DATASTAX
DEVELOPERS

CASSANDRA SUMMIT
MARCH 13-14, 2023 • SAN JOSE, CA

TRAINING DAY

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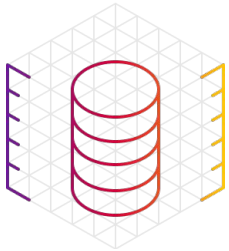
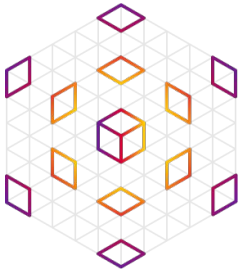
MARCH 13-14, 2023 • SAN JOSE, CA

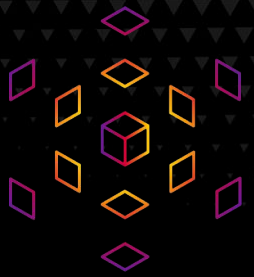
APACHE CASSANDRA® FOR ARCHITECTS AND DATA ENGINEERS:

1 - Solution Architecture



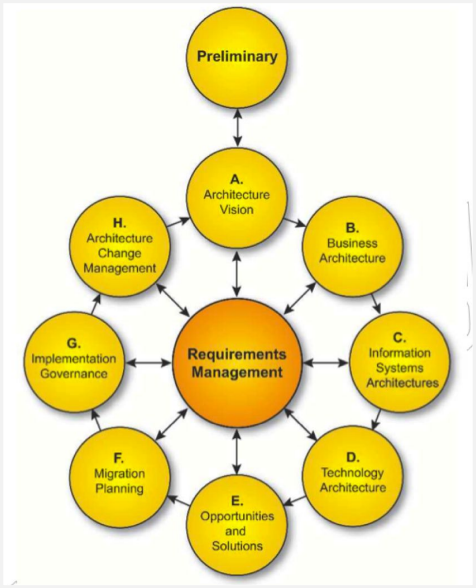
❯ DEMO



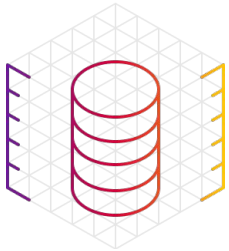


#1
Business Architecture

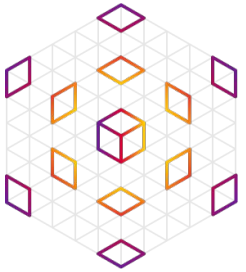
Architecture “Vision”



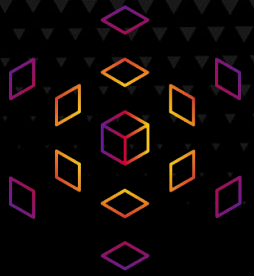
DEMO OF WHAT WE TRY TO ACHIEVE



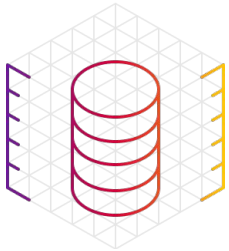
Business Architecture



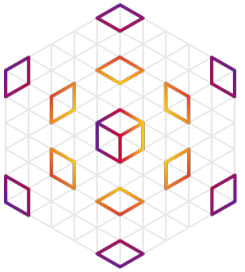
Functions and user flow

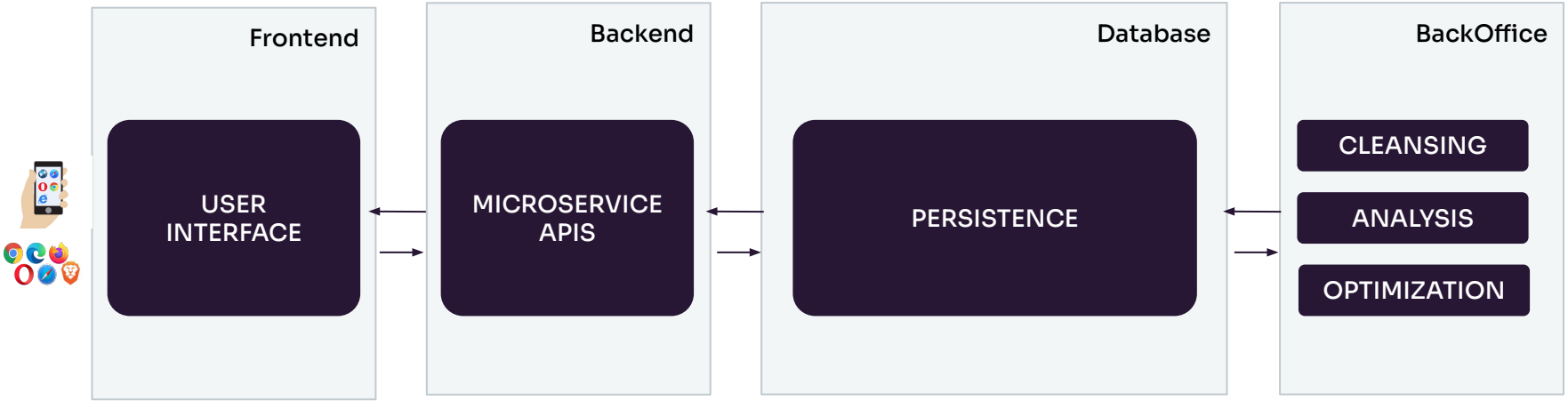


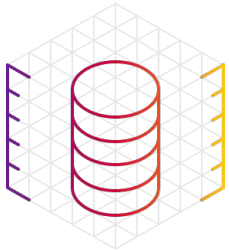
#2
Logical Architecture



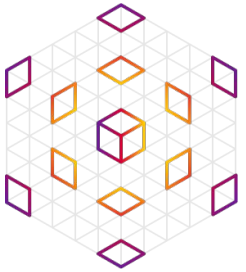
3-tier System of records

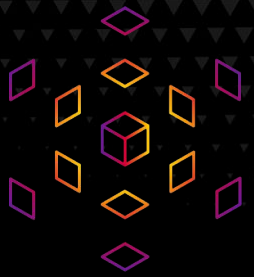






❯ Back Office, Realtime data analysis





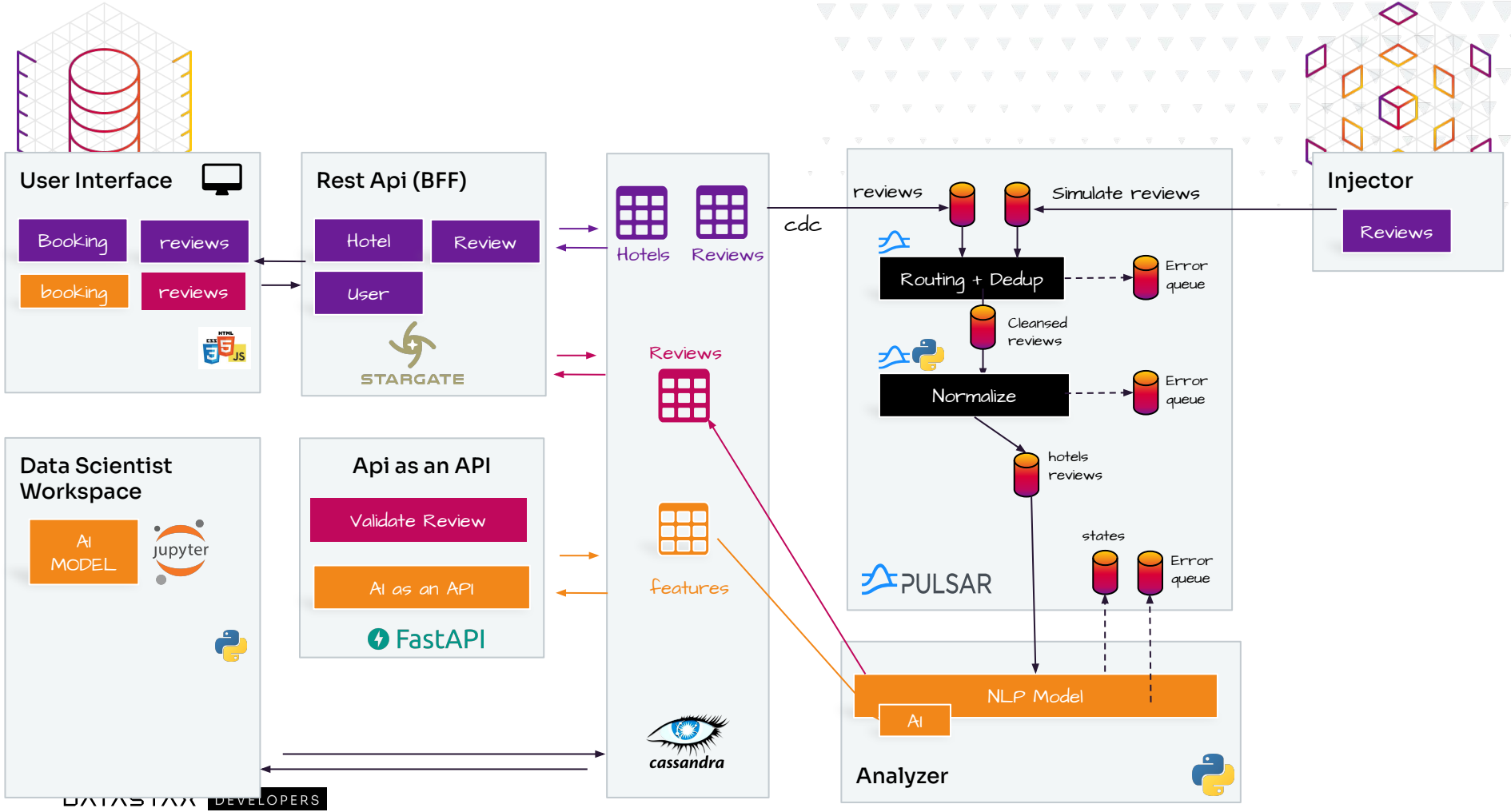
#3
Technical Architecture

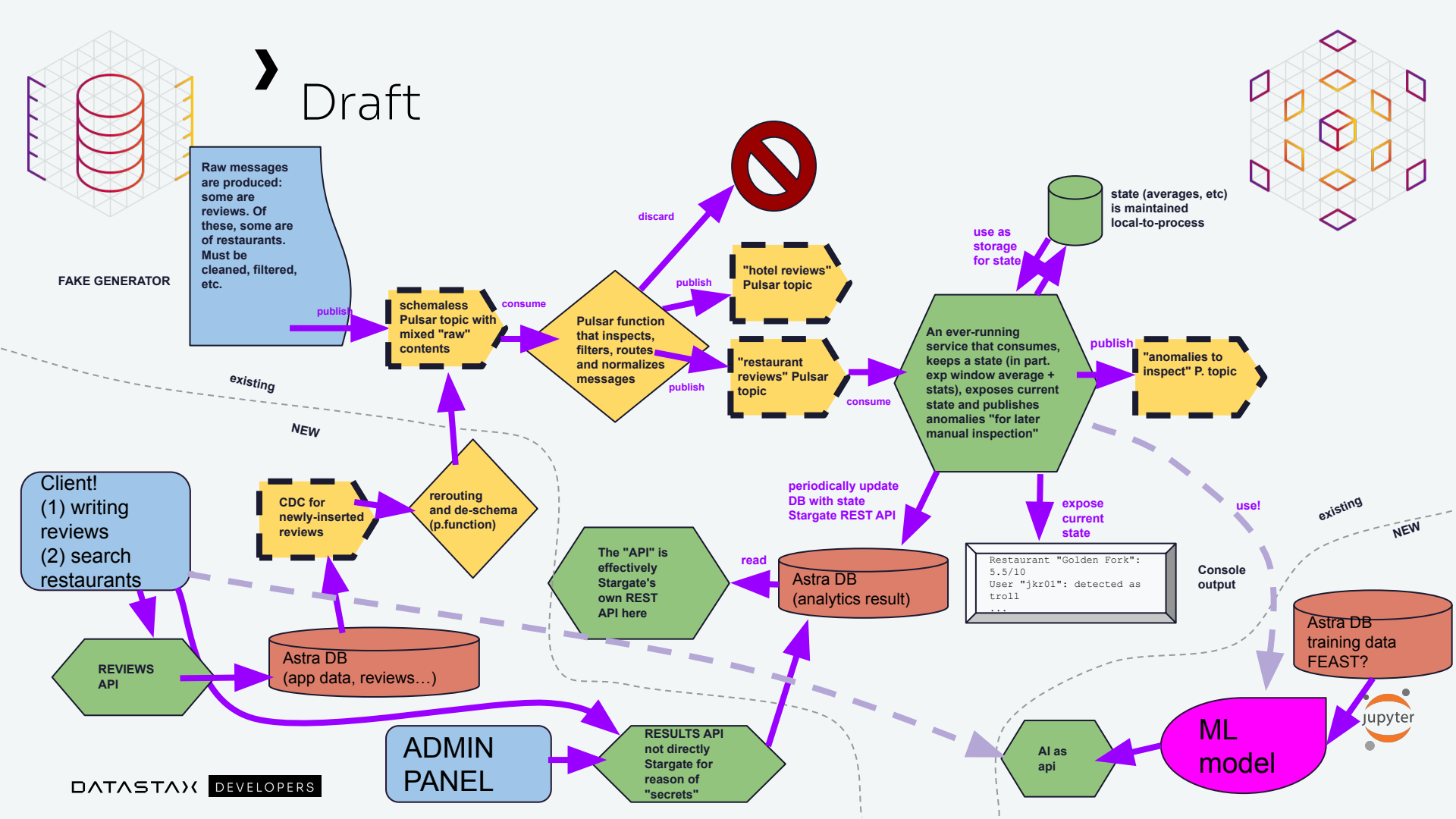
3-tier System of records

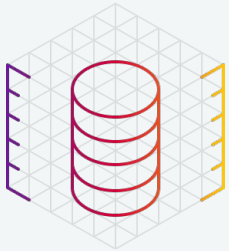
Gitpod

DataStax Astra DB

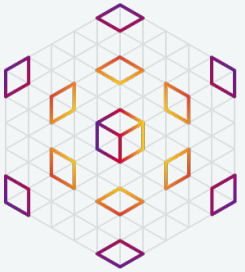
3-tier System of records

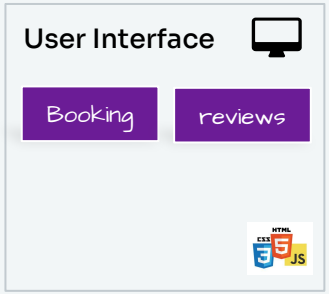

User Interface
Booking
reviews
booking
reviews
Rest Api (BFF)
Hotel
Review
User
STARGATE
Hotels
Reviews
cdc
Reviews
features
cassandra
reviews
Simulate reviews
Routing + Dedup
Error queue
Cleansed reviews
Normalize
Error queue
hotels reviews
states
Error queue
PULSAR
Injector
Reviews
Data Scientist Workspace
AI MODEL
jupyter
Api as an API
Validate Review
AI as an API
FastAPI
NLP Model
AI
Analyzer


Draft
FAKE GENERATOR
Raw messages are produced: some are reviews. Of these, some are of restaurants. Must be cleaned, filtered, etc.
publish
schemaless Pulsar topic with mixed "raw" contents
consume
Pulsar function that inspects, filters, routes and normalizes messages
discard
publish
"hotel reviews" Pulsar topic
publish
"restaurant reviews" Pulsar topic
consume
use as storage for state
state (averages, etc) is maintained local-to-process
An ever-running service that consumes, keeps a state (in part. exp window average + stats), exposes current state and publishes anomalies "for later manual inspection"
publish
"anomalies to inspect" P. topic
existing
NEW
Client!
(1) writing reviews
(2) search restaurants
CDC for newly-inserted reviews
rerouting and de-schema (p.function)
periodically update DB with state Stargate REST API
expose current state
use!
existing
NEW
The "API" is effectively Stargate's own REST API here
read
Astra DB (analytics result)
Restaurant "Golden Fork": 5.5/10
User "jkr01": detected as troll
...
Console output
Astra DB training data FEAST?
REVIEWS API
Astra DB (app data, reviews…)
ADMIN PANEL
RESULTS API not directly Stargate for reason of "secrets"
AI as api
ML model
jupyter
DATASTAX DEVELOPERS

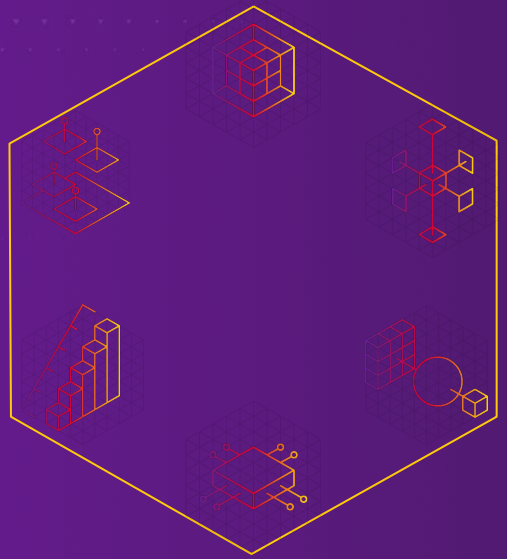


User Interface



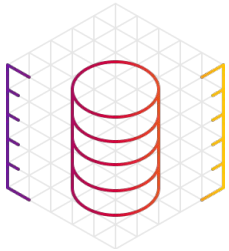


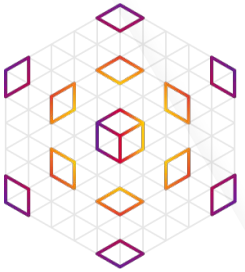
- **Template**
  - https://freehtmldesigns.com/free-hotel-booking-html-website-templates/
- **Technologies:**
  - Typescript + React
  - https://builtin.com/software-engineering-perspectives/create-react-app-typescript
- **Data Model:**
-



Break 1

We start again at 10:00 (15 MIN)





Thank You