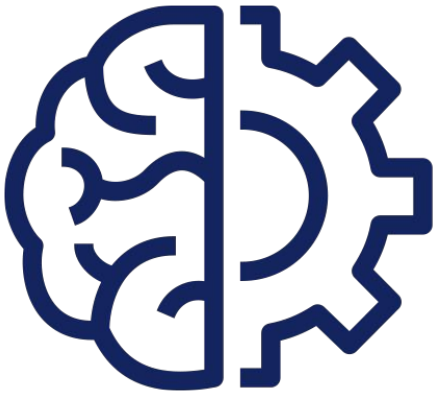

VIENNA DATA SCIENCE TOOLS

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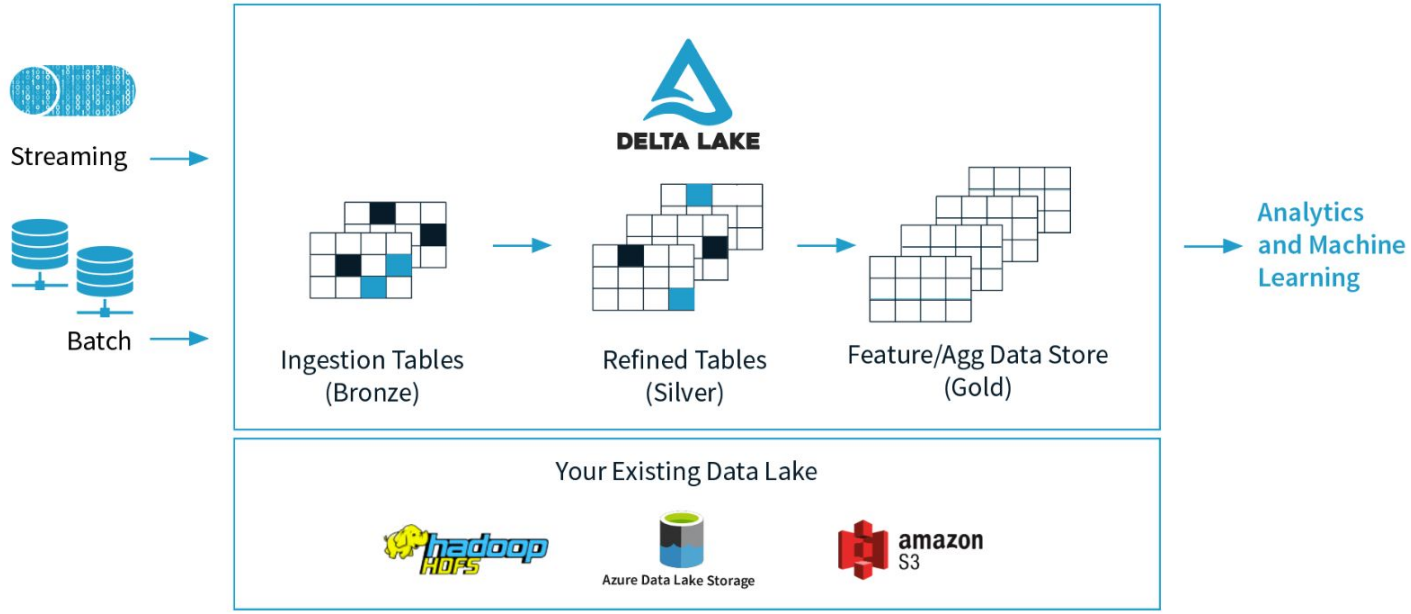
https://delta.io/

In a Nutshell

- Open source DWH-like solution for Big Data
- Computation: Apache Spark
- Storage: Apache Parquet



- ACID Transactions
- Schema Enforcement & Schema Evolution
- Data Versioning: Time Travel & Audit History
- Unified Batch and Streaming processing

Python Examples

```
df = spark.read.json("/data/events/")
df.write.format("delta").save("/delta/events")

df = DeltaTable.forPath(spark, "/delta/events").toDF()

deltaTable.delete("date < '2017-01-01'")

deltaTable.update(condition = "eventType = 'clck'", set = { "eventType": "'click'" })

deltaTable.alias("events").merge(
    source = updatesDF.alias("updates"),
    condition = "events.eventId = updates.eventId"
  ).whenMatchedUpdate(set =
    {
      "data": "updates.data"
    }
  ).whenNotMatchedInsert(values =
    {
      "date": "updates.date",
      "eventId": "updates.eventId",
      "data": "updates.data"
    }
  ).execute()
```

SQL Examples

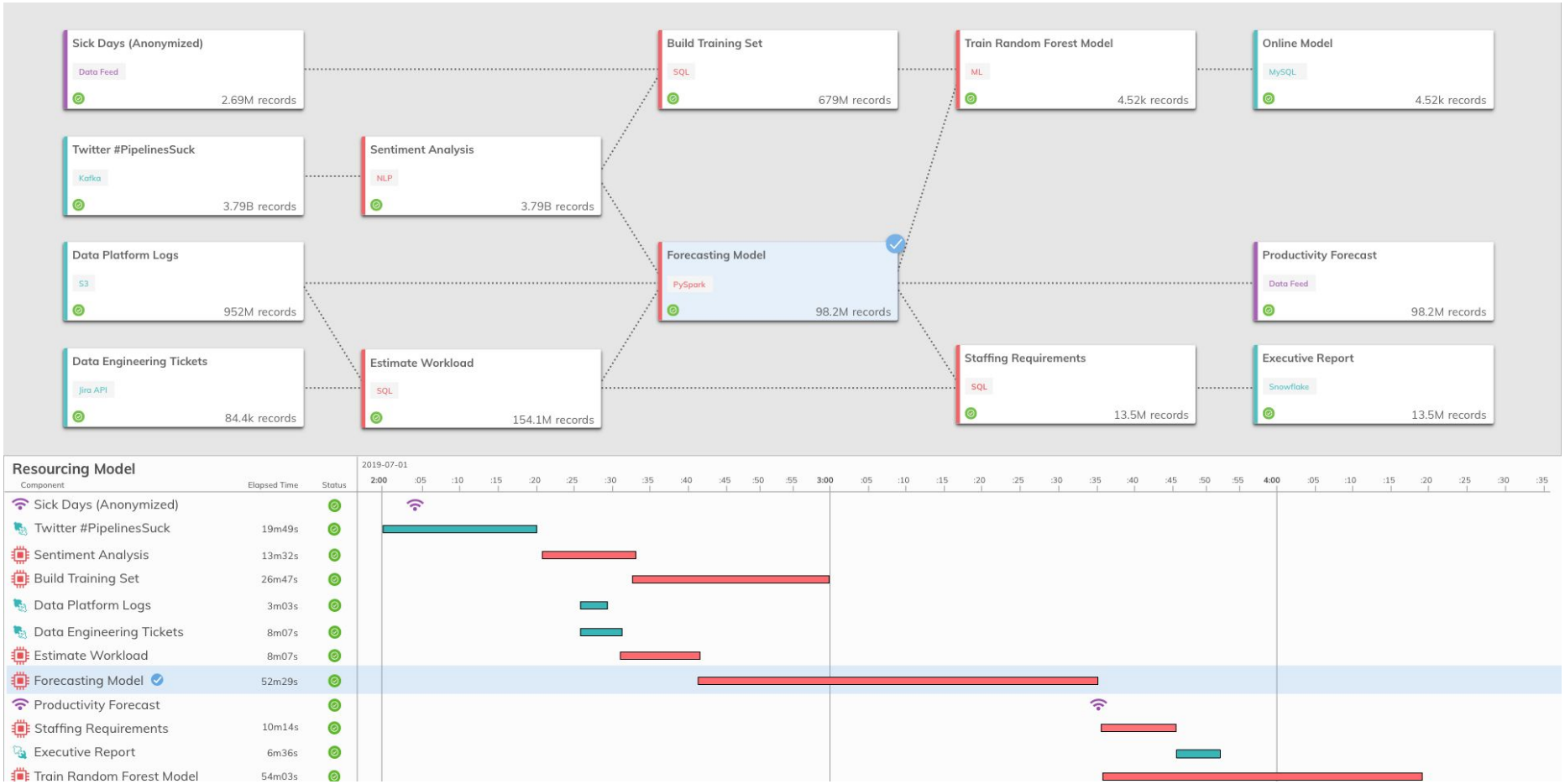
```
CREATE TABLE events
USING delta
AS SELECT *
FROM json.`/data/events/`

DELETE FROM events WHERE date < '2017-01-01'

UPDATE events SET eventType = 'click' WHERE eventType = 'clck'

MERGE INTO events
USING updates
ON events.eventId = updates.eventId
WHEN MATCHED THEN
  UPDATE SET
    events.data = updates.data
WHEN NOT MATCHED
  THEN INSERT (date, eventId, data) VALUES (date, eventId, data)
```

https://www.ascend.io/

In a Nutshell

- SaaS for "Autonomous Data Pipelines"
- Declarative Pipelines
  - Describe pipelines with simple, compact definitions in SQL, YAML or Pyspark.
- Data Plane - Managed Spark
  - Fully managed, containerized Spark on Kubernetes.
- Control Plane - Autonomous
  - Combines **declarative configurations** and **intelligent automation** to manage the underlying cloud infrastructure, dynamically construct pipelines and eliminate maintenance across the entire data lifecycle.
  - Sean Knapp: "Query planner/optimizer for Big Data workflows"
- Structured Data Lake
  - Automatically ensures **data integrity**, tracks **data lineage**, **de-duplicates data**, and **optimizes performance**.
- Multi-Cloud
  - Deploy and run seamlessly across AWS, Azure and Google Cloud Platform.

Data Pipeline Example



Announcements

We're hiring

- Software Architect (f/m)
  https://recruiting.novomatic.com/Vacancies/2071/Description/2
- Data Engineer (f/m)
  https://bit.ly/2MOzdW1
- Junior Data Engineer (f/m)
  https://bit.ly/2BFbdQ0

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