ml **model_training** **model_development**

Watson Machine Learning

Watson Machine Learning (WML) provides a range of tools and services for you to build, train, test, and deploy models in Cloud Pak for Data.

Depending on what is installed and configured for your deployment, you can use Watson Machine Learning to:

- Build, train, and deploy models from notebooks by using the Watson Machine Learning Python client library or the Watson Machine Learning API.
- Create AutoAI experiments. AutoAI automatically preprocesses your structured data, selects the best estimator for the data, and then generates model candidate pipelines for you to review and compare. Deploy the best-performing pipeline as a machine learning model.
- Run experiments to train complex Deep Learning models in Experiment Builder.
- Deploy your models so that you can score the models and generate predictions.
- Evaluate online deployments (requires Watson OpenScale service).

Training models with Watson Machine Learning

Watson Machine Learning supports training machine learning models with tools that provide automation or autonomy matching your needs. Build a custom model using popular Machine Learning frameworks such

as PyTorch or TensorFlow*), or fully automate model creation and training with AutoAI.

AutoAI enables you to build and deploy machine learning models without coding. Use it as a rapid prototyping tool or as part of your end-to-end machine learning solutions. You can rely on the auto-detection features that analyze the training data, select a model type, and apply algorithms and tuning features, or you can customize the configuration to exercise finer control. Save the best model-candidate pipeline as a deployable model, or save the model code as a notebook so you can review the code and customaize as needed. AutoAI can be a powerful part of your machine learning solution.

Deploying models and other assets with Watson Machine Learning

Using IBM Watson Machine Learning, you can collect and organize all of the dependencies required to bring a a model, script, function or web app from training to production. For example, create a pre-production collaboratve space where you can upload the deployable asset and testing data for validating a deployment before moving it to a production space and putting it to work predicting outcomes based on real-world input data.

Manging Deployments - Official documentation

Extending Watson Machine Learning to govern machine learning assets

As part of your ModelOps strategy, you can extend Watson Machine Learning to include governance features, provided with the Watson

fairness, quality, and drift. Machine learning models require vigilance to make sure they do not stray from their intended mission. Part of the MLOps pipeline is to measure the machine learning outcomes and retrain and update the model and deployment when performance or outcomes fall below the thresholds you establish.

Watson OpenScale also provides tools for creating what-if scenarios to better understand how a model is performing or to find better approaches to solving the business problem. Finally, track and collect the metadata for assets as they move through the AI lifecycle to ensure compliance with governance standard. The combination of Watson Machine Learning and Watson OpenScale gives you the power to create AI solutions that are effective, responsible, and trustworthy.

Last update: October 31, 2023

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