

Lab 4 : Mise en place d'un pipeline CI/CD complet pour un projet Machine Learning

Étape 1 : Créer le dépôt GitHub et connecter le remote

Instructions :

Aller sur GitHub → New Repository → nom : `mlops-lab-01` Copier l'URL HTTPS du dépôt.

- Aller sur GitHub → New Repository → nom : `mlopslab-01`
- Copier l'URL HTTPS du dépôt.

Connecter :

```
git remote add origin https://github.com/<USER>/mlops-lab-01.git  
git branch -M main  
git push -u origin main
```

The screenshot shows a GitHub repository page for 'MLOPS-LABS'. The repository is public and owned by 'AnouarElGorh'. The commit history shows several commits from 'AnouarElGorh' adding PDF documentation and configuration files. The repository has 21 commits, 1 branch, and 0 tags. The 'About' section indicates no description, website, or topics provided. The 'Activity' section shows 0 stars, 0 watching, and 0 forks. The 'Releases' and 'Packages' sections are currently empty.

Étape 2 : Définir les secrets GitHub

Instructions :

Aller dans :

GitHub → Repository → Settings → Secrets and Variables → Actions → New repository secret

The screenshot shows the 'Actions secrets and variables' page on GitHub. At the top, there's a brief description of what secrets and variables are used for. Below that, there are two tabs: 'Secrets' (which is selected) and 'Variables'. The 'Environment secrets' section is shown, stating that the environment has no secrets and providing a 'Manage environment secrets' button. The 'Repository secrets' section is also shown, stating that the repository has no secrets and providing a 'New repository secret' button.

Créer les secrets suivants :

```
PY_VERSION = 3.10 #variable  
F1_GATE_THRESHOLD = 0.70 #variable  
DEMO_SECRET = "CI/CD demo secret for students" #secert  
APP_ENV = staging #variable
```

Secrets Variables

Environment variables

This environment has no variables.

[Manage environment variables](#)

Repository variables

New repository variable

Name	Value	Last updated
APP_ENV	staging	now
F1_GATE_THRESHOLD	0.70	1 minute ago
PY_VERSION	3.10	1 minute ago

Secrets Variables

Environment secrets

This environment has no secrets.

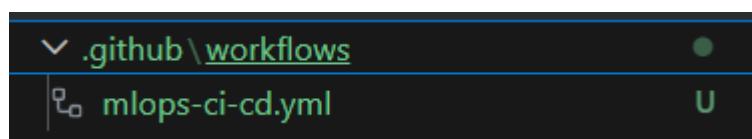
[Manage environment secrets](#)

Repository secrets

New repository secret

Name	Last updated
DEMO_SECRET	now

Étape 3 : Créer le workflow CI/CD



Étape 4 : Commit et push

Instructions :

Aller dans :

GitHub → Actions

← MLOps CI/CD manifest
✓ fea(ci-cd) ajouter de pipeline ci cd #1

Summary

Triggered via push 1 minute ago
AnouarElGorch pushed → 2bd0536 main

Status	Total duration	Artifacts
Success	59s	1

mlops-ci-cd.yml
on: push

```
graph LR; ci[ci] -- "50s" --> cd[cd]; cd -- "3s" --> end
```

Vérifier :

- job **ci** : doit installer Python, exécuter les scripts, uploader les artefacts

ci
succeeded 3 minutes ago in 50s

Step	Time
Run actions/checkout@v4	1s
Run actions/setup-python@v5	0s
Cache pip	0s
Installer dépendances	37s
Restaurer cache DVC	0s
Afficher le DAG DVC	2s
Générer données brutes	0s
Exécuter pipeline ML via DVC	4s
Vérifier métriques (Quality Gate F1)	0s
Upload artefacts ML	1s
Post Restaurer cache DVC	0s
Post Cache pip	2s
Post Run actions/setup-python@v5	0s
Post Run actions/checkout@v4	1s
Complete job	0s

- job **cd** : uniquement sur **main**, doit simuler un déploiement SSH

The screenshot shows the MLOps CI/CD manifest interface. At the top, there's a header with a back arrow, the text "MLOps CI/CD manifest", a green checkmark icon, the pipeline name "fea(ci-cd) ajouter de pipeline ci cd #1", and two buttons: "Re-run all jobs" and "...". Below the header is a sidebar with links: "Summary", "All jobs" (with "ci" and "cd" checked), "Run details", "Usage", and "Workflow file". The main area is titled "cd" and shows a summary: "succeeded 4 minutes ago in 3s". It lists the steps of the pipeline: "Set up job" (1s), "Run actions/checkout@v4" (1s), "Télécharger artefacts validés" (0s), "CD simulé (déploiement SSH)" (0s), "Post Run actions/checkout@v4" (0s), and "Complete job" (0s). There's also a "Search logs" input field and some icons.

Artifacts Produced during runtime

The screenshot shows the "Artifacts" section. The title is "Artifacts" and it says "Produced during runtime". Below is a table with three columns: "Name", "Size", and "Digest". There is one row for "ml-artifacts" which has a size of "6.67 KB" and a digest of "sha256:f72e8f94952d7dee059e72de7c54a22d3a44b54d93...". To the right of the digest are download and delete icons.

Name	Size	Digest
ml-artifacts	6.67 KB	sha256:f72e8f94952d7dee059e72de7c54a22d3a44b54d93...