Machine Learning Model Deployment with IBM Cloud Watson Studio

INNOVATION

IBM Cloud Watson Studio provides a comprehensive environment for deploying machine learning models for predictive analysis.

Steps to deploy a machine learning model using IBM Cloud Watson Studio:

1. Login to IBM Cloud.

2. Go to the catalog and create a Watson Studio service in the AI category.

3. Click on 'Get started' to launch the Watson Studio Dashboard.

4. Create a project in IBM Watson Studio Dashboard and assign a Cloud object Storage service to manage datasets. Note: Cloud Object Storage is a storage service in IBM Cloud used to manage datasets for training the ML Model and store required files.

5. Add a Jupyter notebook instance in your project to Develop and Deploy Machine Learning Model. You can either create a blank notebook or import from an existing file or URL.

6. Build a Machine Learning model using the Jupyter notebook instance.

IBM Watson Studio provides various tools for designing, training, and managing machine learning models:

Model Builder: Guides you, step by step, through building a model that uses Spark ML algorithms.

Flow Editor: Presents a graphical view of your model while you build it by combining nodes representing objects or actions.

Experiment Builder: Automates running hundreds of training run while tracking and storing results.

Notebooks: Provide an interactive programming environment for working with data, testing models, and rapid prototyping.

Machine Learning Command Line Interface: Lets you build and work with models in your local environment.

After building and training the model, using Watson Machine Learning to deploy the model, manage the input data, and put the machine learning assets into usage. Watson Machine Learning supports popular frameworks, including TensorFlow, Scikit-Learn, and PyTorch to build and deploy models. Also, the Python client library can be used to work with all of Watson Machine Learning assets in a notebook or use REST API to call methods from the base URLs for the Watson Machine Learning API endpoints.

This is an innovative approach as it provides an integrated and unified self-service experience on IBM Cloud for building a predictive machine learning model, deploying the generated model as an API to be used in applications, testing the model, and then monitoring the deployed model with IBM Watson OpenScale.