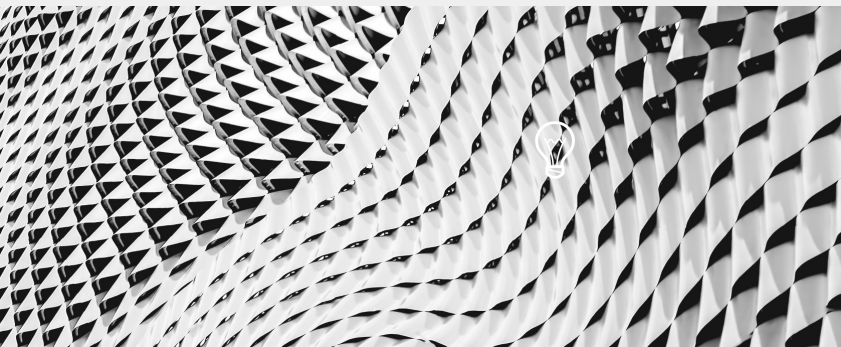# Easy Adoption of AI/ML Workloads

Rich Lucente

Principal Solutions Architect

Red Hat

What do we mean by AI/ML?

THE BROAD SPECTRUM OF "AI"

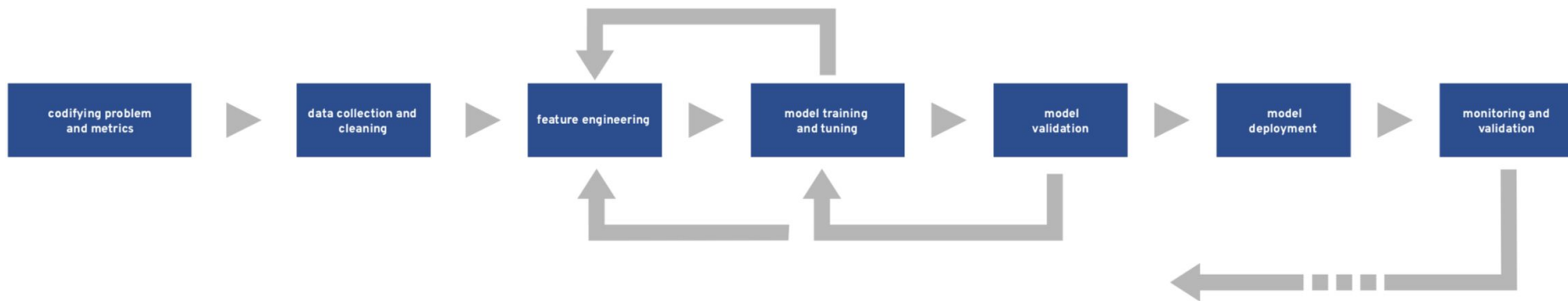We use 'AI' as a shorthand for Data Science, Analytics, ML, and other forms of AI.

Data Structure is Known
ahead of time
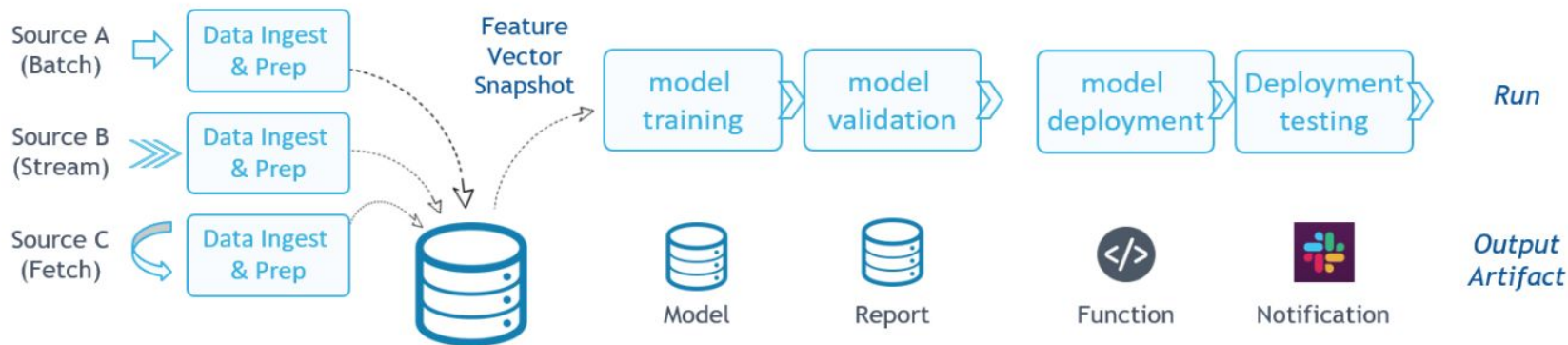
Data Structure is Discovered
over time

Big Data, Analytics, Machine Learning, and Artificial Intelligence →

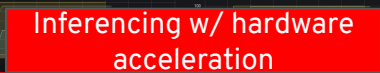| SUMMARY STATISTICS	PREDICTIVE ANALYTICS	MACHINE LEARNING	COGNITIVE SYSTEMS
Mean Median Sum Average Max/Min Standard deviation	Future probability Trend analysis Time series forecasting Text analytics	Iterative learning from data patterns to allow extrapolation to future decisions. Assistance to human operators and automatic response to known patterns.	Natural language Perception Autonomous decisions Explanation of acts

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Typical AI/ML Workflow
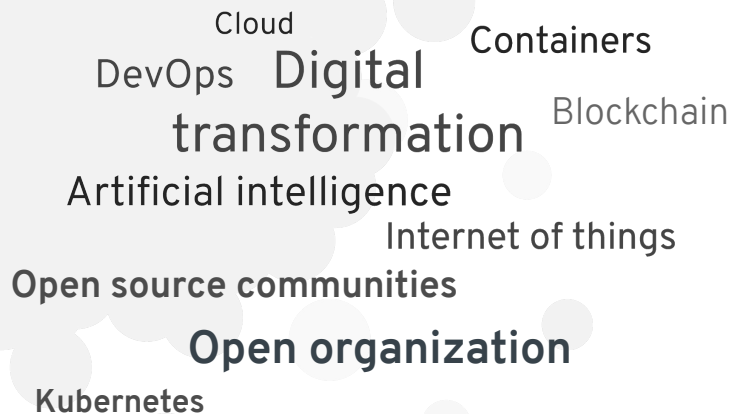
DATA SCIENCE PIPELINE--A TYPICAL SCENARIO

Data Science Pipeline and Output Artifacts

1. Data Collection / Ingest
2. Data Prep - Labeling, Enrichment, etc.
3. Model Training
4. Model Testing
5. Repeat and Tweak

WHAT DOES A DATA SCIENTIST WANT?

As a Data Scientist, I want a "self-service cloud like" experience for my Machine Learning projects, where I can access a rich set of modelling frameworks, data, and computational resources, share and collaborate with colleagues, and deliver my work into production with speed, agility and repeatability to drive business value!

Perform ML Modelling

Inferencing w/ hardware acceleration

ML model deployment in app dev

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BIG IDEAS DRIVE BUSINESS INNOVATION

Cloud

DevOps   Digital
Containers

transformation   Blockchain

Artificial intelligence

Internet of things

Open source communities

Open organization

Kubernetes

Business innovation is all around us.

Every organization in every geography and in
every industry can innovate and create more
customer value and differentiation with
open source technologies and an open culture.

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CREATING VALUE DEPENDS ON YOUR ABILITY TO DELIVER PRODUCTS FASTER

Cloud-native applications

AI & machine learning

Blockchain

Internet of Things

Innovation culture

Containers, Kubernetes, and hybrid cloud are key ingredients.
OpenShift is the best platform to deliver container-based applications.

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CONTAINERS TRANSFORM

Monolith

N-Tier

Microservices

Applications

Datacenter

Hosted

Hybrid

Infrastructures

Waterfall

Agile

DevSecOps

Processes

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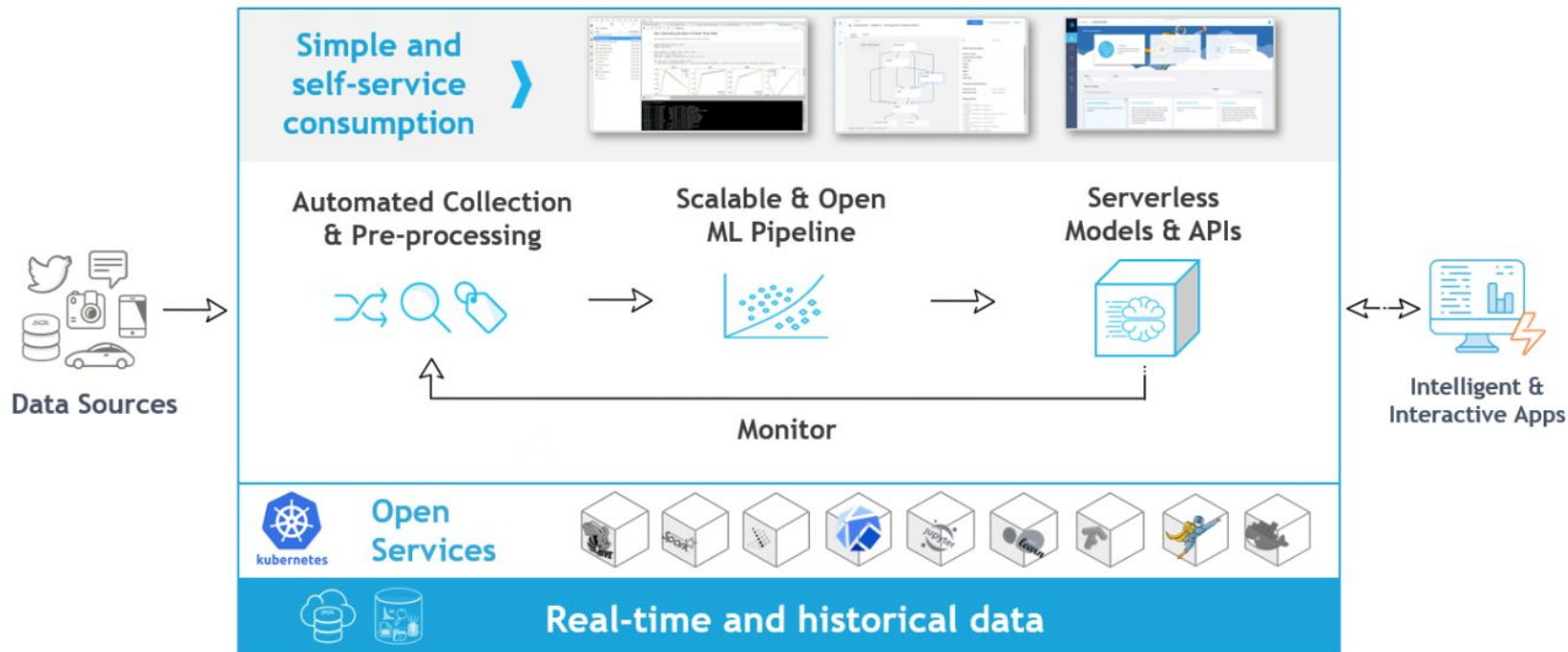
Containers and Kubernetes - Open and Scalable AI/ML Pipelines

AI/ML--THE OPEN SOURCE WAY

- True Portability

- Choose ANY infrastructure

    - Any Cloud

    - Any Datacenter

    - Any Deployable Unit

- Avoid Cloud Lock-in, *Avoid AI/ML Lock-in*

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WHERE DOES RED HAT FIT IN WITH AI/ML?

- Provide software **_infrastructure_** that enables an open AI / ML approach that avoids cloud and AI/ML lock in

- Work upstream in the open source communities to foster collaboration between communities, vendors, user-enterprises, and academics following open source best practices - https://opendatahub.io/

- Develop and use AI internally for our customer's benefit

AI/ML DEMO

Thank You!