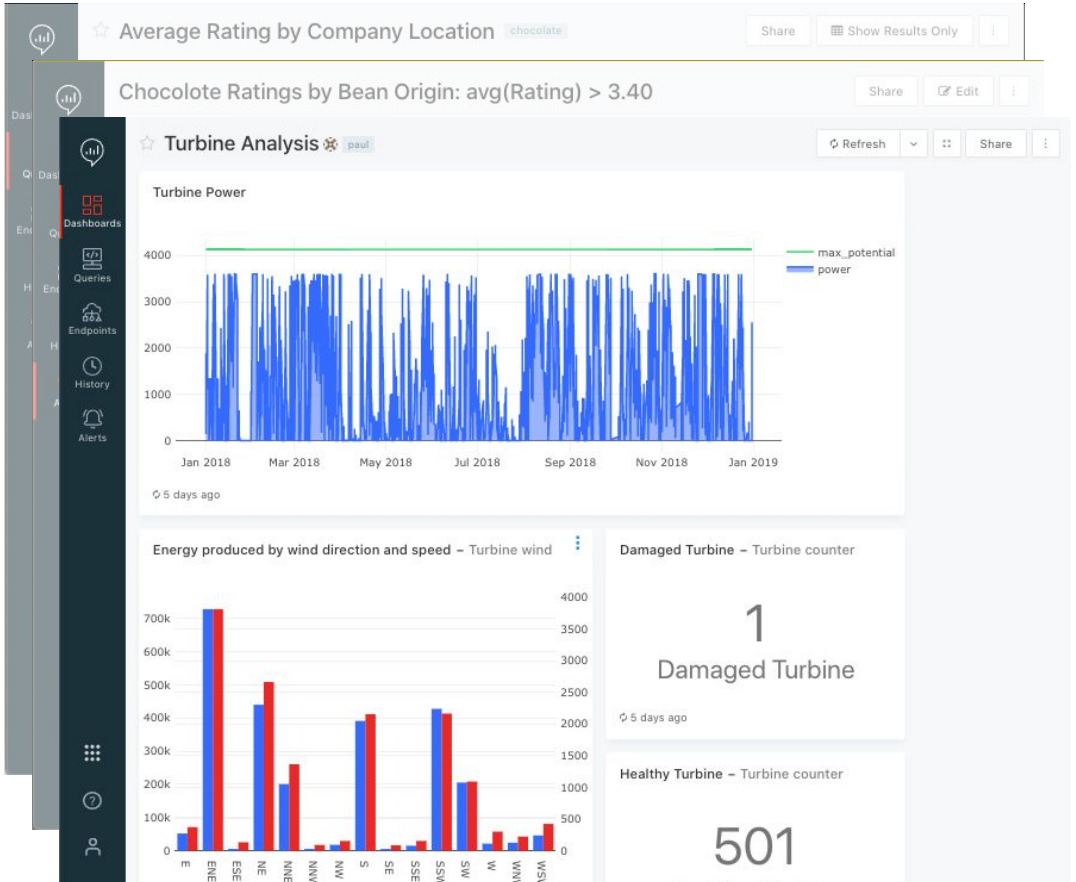
databricks.com/company/careers

Looking for applicants with backgrounds in any of these skills:
data engineering, machine learning, **or** analytics.

Also hiring in Europe and Asia.

SQL-native user interface for analysts

- Familiar SQL Editor
  - Auto Complete
  - Built in visualizations
  - Data Browser
- Automatic Alerts
  - Trigger based upon values
  - Email or Slack integration
- Dashboards
  - Simply convert queries to dashboards
  - Share with Access Control



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