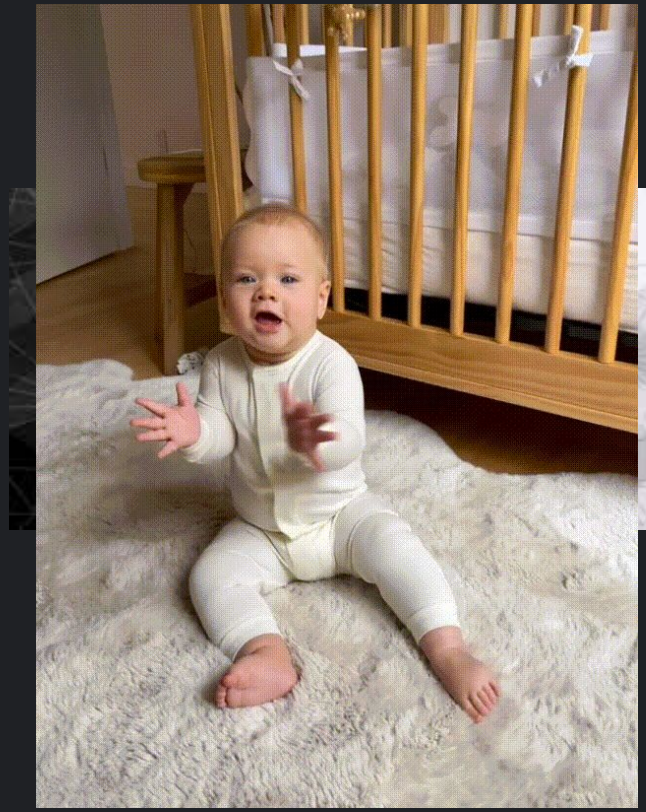


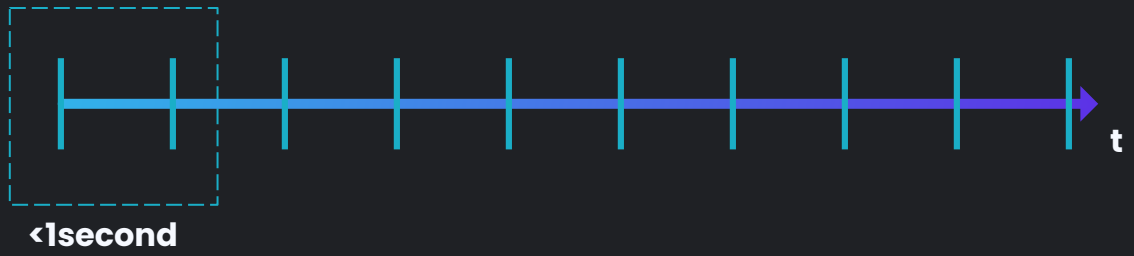
Getting Real(-Time)

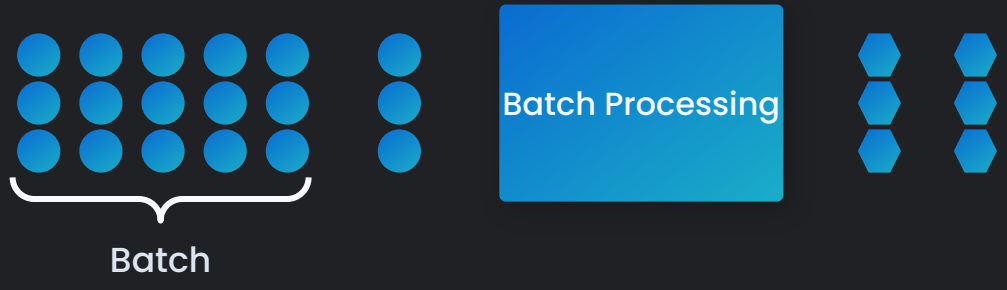
By Zander Matheson
@MathesonZander
CEO/Founder @ bytewax.io

- ➔ Defining Real-Time, Streaming and Batch
- ➔ Real-Time Processing
- ➔ Case Studies
- ➔ Architecture
- ➔ Real-Time Landscape

- **Defining Real-Time, Streaming and Batch**
- Real-Time Processing
- Case Studies
- Architecture
- Real-Time Landscape

What is Real-Time?




Batch Processing
Batch

Stream Processor
Stream

- Defining Real-Time, Streaming and Batch
- **Real-Time Processing**
- Case Studies
- Architecture
- Real-Time Landscape

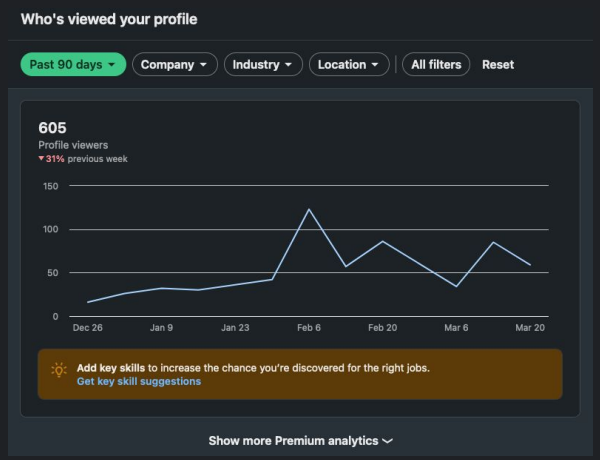
SLV 287R

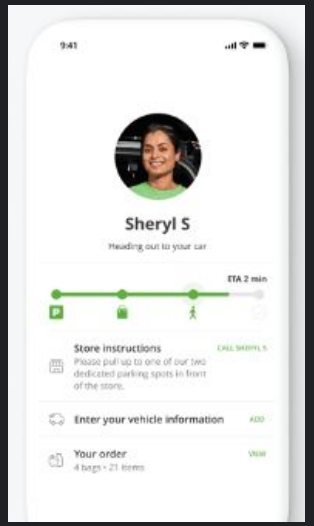
Analytical

Operational

Analytical

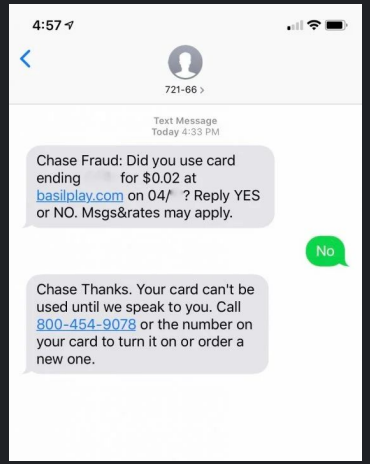
- ☑ Low Latency
- ☑ Freshness
- ☑ Retrieval

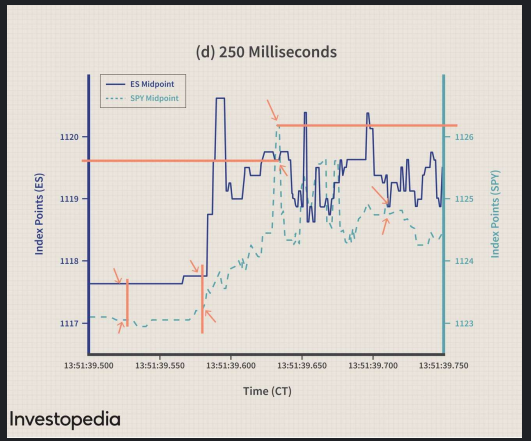


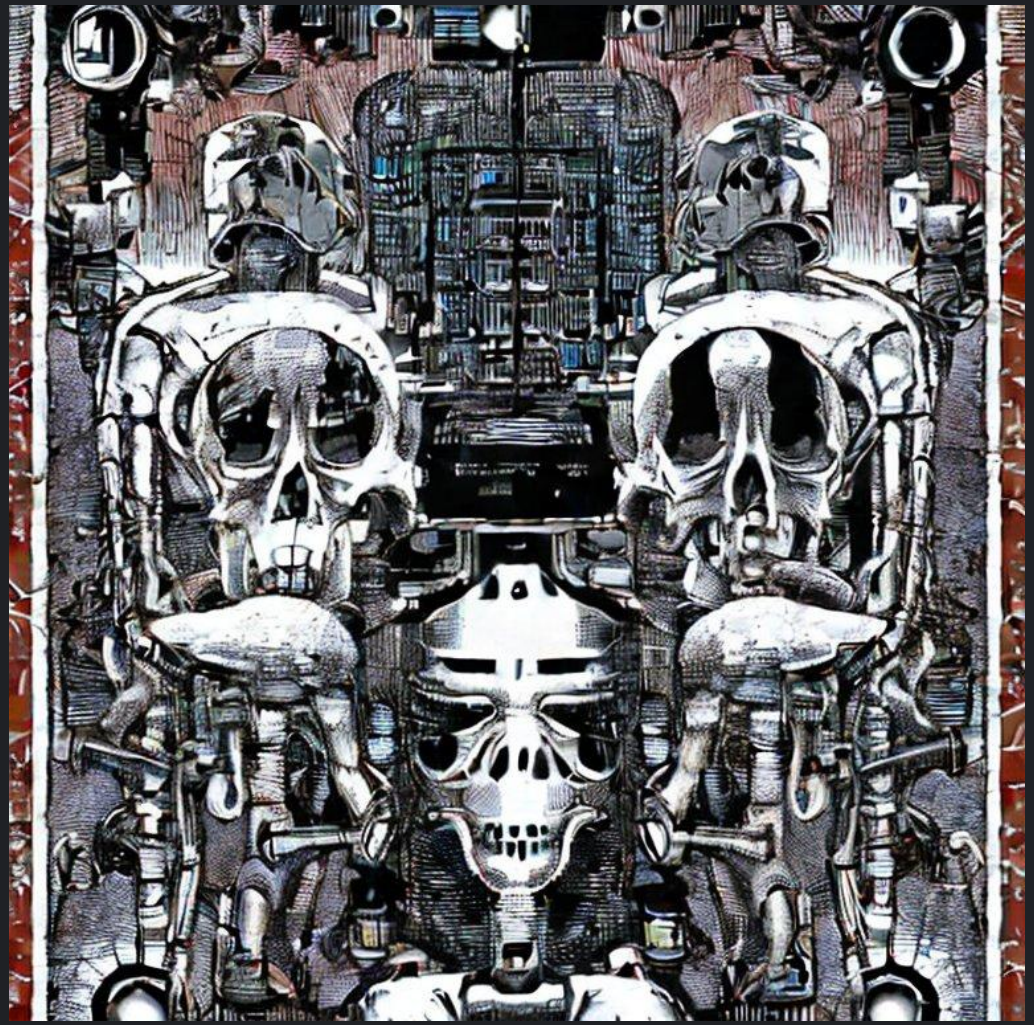


Operational

- ☑ Low Latency
- ☑ Freshness
- ☑ Reactive





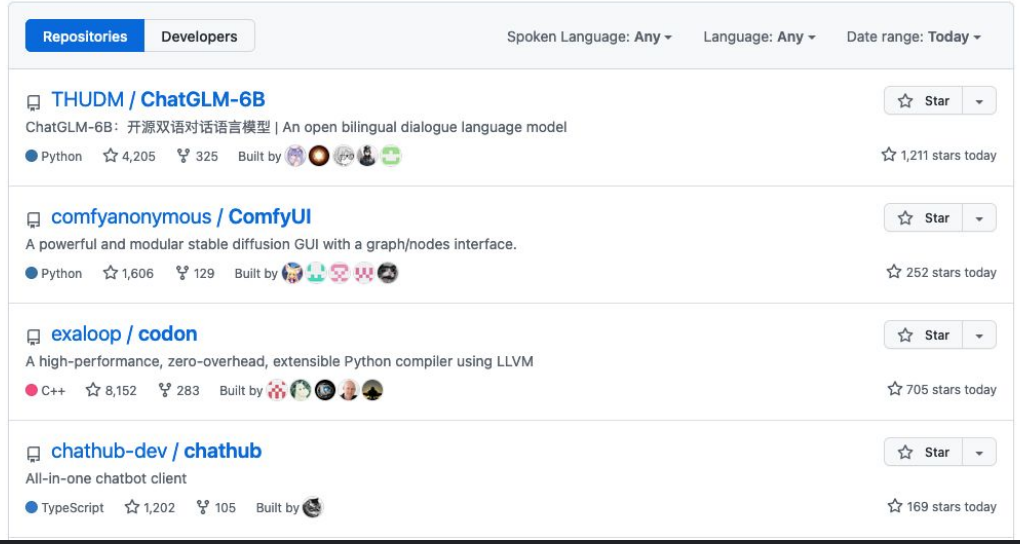


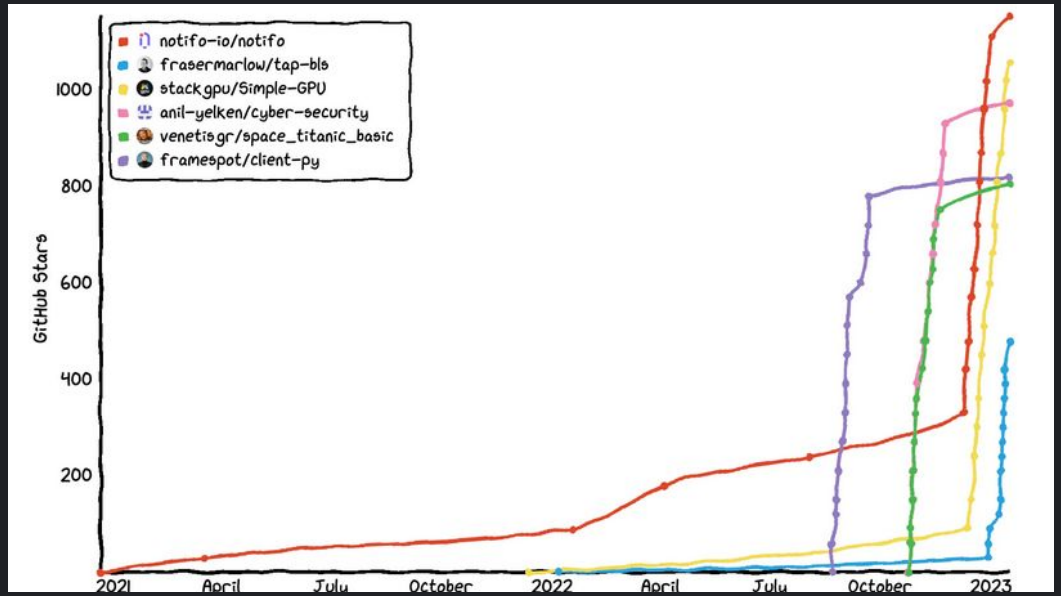
Credit Stable Diffusion

- Defining Real-Time, Streaming and Batch
- Real-Time Processing
- **Comparing Case Studies**
- Architecture
- Real-Time Landscape

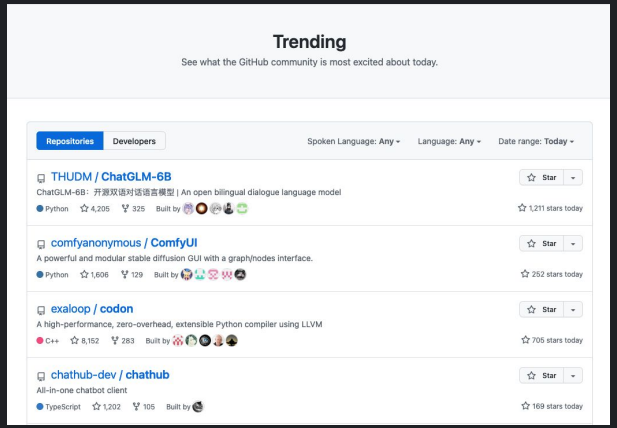
Trending

See what the GitHub community is most excited about today.

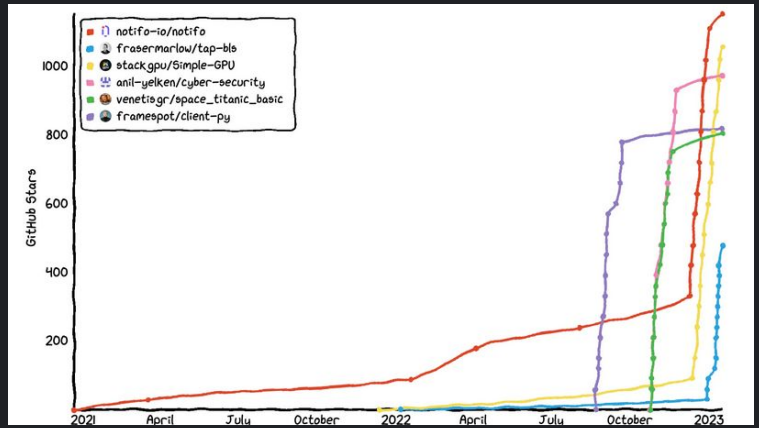


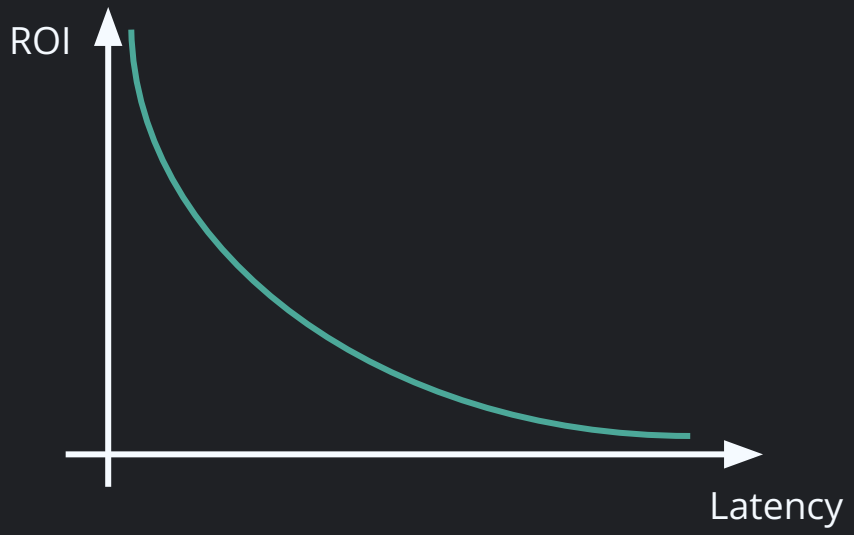

notifo-io/notifo
fraser-marlow/tap-bls
stackgpu/Simple-GPU
anil-yelken/cyber-security
venetisgr/space_titanic_basic
framespot/client-py
GitHub Stars
1000
800
600
400
200
2021
April
July
October
2022
April
July
October
2023

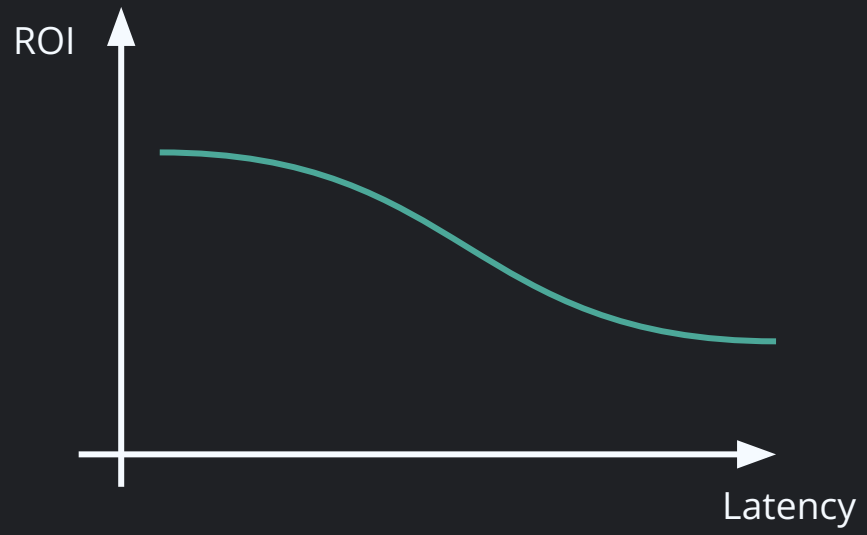
Analytical



Operational

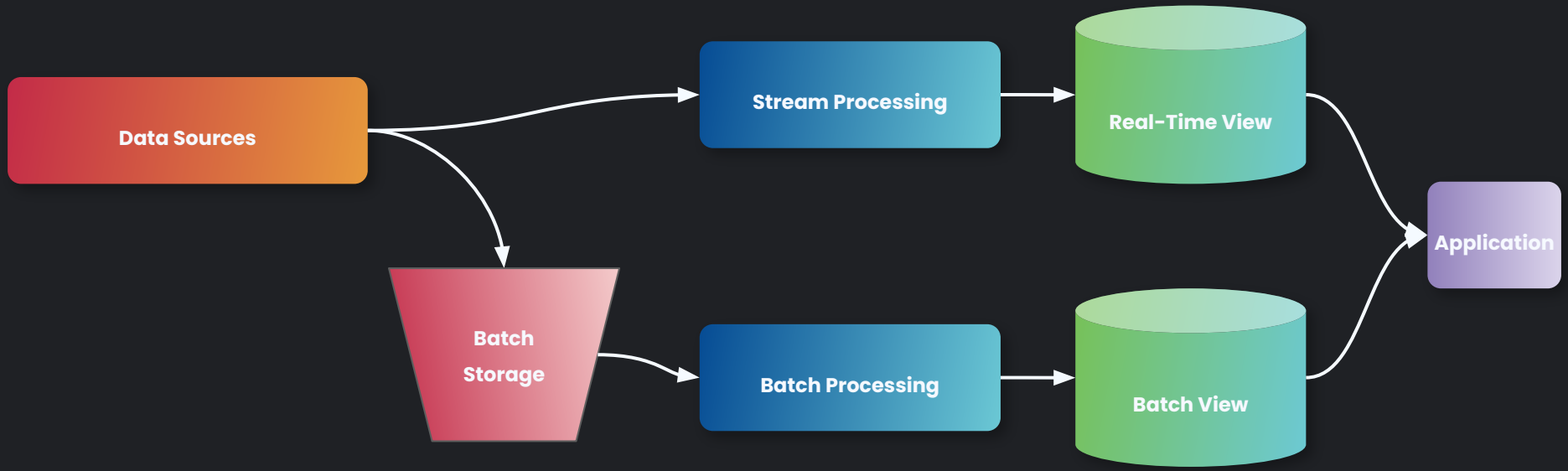



ROI
Latency

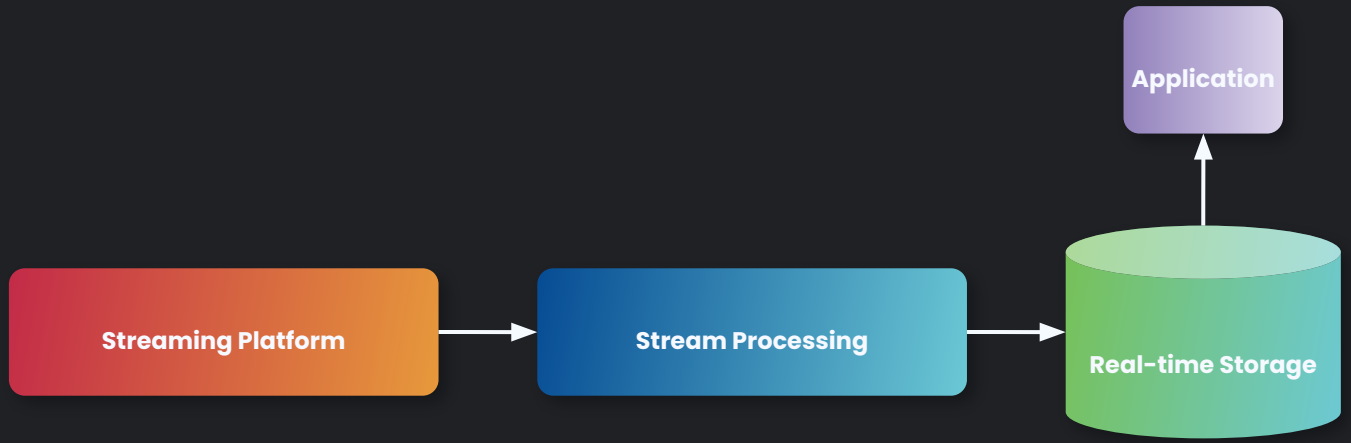

ROI
Latency

- Defining Real-Time, Streaming and Batch
- Real-Time Processing
- Case Studies
- **Architectures**
- Real-Time Landscape

Lambda Architecture

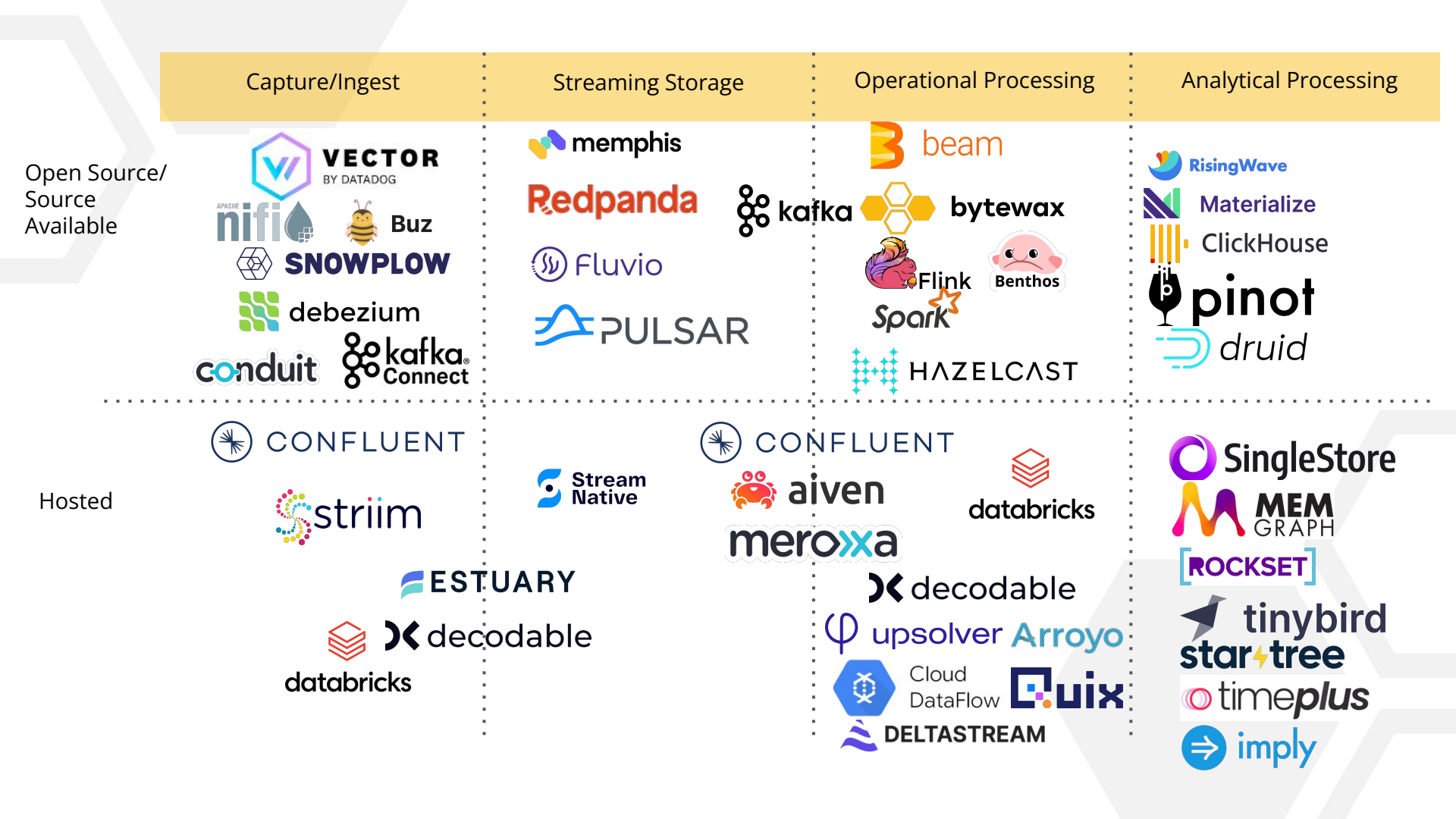


Kappa Architecture



- ➔ Defining Real-Time, Streaming and Batch
- ➔ Real-Time Processing
- ➔ Batch vs. Streaming
- ➔ Case Studies
- ➔ Architecture
- ➔ **Real-Time Landscape**

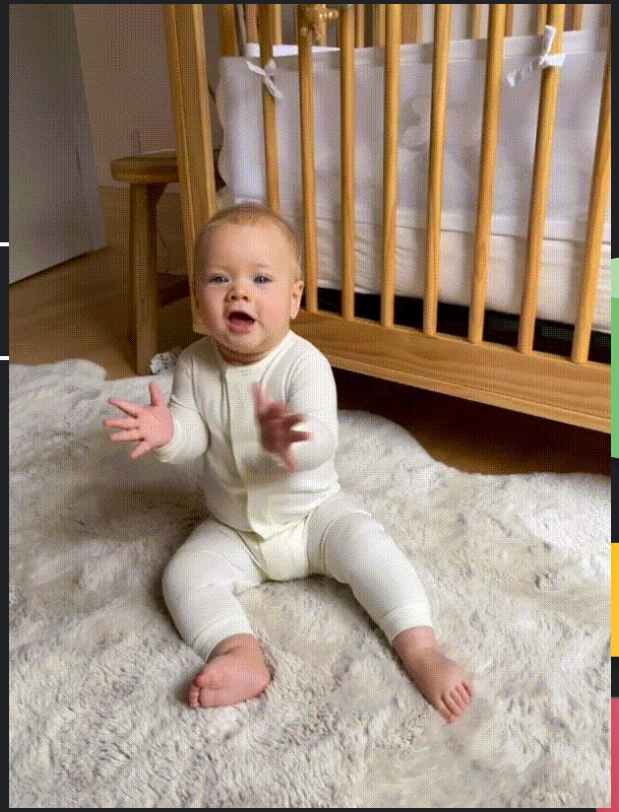
VECTOR
BY DATADOG
nifi
Buz
SNOWPLOW
debezium
conduit
kafka Connect
memphis
Redpanda
Fluvio
PULSAR
kafka
beam
bytewax
Flink
Benthos
Spark
HAZELCAST
RisingWave
Materialize
ClickHouse
pinot
druid
CONFLUENT
striim
Stream Native
CONFLUENT
aiven
meroxa
databricks
SingleStore
MEM GRAPH
ROCKSET
ESTUARY
decodable
databricks
decodable
upsolver
Arroyo
Cloud DataFlow
Quix
DELTASTREAM
tinybird
startree
timeplus
imply


Capture/Ingest
Streaming Storage
Operational Processing
Analytical Processing
Open Source/ Source Available
Hosted
VECTOR BY DATADOG
nifi
Buz
SNOWPLOW
debezium
conduit
kafka Connect
memphis
Redpanda
kafka
Fluvio
PULSAR
beam
bytewax
Flink
Benthos
Spark
HAZELCAST
RisingWave
Materialize
ClickHouse
pinot
druid
CONFLUENT
striim
ESTUARY
decodable
databricks
Stream Native
CONFLUENT
aiven
meroxa
databricks
decodable
upsolver
Arroyo
Cloud DataFlow
Quix
DELTASTREAM
SingleStore
MEM GRAPH
ROCKSET
tinybird
startree
timeplus
imply

	Capture/Ingest	Streaming Storage	Operational Processing	Analytical Processing
Open Source/ Source Available	Buz SNOWPLOW debezium	Redpanda kafka PULSAR	bytewax Flink Spark	RisingWave Materialize ClickHouse pinot druid

- ➔ Defining Real-Time, Streaming and Batch
- ➔ Real-Time Processing
- ➔ Batch vs. Streaming
- ➔ Case Studies
- ➔ Architecture
- ➔ Real-Time Landscape
- ➔ **Bonus Section**

Zaia Architecture



Redpanda

Application

Redis

Duck DB

S3/Minio

bytewax

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