Introduction to AIOps, Project AI4CI and Operate First

Agenda

- **Hands on Workshop**

- **Introduction to -**
  - Operate First
  - AIOps
  - Project AI4CI

Audience Interaction

Raise your hands if you are familiar with **Data Science or have worked with AI/ML before**
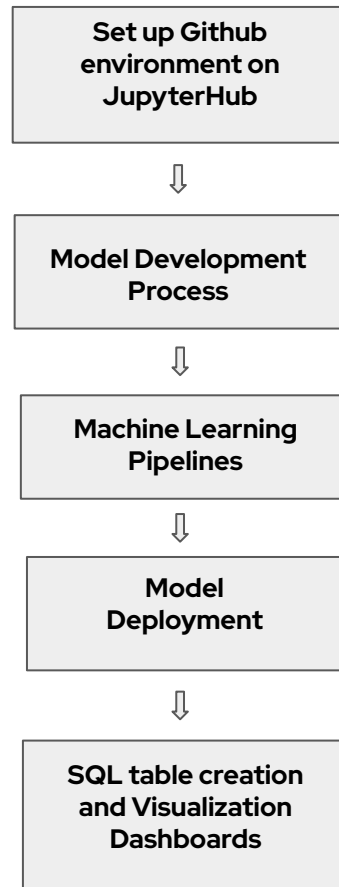
Audience Interaction

Raise your hands if you are familiar with Jupyter Notebooks

Agenda for the workshop

Follow an end-to-end process of creating an AIOps tool:
We start with setting up the environment and go through the whole process of building the model, deploying it and visualizing metrics

```
┌─────────────────────────┐
│    Set up Github        │
│    environment on       │
│    JupyterHub           │
└─────────────────────────┘
            ⇩
┌─────────────────────────┐
│   Model Development      │
│   Process                │
└─────────────────────────┘
            ⇩
┌─────────────────────────┐
│   Machine Learning       │
│   Pipelines              │
└─────────────────────────┘
            ⇩
┌─────────────────────────┐
│   Model                  │
│   Deployment             │
└─────────────────────────┘
            ⇩
┌─────────────────────────┐
│   SQL table creation     │
│   and Visualization      │
│   Dashboards             │
└─────────────────────────┘
```

Operate First

Operate First is a concept to incorporate operational experience into software development, by extending development to include operating, testing, and proving code in a production environment.

Ideally Operate First becomes a partner to Upstream First as a basic tenet of our workflow."

What is AIOps?

AIOps
AI + DevOps

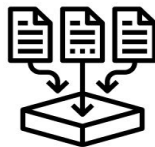Artificial Intelligence
for IT Operations

+

Dev & Ops : **DevOps**

AI4CI supports CI/CD and software dev processes

What is AI4CI?

Collection of **Open Source AIOps tools** including scripts, notebooks, pipelines, dashboards and data sources.

Data collection
Collection of open operations data from Kubernetes testing platforms eg: Testgrid, Github, and Prow.

Metrics
Collects metrics and **KPIs** and visualization dashboards.
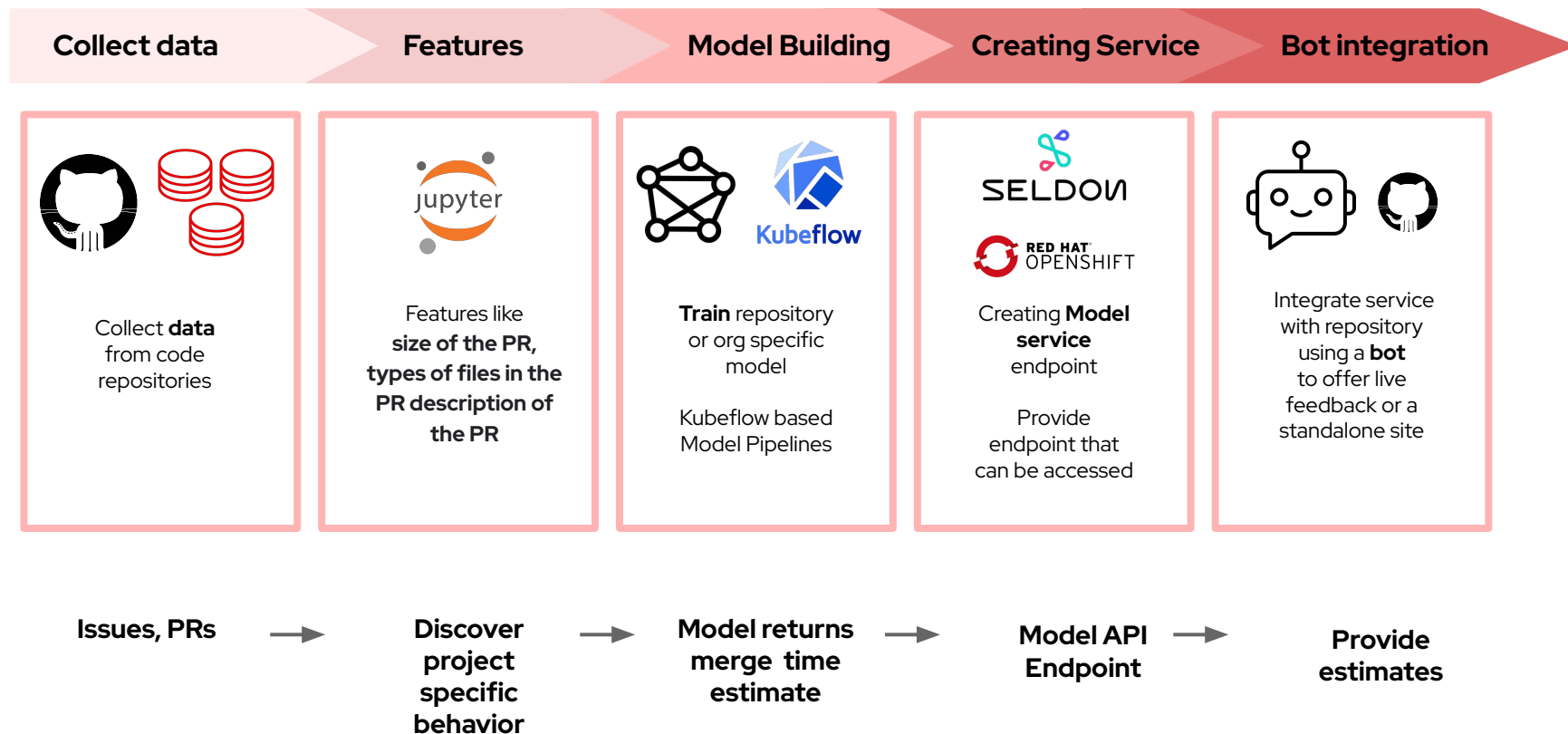

ML Services
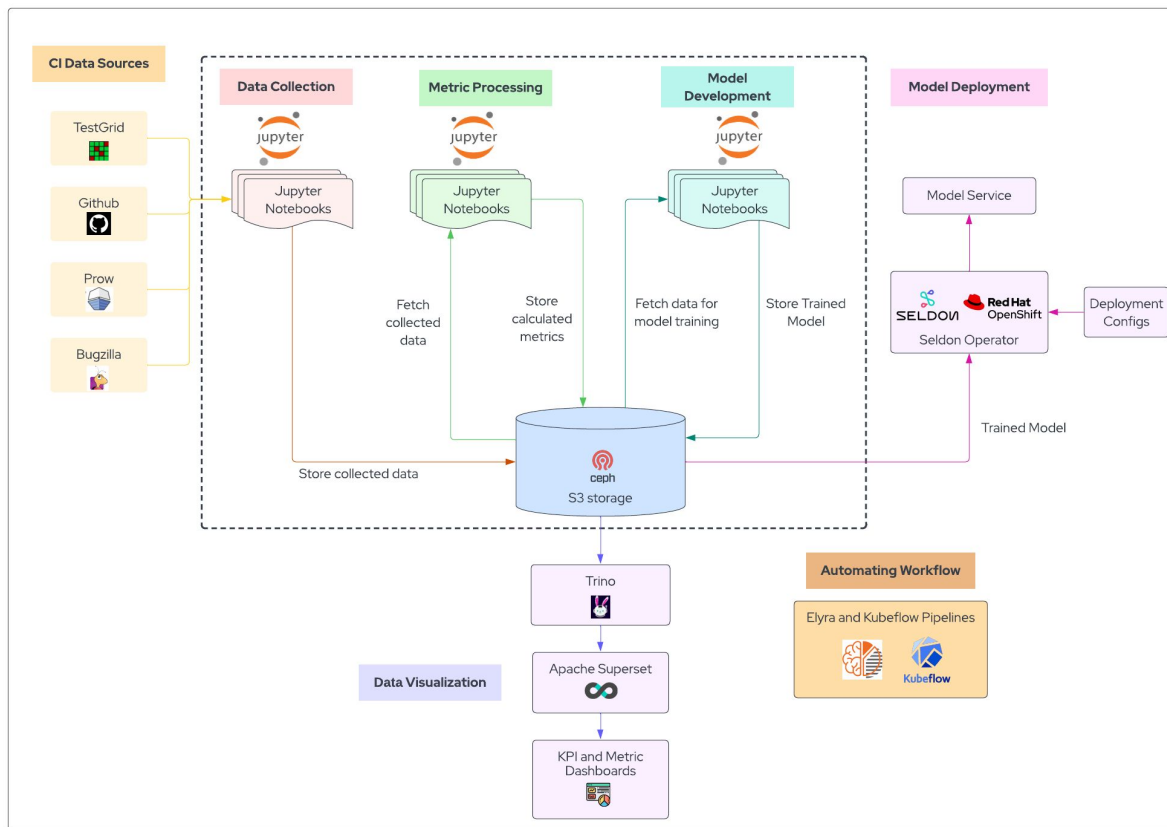**ML services** which can support CI/CD processes.

Open source AIOps template
Resource for open source AIOps communities (notebooks, scripts, automated ML pipelines, dashboards, services tools)

Current workflow: Github time to merge prediction service

Collect data	Features	Model Building	Creating Service	Bot integration

Collect data from code repositories

Features like **size of the PR, types of files in the PR description of the PR**

Train repository or org specific model

Kubeflow based Model Pipelines

Creating **Model service** endpoint

Provide endpoint that can be accessed

Integrate service with repository using a **bot** to offer live feedback or a standalone site

Issues, PRs → **Discover project specific behavior** → **Model returns merge time estimate** → **Model API Endpoint** → **Provide estimates**

AI4CI - Architecture Diagram

Next Steps

Workshop Materials:

Follow this link: https://ocp-ci-analysis.catalog.meteor.zone/docs/workshop/prerequisites.html

Audience Interaction

Raise your hands if you are familiar with Python

Audience Interaction

Raise your hands if you are familiar with Git

Audience Interaction

Raise your hands if you are familiar with Command Line Terminal

Thank you!
Questions?

To carry on with the workshop later and learn more, please checkout –

https://ocp-ci-analysis.catalog.meteor.zone/docs/workshop/prerequisites.html