MLOps , AI Ops for AI projects, either in cloud or on-premise with portability across hybrid clouds , might be multi cloud portability later on using Open Architecture

https://cloud.google.com/architecture/mlops-continuous-delivery-and-automation-pipelines-in-machine-learning

However, ML systems differ from other software systems in the following ways:

- Team skills: In an ML project, the team usually includes data scientists or ML researchers, who focus on exploratory data analysis, model development, and experimentation. These members might not be experienced software engineers who can build production-class services.
- Development: ML is experimental in nature. You should try different features, algorithms, modeling techniques, and parameter configurations to find what works best for the problem as quickly as possible. The challenge is tracking what worked and what didn't, and maintaining reproducibility while maximizing code reusability.
- Testing: Testing an ML system is more involved than testing other software systems. In addition to typical unit and integration tests, you need data validation, trained model quality evaluation, and model validation.
- Deployment: In ML systems, deployment isn't as simple as deploying an offline-trained ML model as a prediction service. ML systems can require you to deploy a multi-step pipeline to automatically retrain and deploy model. This pipeline adds complexity and requires you to automate steps that are manually done before deployment by data scientists to train and validate new models.
- Production: ML models can have reduced performance not only due to suboptimal coding, but also due to constantly evolving data profiles. In other words, models can decay in more ways than conventional software systems, and you need to consider this degradation. Therefore, you need to track summary statistics of your data and monitor the online performance of your model to send notifications or roll back when values deviate from your expectations.

MLOps level 1: ML pipeline automation

MLOps level 2: CI/CD pipeline automation

https://azure.microsoft.com/en-us/services/machine-learning/mlops/

https://www.h2o.ai/resources/product-brief/h2o-mlops/

https://aws.amazon.com/solutions/implementations/aws-mlops-framework/

Tools:

- DataRobot MLOps

- Azure MLOps
- H20MLOPs
- AWS MLOps