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Register

Weights & Biases Training

2 days (14 hours)

Overview

Weights & Biases is a platform dedicated to tracking and industrializing machine learning experiments.

It allows you to centralize metrics, compare runs, version datasets and models, and structure AI projects collaboratively.

Our training will enable you to master experiment tracking, optimize your hyperparameters, and implement rigorous artifact management.

You will learn how to structure your ML projects, improve reproducibility, and prepare for production.

At the end of this training course, you will be able to efficiently organize and industrialize your ML workflows.

Like all our training courses, this one will introduce you to **the latest stable version** of the technology and its new features.

Objectives

- Understand ML experiment tracking.
- Centralize and compare metrics.
- Version datasets and models with Artifacts.
- Optimize hyperparameters via Sweeps.
- Structure an industrializable ML workflow.

Target audience

- Data scientists
- ML Engineers
- MLOps Engineers
- AI Engineers
- Technical AI Project Managers

Prerequisites

- Basic knowledge of machine learning
- Basic knowledge of Python
- Initial experience in model training (recommended)

Weights & Biases training: Industrializing ML Experiment Monitoring

[Day 1 - Morning]

Fundamentals of Experiment Tracking

- Understanding the role of experiment tracking in ML
- Common Problems Without a Tracking Tool
- Weights & Biases Architecture
- Initializing a Project
- Structure of a run
- Hands-on workshop: Instrumenting a PyTorch script with W&B.

[Day 1 - Afternoon]

Metrics tracking and advanced visualization

- Logging metrics and hyperparameters
- Interactive visualization of curves
- Multi-run comparison
- Table and dashboard management
- Project organization and filters
- Hands-on workshop: Comparison of several training programs and performance analysis.

Artifact management and versioning

- Concept of Artifacts
- Versioning of datasets
- Model versioning
- Traceability of dependencies

- Reproducibility of Experiments
- Hands-on workshop: Versioning a dataset and a trained model.

[Day 2 - Morning]

Hyperparameter Sweeps

- Automatic hyperparameter optimization
- Search strategies (grid, random, Bayesian)
- Configuring sweeps
- Comparative analysis of results
- Experiment automation
- Hands-on workshop: Launching a sweep and analyzing performance.

[Day 2 - Afternoon]

Team collaboration and organization

- User management
- Sharing dashboards
- Best organizational practices
- Structuring ML projects
- Permissions management

Introduction to MLOps industrialization

- Model registry
- ML CI/CD integration
- Deployment and monitoring
- Production best practices
- Transition from prototype to production
- Hands-on workshop: Setting up an experimentation/versioning/registry workflow.

Target companies

This training is intended for both individuals and companies, large or small, wishing to train their teams in a new advanced IT technology or to acquire specific business knowledge or modern methods.

Positioning at the start of training

The positioning at the start of the training complies with Qualiopi quality criteria. Upon final registration, the learner receives a self-assessment questionnaire that allows us to assess their estimated level of proficiency in different types of technologies, as well as their expectations and personal objectives for the upcoming training, within the limits imposed by the selected format. This

The questionnaire also allows us to anticipate certain connection or internal security issues within the company (intra-company or virtual classroom) that could be problematic for the monitoring and smooth running of the training session.

Teaching methods

Practical training: 60% practical, 40% theory. Training materials distributed in digital format to all participants.

Organization

The course alternates between theoretical input from the trainer, supported by examples and reflection sessions, and group work.

Assessment

At the end of the session, a multiple-choice questionnaire is used to verify that the skills have been correctly acquired.

Certification

A certificate will be issued to each trainee who has completed the entire training course.