

# End-to-End MLOps Pipeline – Heart Disease Prediction

- 1 1. Dataset Download: Download Heart Disease UCI dataset and place CSV in data/raw.
- 2 2. EDA: Run notebooks/EDA.ipynb to generate histograms, heatmaps, and class balance plots.
- 3 3. Training: Run python src/training/train.py to train and log experiments using MLflow.
- 4 4. Experiment Tracking: Start MLflow UI using mlflow ui and inspect runs.
- 5 5. Testing & CI/CD: Push code to GitHub to trigger GitHub Actions workflow.
- 6 6. Dockerization: Build docker image using docker build -t heart-api .
- 7 7. API Run: docker run -p 8000:8000 heart-api
- 8 8. Kubernetes: kubectl apply -f k8s/deployment.yaml
- 9 9. Monitoring: Use logs and basic metrics endpoints.
- 10 10. Screenshots: Capture MLflow UI, CI pipeline, Docker run, API response, Kubernetes pods.