

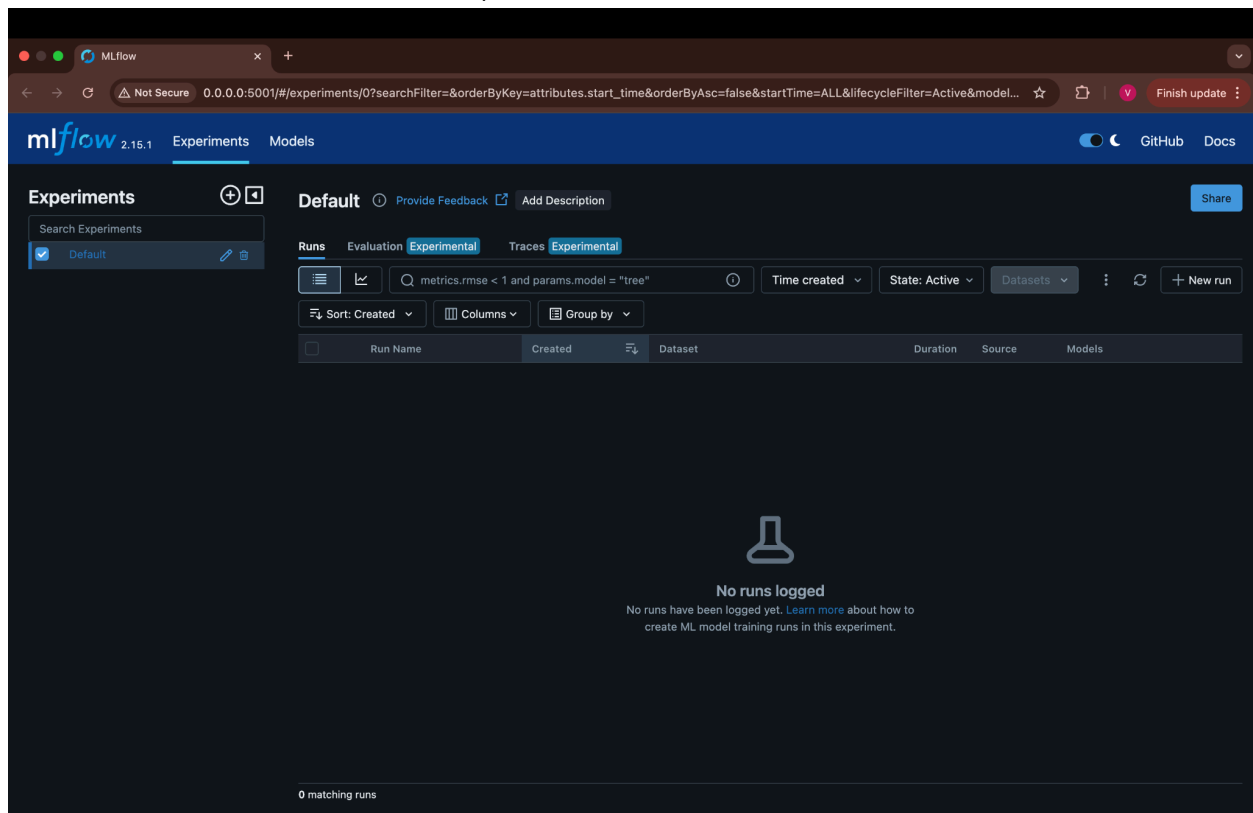
Lab 4 - Venkatachalam Subramanian Periya Subbu

Building Docker image

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS JUPYTER COMMENTS
(mlops) venkatachalamsubramanianperiyasubbu@Venkatachalam-MacBook-Air ML0ps % cd mlflow_test
(mlops) venkatachalamsubramanianperiyasubbu@Venkatachalam-MacBook-Air mlflow_test % docker build -t mlflow-server .
[+] Building 83.6s (8/8) FINISHED
=> [internal] load build definition from Dockerfile
=> transferring dockerfile: 399B
=> [internal] load metadata for docker.io/library/python:3.11-slim
=> [internal] load .dockerignore
=> transferring context: 2B
=> [1/3] FROM docker.io/library/python:3.11-slim@sha256:7029b00486ac40bed03e36775b864d3f3d39dcdbf19cd45e6a52d541e6c178f0
=> resolve docker.io/library/python:3.11-slim@sha256:7029b00486ac40bed03e36775b864d3f3d39dcdbf19cd45e6a52d541e6c178f0
=> [auth] library/python:pull token for registry-1.docker.io
=> CACHED [2/3] WORKDIR /app
=> [3/3] RUN pip install mlflow
=> exporting to image
=> exporting layers
=> exporting manifest sha256:355b5a71b43c7dfeaa59ce5886770ea16a2af4fe8d4583010ecb75ebdc7034fd
=> exporting config sha256:7331d7445fb39e2664f185fab671aee017b1a8acd8d7e938729cd7c9f1969a9
=> exporting attestation manifest sha256:3295c482b5426c414e5a7647dd0631711ae4fc5452e8609949fd1a8952384dc1
=> exporting manifest list sha256:58ee132ff5565d28335bd715807c2c1d788ea9ee272435ab634a955ab3b0aa51
=> naming to docker.io/library/mlflow-server:latest
=> unpacking to docker.io/library/mlflow-server:latest
(mlops) venkatachalamsubramanianperiyasubbu@Venkatachalam-MacBook-Air mlflow_test %
```

MLFlow UI

Note: Port 5000 was unavailable on my MacOS machine due to a protected system process (Control Center) binding to it. Hence, MLflow server was launched on port 5001 instead of 5000.



Deployments

Deployments

Name	Images	Labels	Pods	Created ↑
mlflow-deployment	mlflow-server	-	1 / 1	a minute ago
kubernetes-bootcamp	gcr.io/google-samples/kubernetes-bootcamp:v1	app: kubernetes-bootcamp	1 / 1	2 days ago

Pods

Pods

Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created ↑
mlflow-deployment-5d9f94f66f-ck5j7	mlflow-server	app: mlflow pod-template-hash: 5d9f94f66f	minikube	Running	0	-	-	a minute ago
kubernetes-bootcamp-9bc58d867-z4gg8	gcr.io/google-samples/kubernetes-bootcamp:v1	app: kubernetes-bootcamp pod-template-hash: 9bc58d867	minikube	Running	1	-	-	2 days ago

Services

MLflow

Kubernetes Dashboard

127.0.0.1:64456/api/v1/namespaces/kubernetes-dashboard/services/http:kubernetes-dashboard:/proxy/#/service?namespace=default

kubernetes

default

Search

Service > Services

Workloads

Cron Jobs

Daemon Sets

Deployments

Jobs

Pods

Replica Sets

Replication Controllers

Stateful Sets

Service

Ingresses

Ingress Classes

Services

Config and Storage

Config Maps

Persistent Volume Claims

Secrets

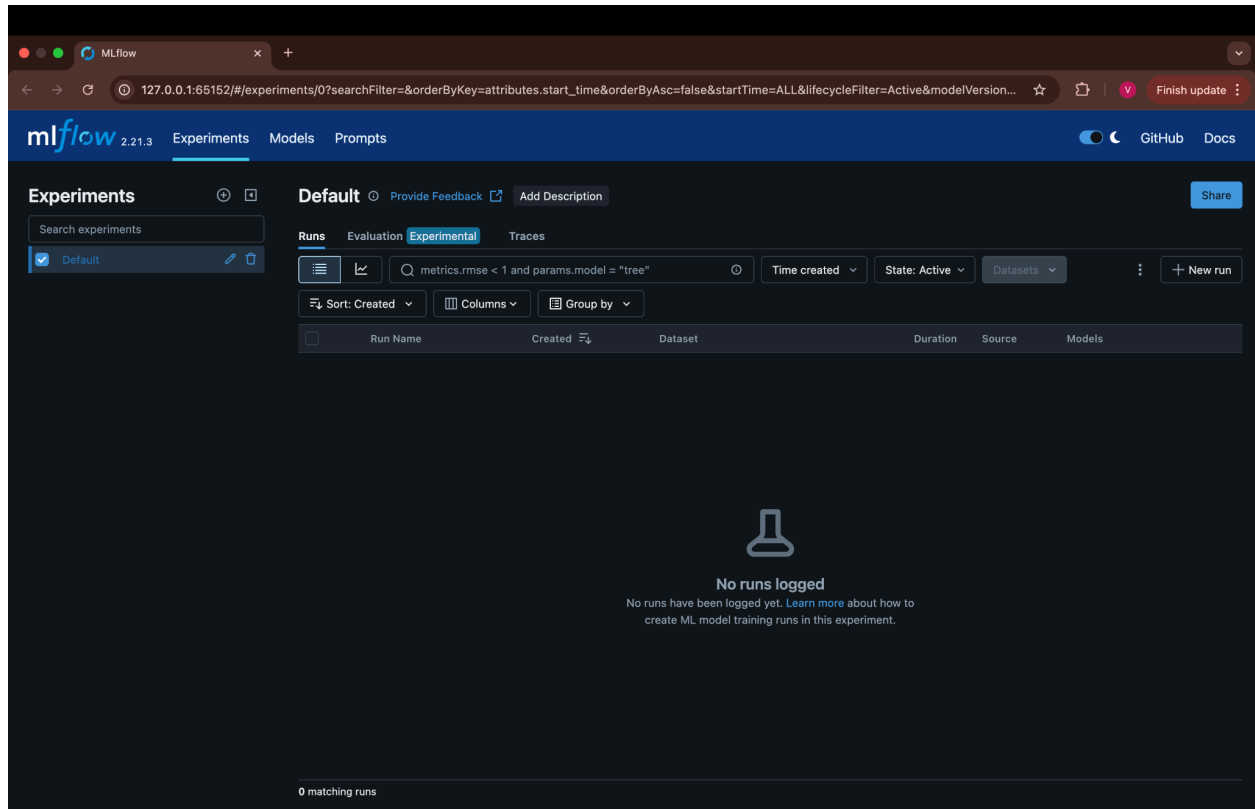
Storage Classes

Cluster

Services

Name	Labels	Type	Cluster IP	Internal Endpoints	External Endpoints	Created ↑
mlflow-service	-	NodePort	10.103.207.234	mlflow-service:5000 TCP mlflow-service:30000 TCP	-	4 minutes ago
kubernetes	component: apiserver provider: kubernetes	ClusterIP	10.96.0.1	kubernetes:443 TCP kubernetes:0 TCP	-	2 days ago

Mlflow service minikube - MIFlow UI



Pods (Replicate 3)

The screenshot shows the Kubernetes Dashboard interface. The left sidebar contains navigation links for Workloads, Cron Jobs, Daemon Sets, Deployments, Jobs, Pods, Replica Sets, Replication Controllers, Stateful Sets, Service, Ingresses, Ingress Classes, Services, Config and Storage, Config Maps, Persistent Volume Claims, Secrets, Storage Classes, and Cluster. The main content area is titled 'Workloads' and displays a list of workloads. The 'Pods' section shows a table of running pods, and the 'Replica Sets' section shows a table of replica sets.

Name	Images	Labels	Node	Status	Restarts	CPU Usage (cores)	Memory Usage (bytes)	Created
miflow-deployment-5d9f94f66f-gzchx	miflow-server	app: miflow pod-template-hash: 5d9f94f66f	minikube	Running	0	-	-	27 seconds ago
miflow-deployment-5d9f94f66f-v7wtw	miflow-server	app: miflow pod-template-hash: 5d9f94f66f	minikube	Running	0	-	-	27 seconds ago
miflow-deployment-5d9f94f66f-ck5p7	miflow-server	app: miflow pod-template-hash: 5d9f94f66f	minikube	Running	0	-	-	4 minutes ago
kubernetes-bootcamp-9bc58d867-z4gg8	gcr.io/google-samples/kubernetes-bootcamp:v1	app: kubernetes-bootcamp pod-template-hash: 9bc58d867	minikube	Running	1	-	-	2 days ago

Name	Images	Labels	Pods	Created
miflow-deployment-5d9f94f66f	miflow-server	app: miflow pod-template-hash: 5d9f94f66f	3 / 3	4 minutes ago

Experiment Tracking

The screenshot shows the MLflow Experiments interface. The left sidebar contains navigation links for Experiments, Models, and Prompts. The main content area is titled 'demo-experiment' and displays a table of runs. The 'Runs' tab is selected, and the table shows the following data:

Run Name	Created	Dataset	Duration	Source	Models
agreeable-bear-246	1 minute ago	-	55ms	ipykern...	-
lyrical-gull-67	7 minutes ago	-	88ms	ipykern...	-
charming-crow-803	8 minutes ago	-	0.6s	ipykern...	-
trusting-dove-547	9 minutes ago	-	69ms	ipykern...	-

4 matching runs