
expoQA®26
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The Generative AI Revolution
A Compass for Test Leaders Through Change

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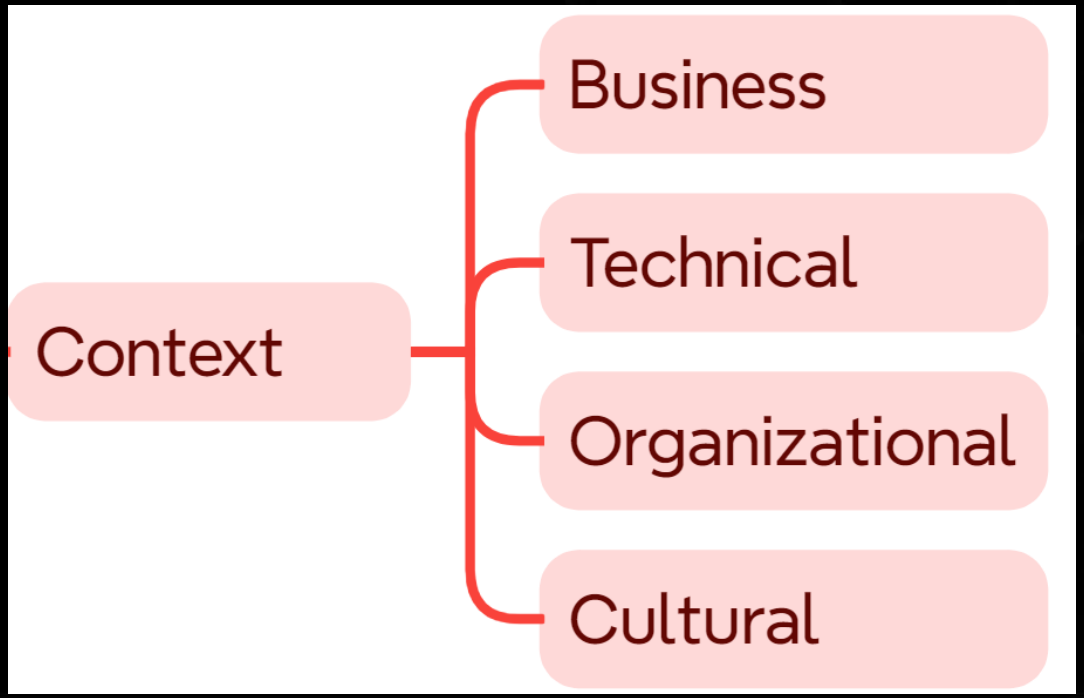
Compass for Test Leaders Through Change

- Adapting to change
- Risk Models
- Technological Solutions
- Lifecycle Models
- Fundamentals

Adapting to Change



Adapting to Change

Generate Test Ideas

Prioritize

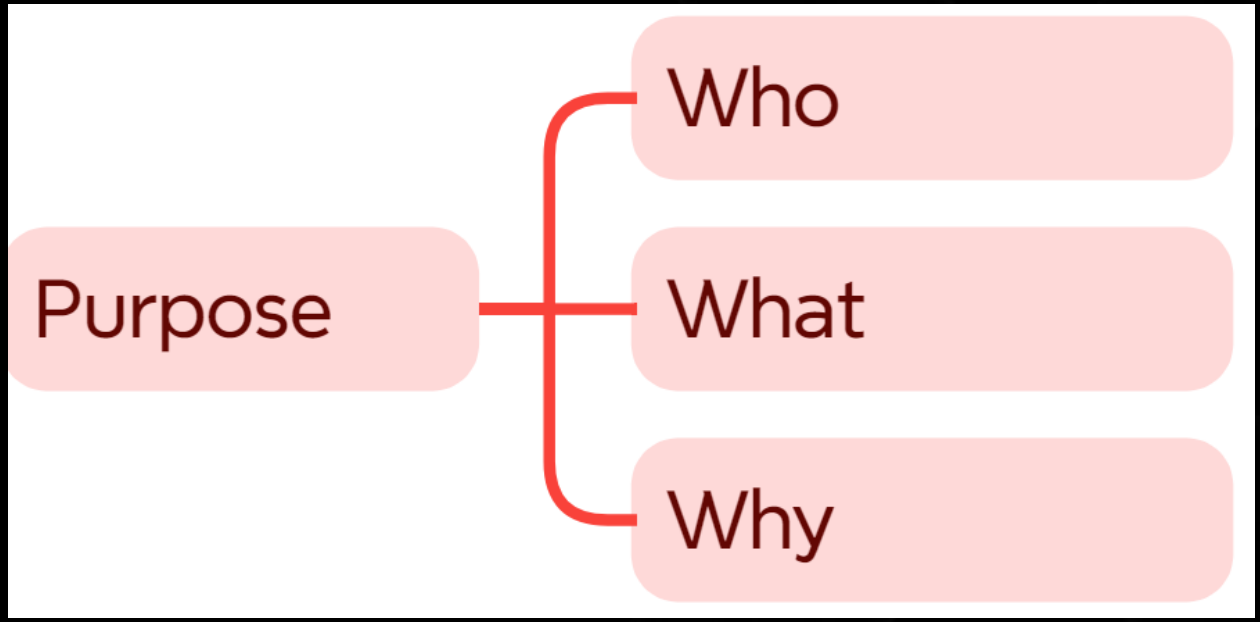
Elaborate

Learn

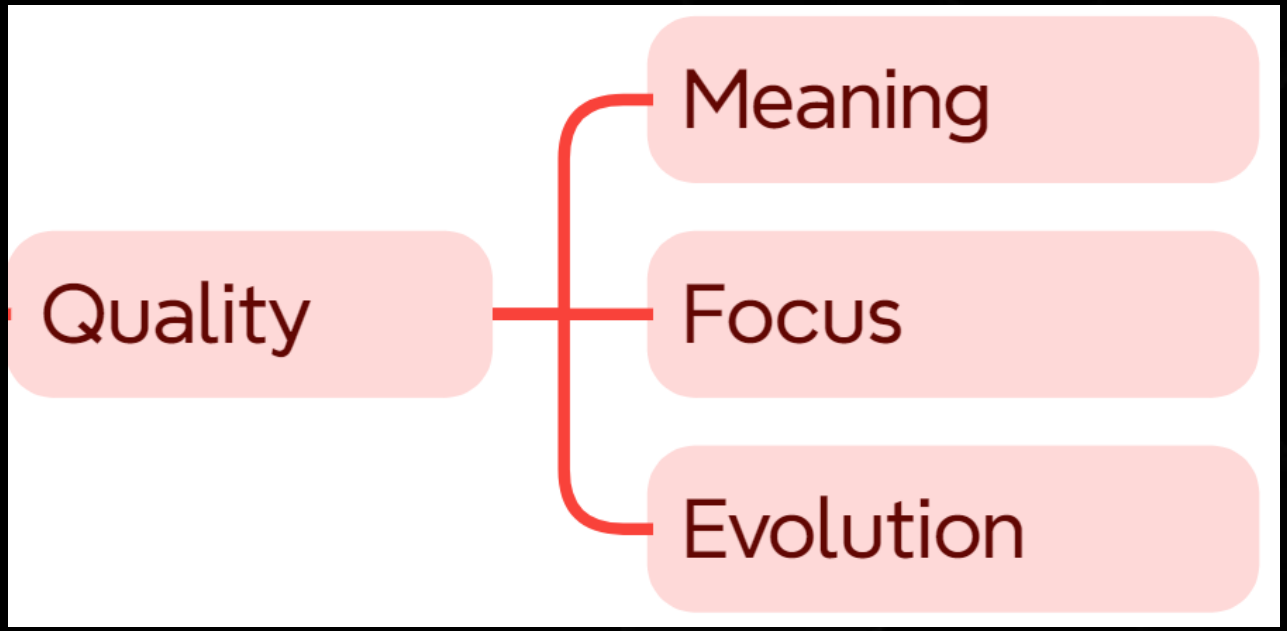
Adapt

Active Context Listening

Adapting to Change



Adapting to Change

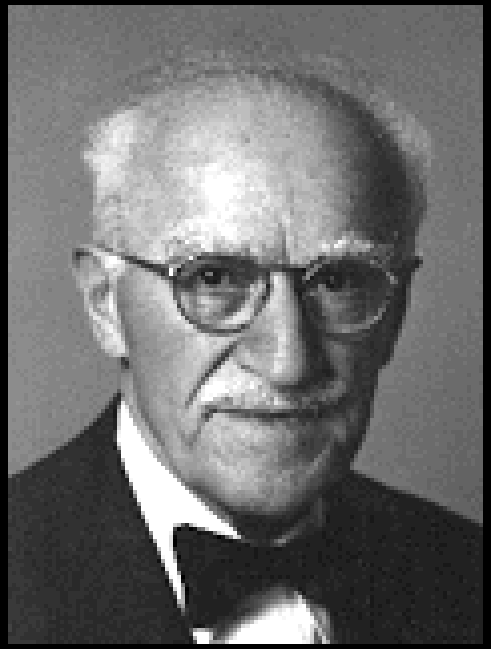


What is Quality?

Crosby on Quality

- “Quality is defined as conformance to requirements”
- “Quality is not a measure of GOODNESS”
- Phil B. Crosby, Quality is Free

Juran on Quality



“Quality is fitness for use”
Quality Control Handbook

Weinberg on Quality

- “Quality is value to some person”
- Exploring Requirements Quality Before Design

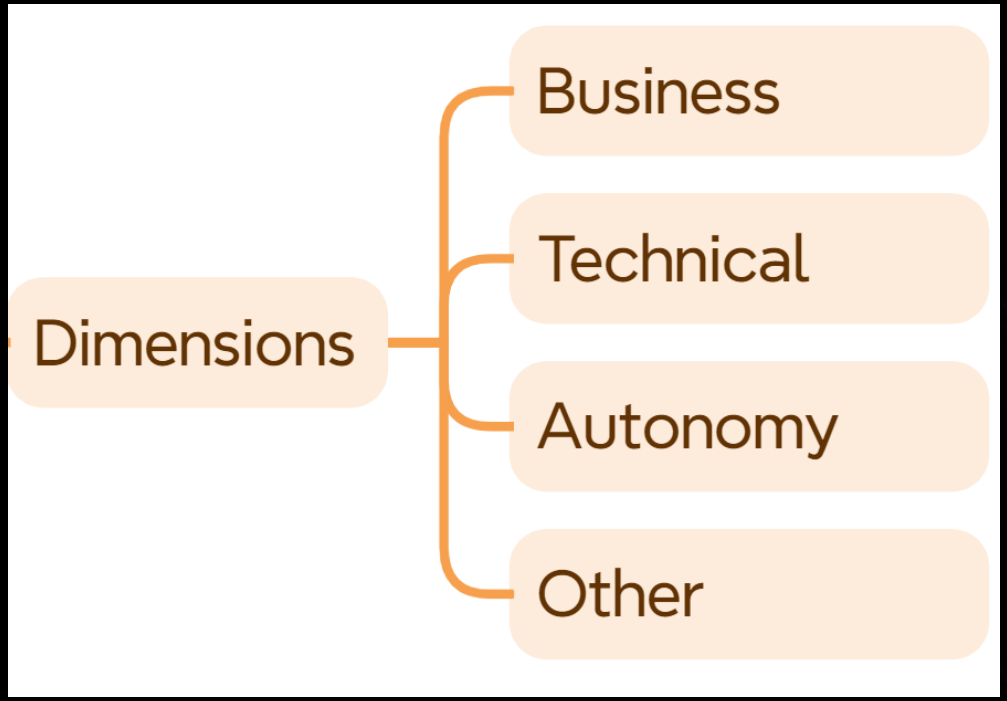
QUALITY

DATA INTEGRITY

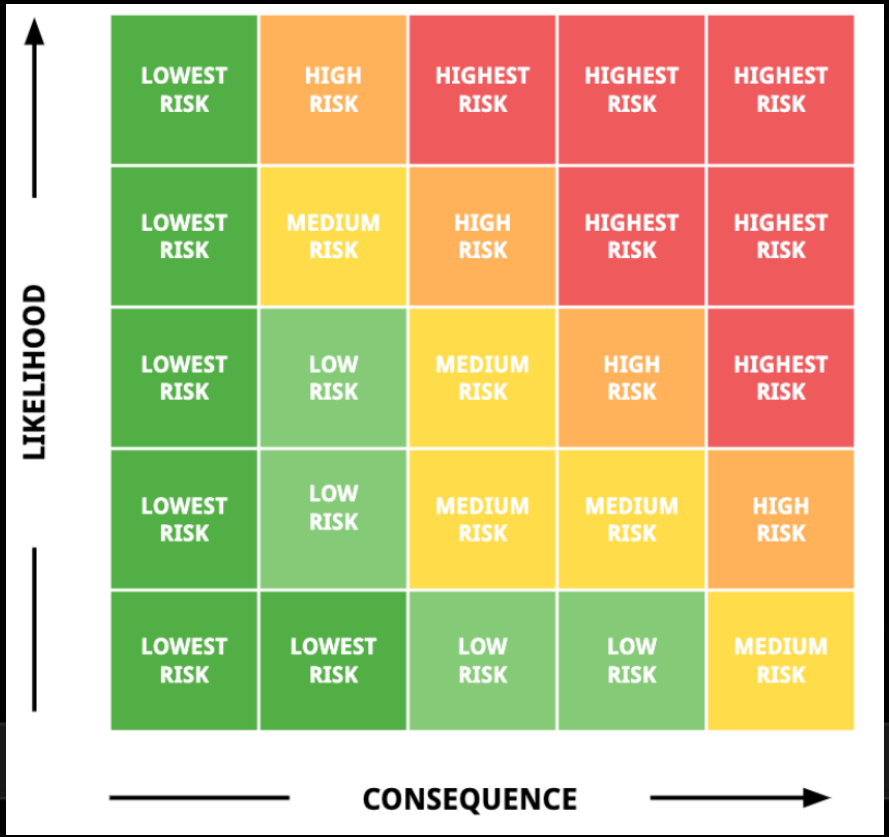
TRUTHFULNESS

TRUST

Risk Models



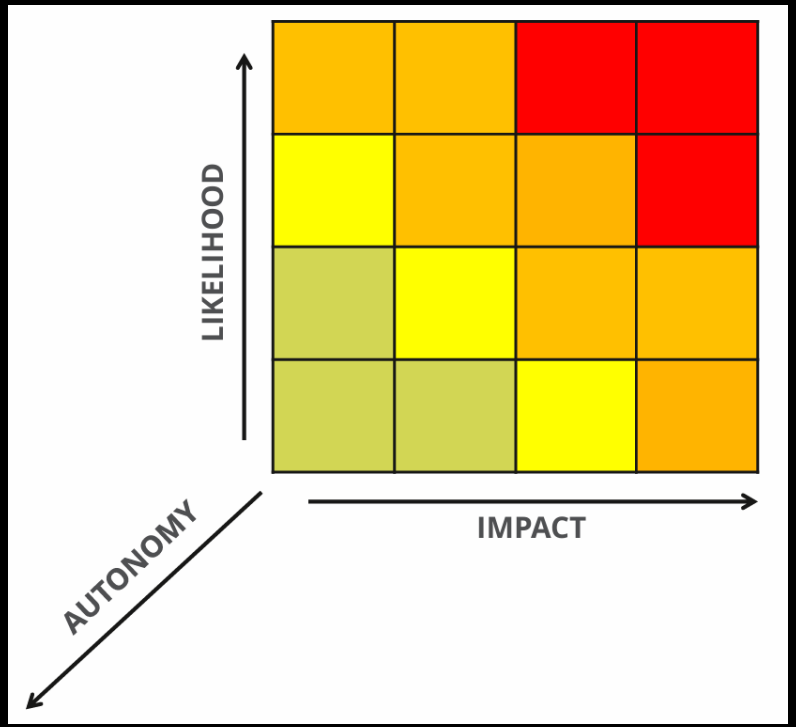
NASA Risk Model



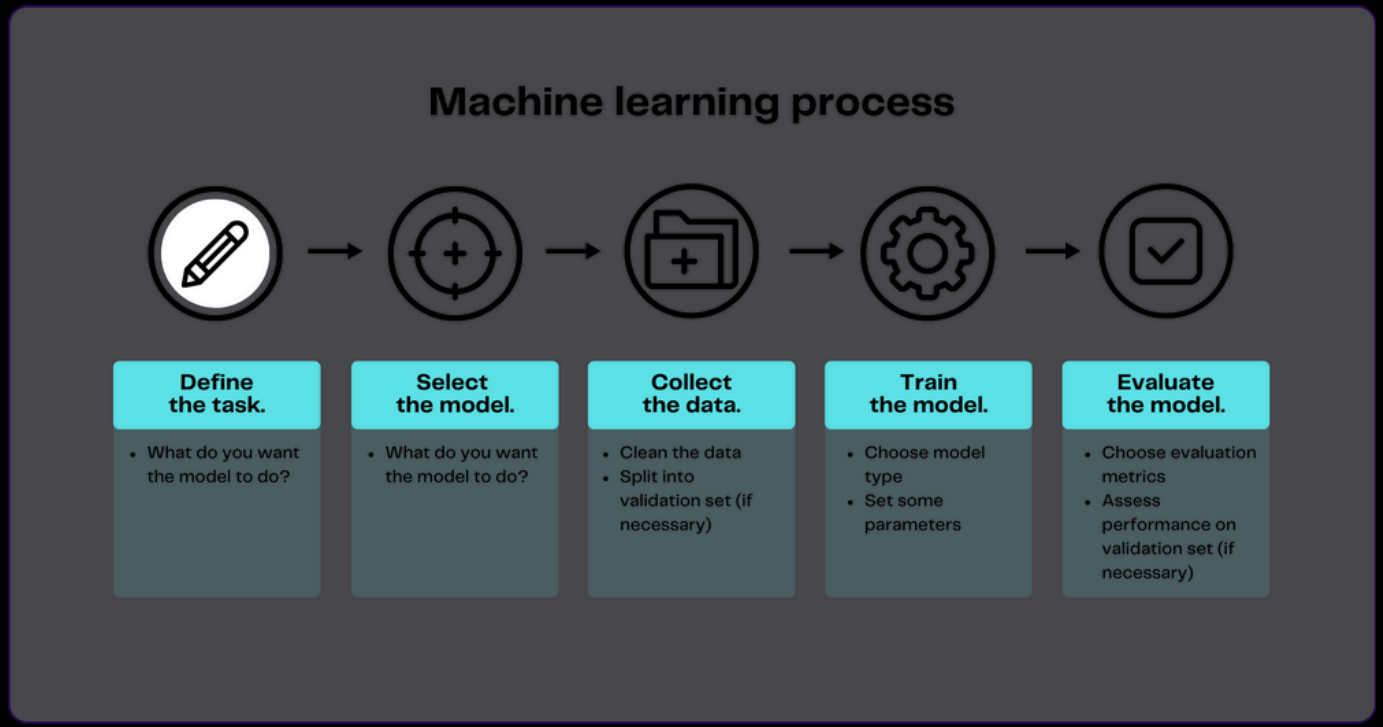
New Dimension of Risk Autonomy

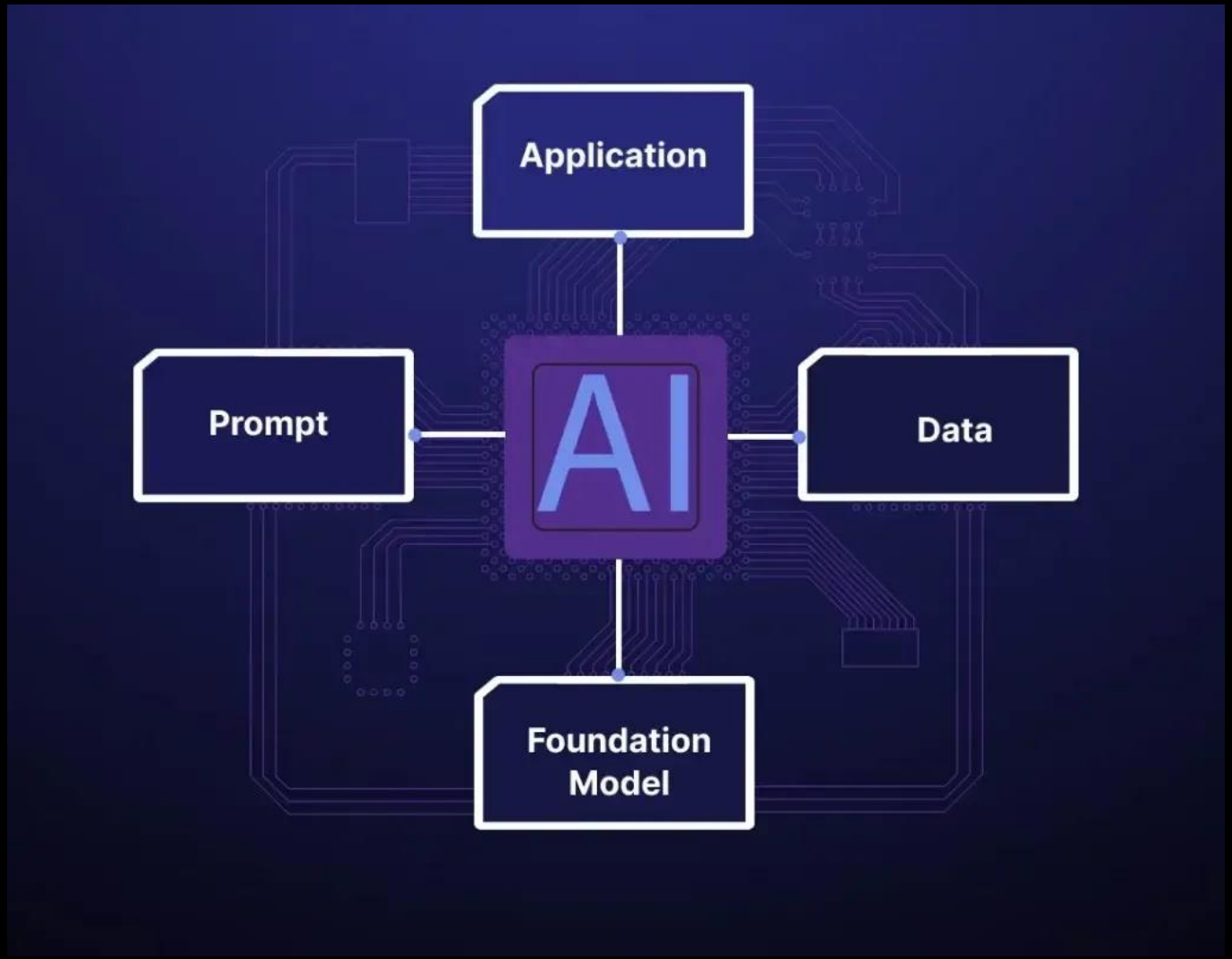
For AI-based systems,
that **context** includes a 3rd dimension
that can potentially increase risk
to intolerable levels:

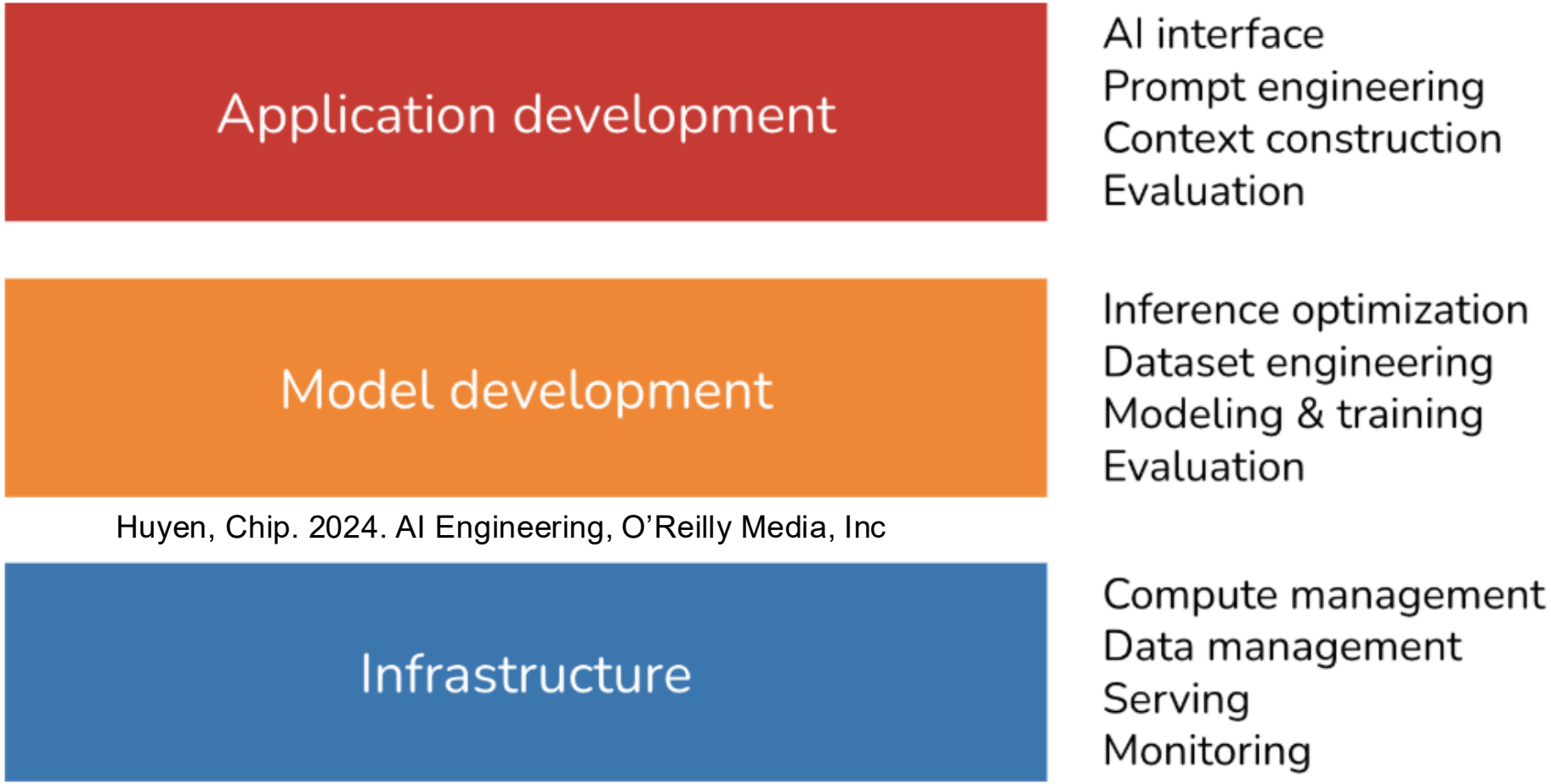
- **Likelihood**: The probability of AI doing harm.
- **Impact**: The potential severity of that harm.
- **Autonomy**: The degree to which the AI makes decisions without timely human intervention.



Technological Solutions



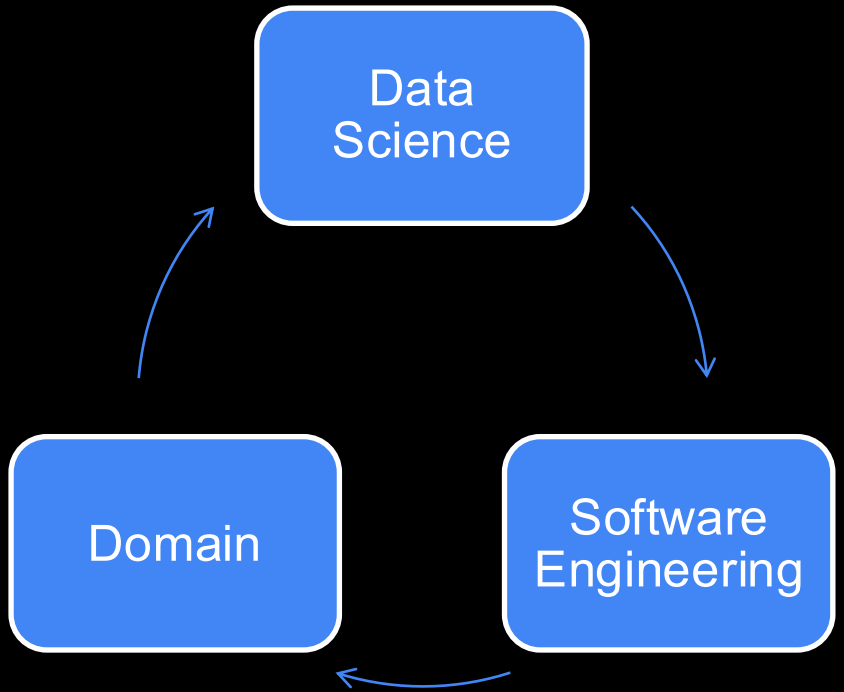

Application
Prompt
AI
Data
Foundation Model



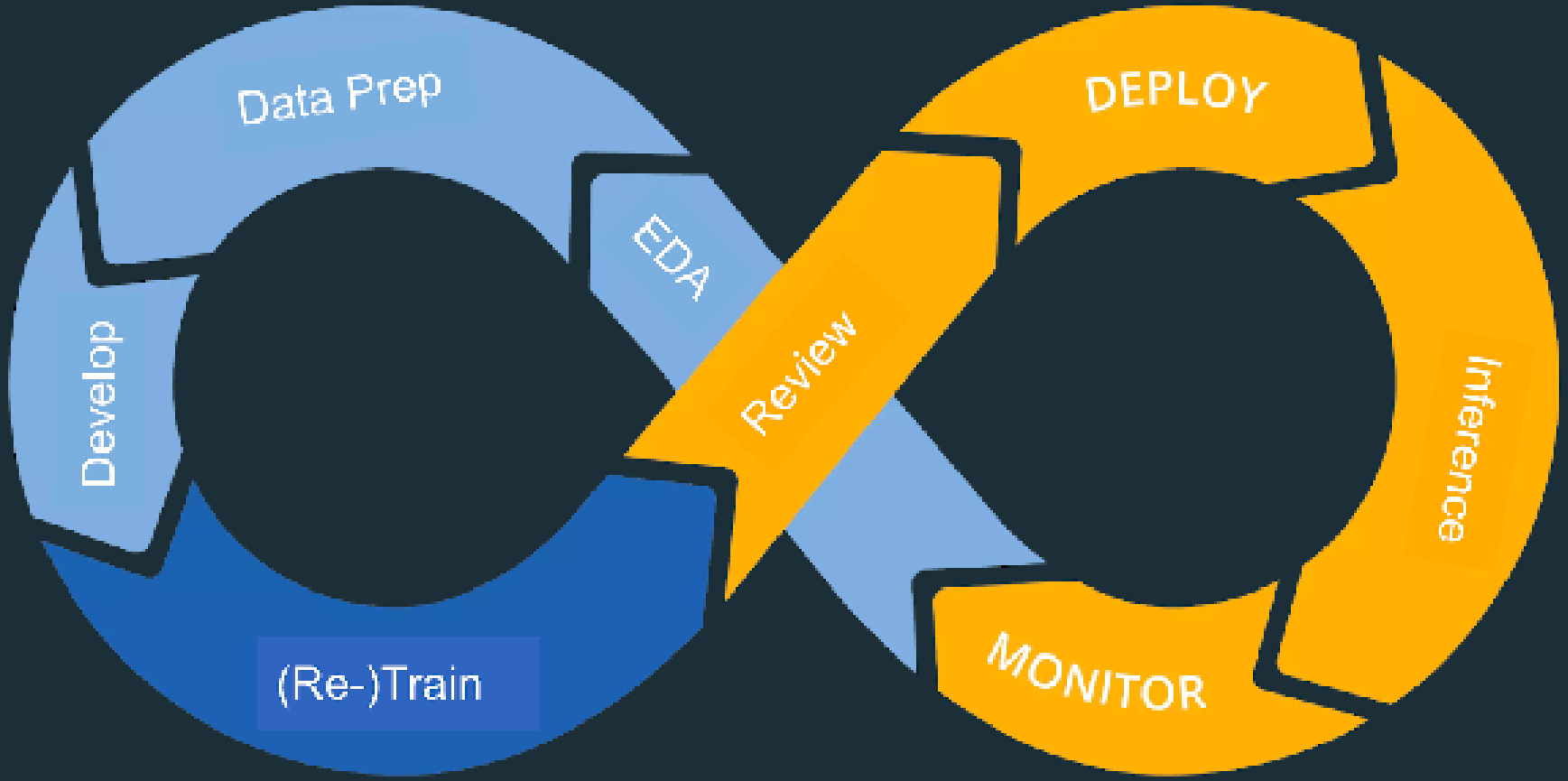
Huyen, Chip. 2024. AI Engineering, O'Reilly Media, Inc

Figure 1-14. Three layers of the AI engineering stack.

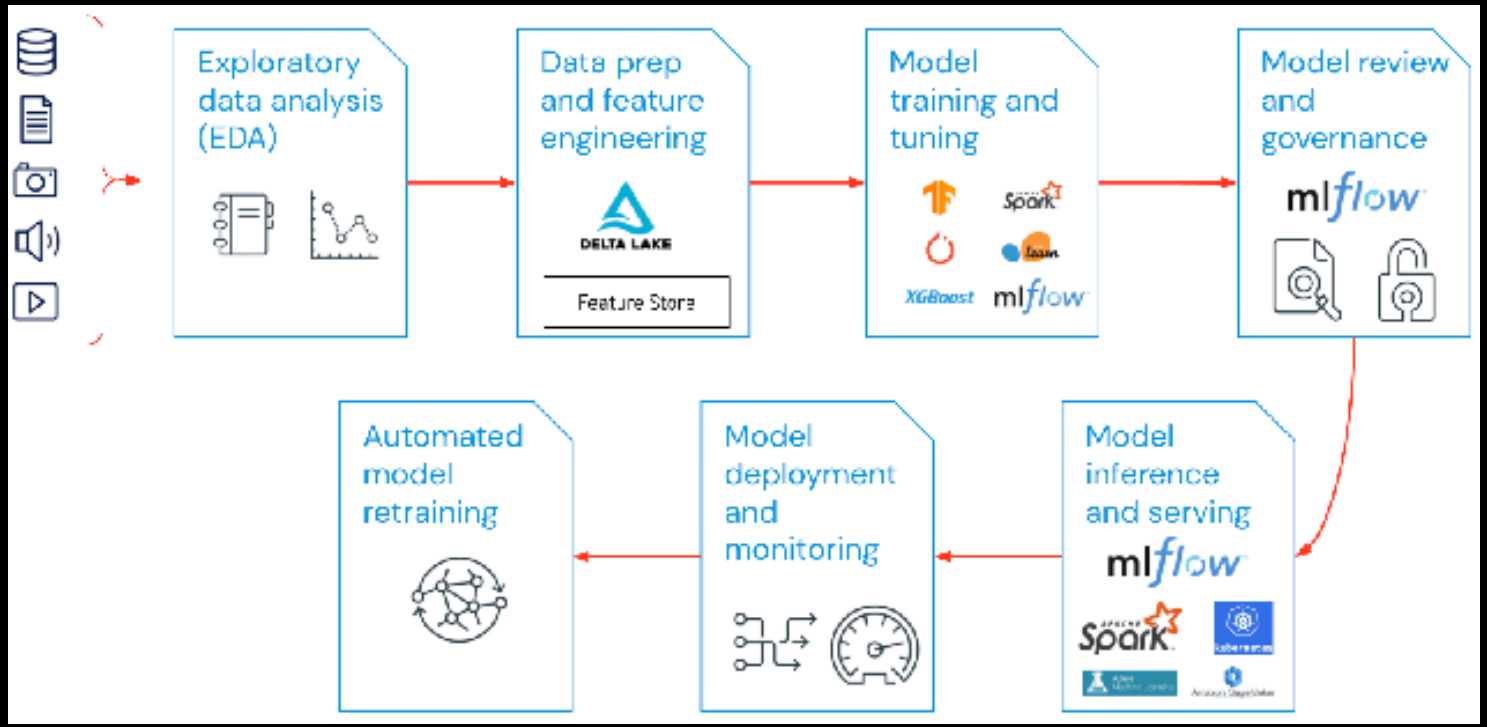
Lifecycle Models

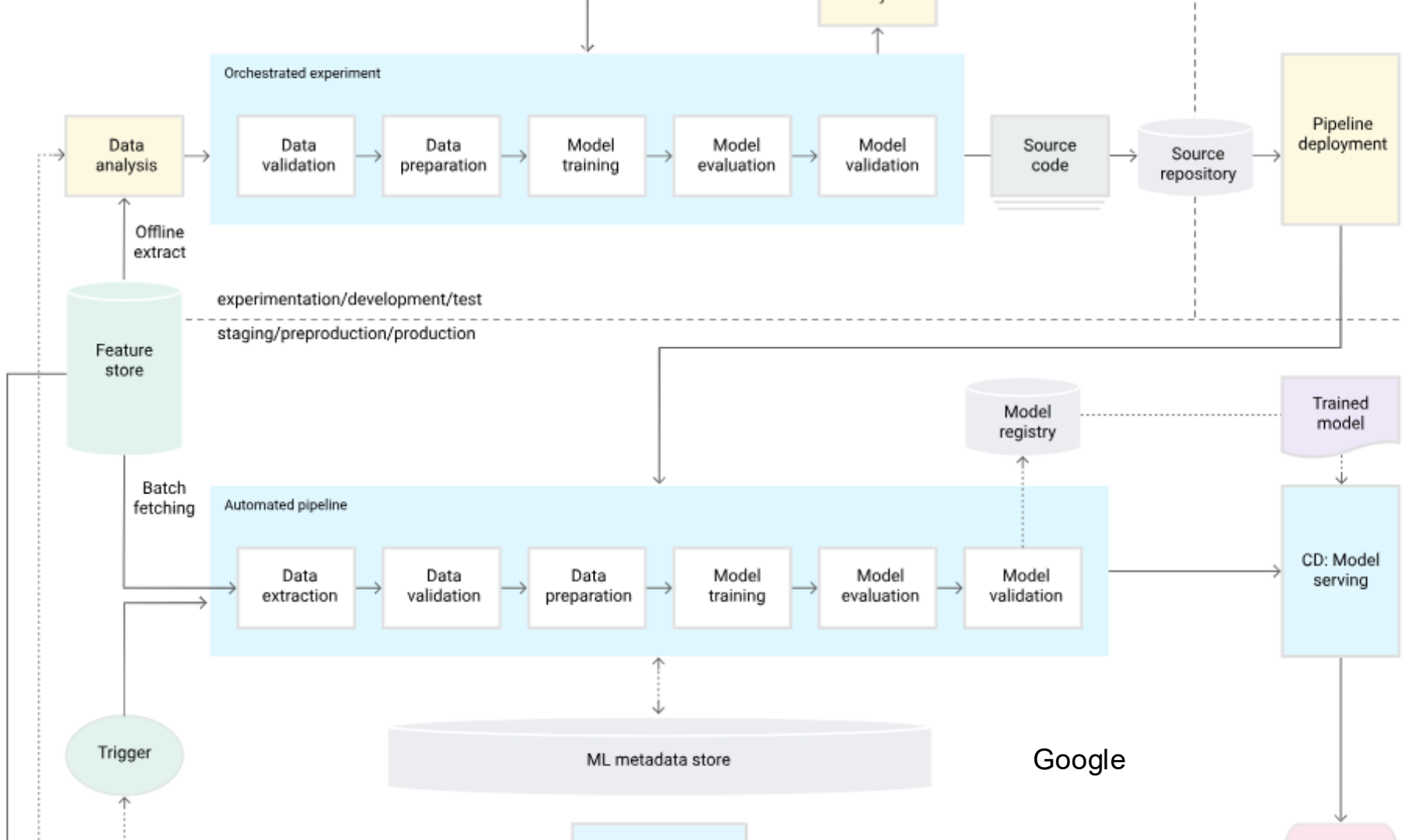


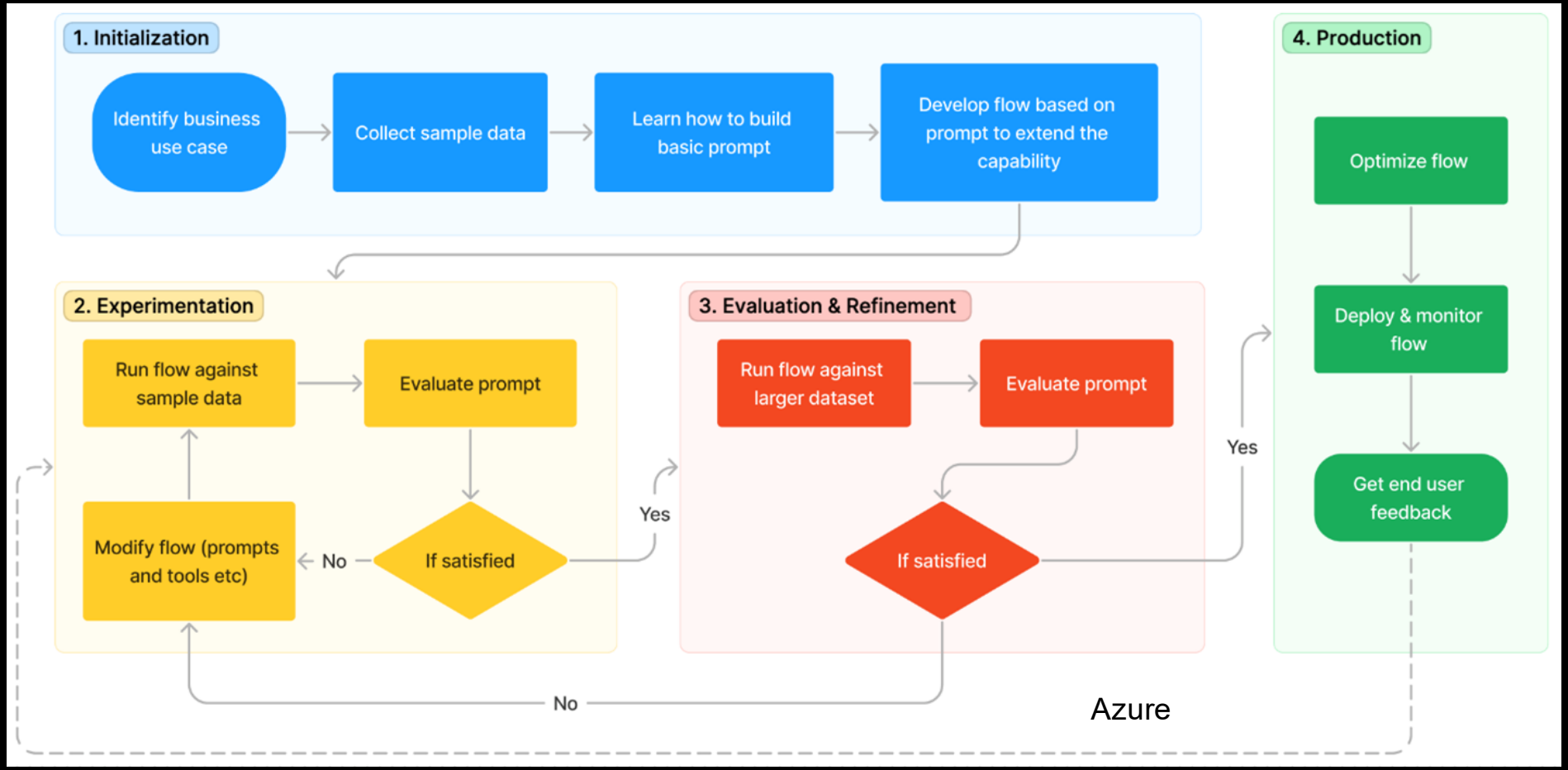
MLOps Cycle


Data Prep
EDA
Develop
(Re-)Train
DEPLOY
Review
Inference
MONITOR

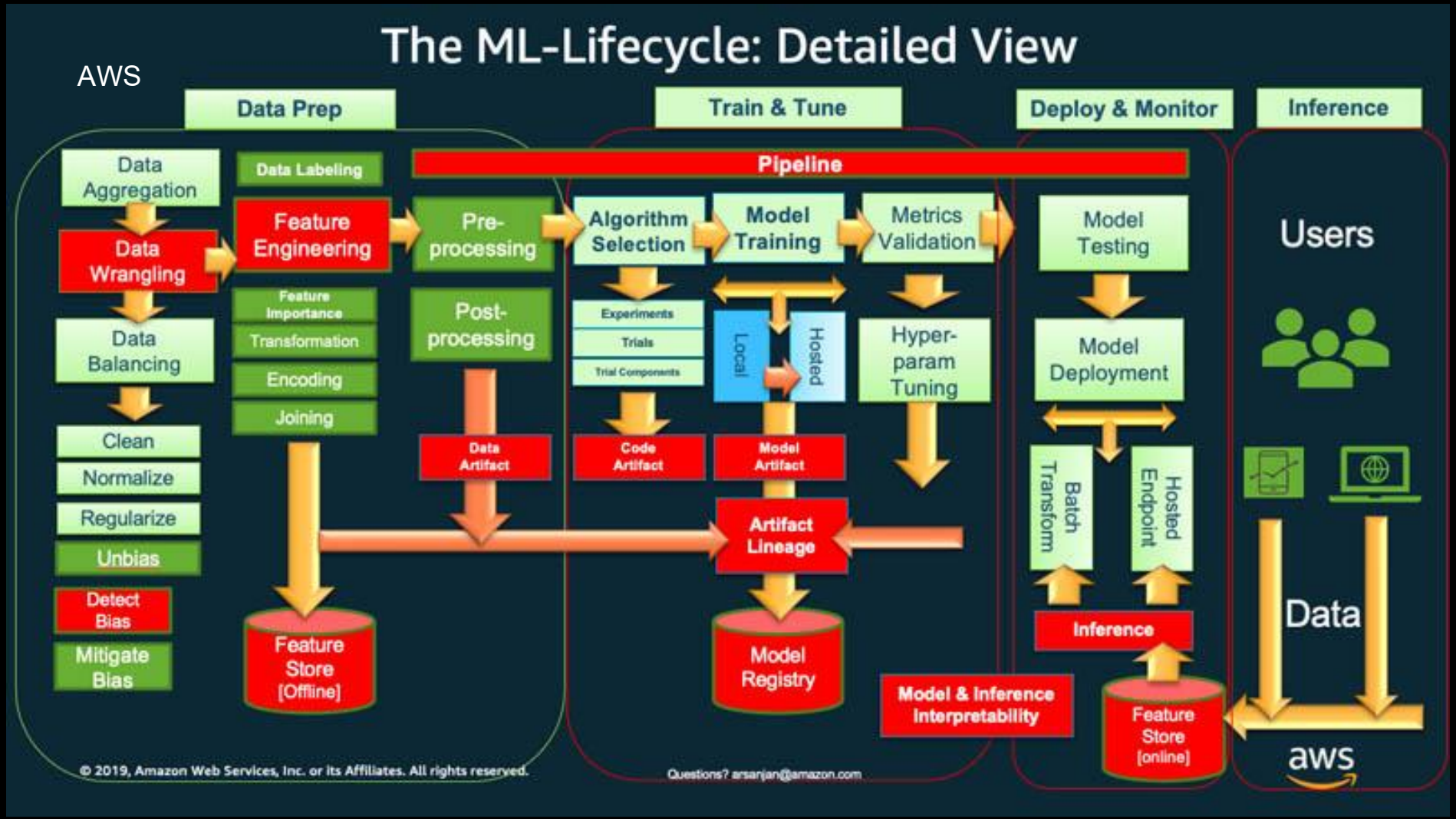
DataBricks Lifecycle Models




Orchestrated experiment
Data analysis
Data validation
Data preparation
Model training
Model evaluation
Model validation
Source code
Source repository
Pipeline deployment
Offline extract
experimentation/development/test
staging/preproduction/production
Feature store
Model registry
Trained model
Batch fetching
Automated pipeline
Data extraction
Data validation
Data preparation
Model training
Model evaluation
Model validation
CD: Model serving
Trigger
ML metadata store
Google


1. Initialization
Identify business use case
Collect sample data
Learn how to build basic prompt
Develop flow based on prompt to extend the capability
2. Experimentation
Run flow against sample data
Evaluate prompt
Modify flow (prompts and tools etc)
No
If satisfied
Yes
3. Evaluation & Refinement
Run flow against larger dataset
Evaluate prompt
If satisfied
Yes
No
4. Production
Optimize flow
Deploy & monitor flow
Get end user feedback
Azure

AWS


The ML-Lifecycle: Detailed View
Data Prep
Train & Tune
Deploy & Monitor
Inference
Data Aggregation
Data Wrangling
Data Balancing
Clean
Normalize
Regularize
Unbias
Detect Bias
Mitigate Bias
Data Labeling
Feature Engineering
Feature Importance
Transformation
Encoding
Joining
Pre-processing
Post-processing
Data Artifact
Feature Store [Offline]
Pipeline
Algorithm Selection
Model Training
Metrics Validation
Experiments
Trials
Trial Components
Local
Hosted
Hyper-param Tuning
Code Artifact
Model Artifact
Artifact Lineage
Model Registry
Model Testing
Model Deployment
Batch Transform
Hosted Endpoint
Inference
Model & Inference Interpretability
Feature Store [online]
Users
Data
aws
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Questions? arsanjan@amazon.com

Some Test Fundamentals

- Learning
- Communication
- Computing
- Problem Solving
- Collaboration

Just for Fun Some Terms of Confusion

- Models
- Regression
- Baseline
- Testing

Happy Testing!

 https://www.linkedin.com/in/robsabamibug/

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Thank you for attending

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