Machine Learning Model Deployment With IBM Cloud Watson Studio Project Definition

Project Overview:

Watson machine learning provides a full range of tools and services , so that you can build , train and deploy machine learning models.Watson machine learning supports popular frameworks , including : TensorFlow , Scikit-Learn and PyTorch to build and deploy models . Using IBM Watson machine learning, you can deploy models, scripts, functions and web apps, manage your deployments and prepare your assets to be put into production and to generate prediction and insights. Deploying a machine learning model known as model deployment, simply means to integrate a machine learning model and integrate it into an existing production environment ,where it can take in an input and return an output.

Project Objectives:

Tools used to deploy ML model in Watson Studio:

- ✓ Tensorflow
- ✓ PyTorch
- ✓ Scikit-Learn

Tensorflow:

- Tensorflow is an end to end open source platform for machine learning.
- Tensorflow is a rich system for managing all aspects of a machine learning systems.
- The class focuses on using a particular tensorflow API to develop and train machine learning models.
- **Uses:**

  The Tensorflow platform helps you implement best practices for data automation, model tracking, performance monitoring and model retaining.

PyTorch:

- PyTorch is an open source machine learning framework based on the python programming language and the torch library.
- It is primarily developed by Facebook's AI research group.
- PyTorch providing frictionless development and easy scaling through pre-built images, large scale training on GPUs, ability to run models in a production scale environment.
- **Uses:**

Torch is an open source ML library used for creating deep neural networks and is return in the Lua scripting language.

Scikit-learn:

- Scikit-learn is an open source data analysis library, and the gold standard for Machine Learning (ML) in the Python ecosystem.
- Key concepts and features include: Algorithmic decision-making methods, including: Classification: identifying and categorizing data based on patterns.
- Scikit-Learn, also known as sklearn is a python library to implement machine learning models and statistical modelling.
- Uses:

  Through scikit-learn, we can implement various machine learning models for regression, classification, clustering, and statistical tools for analyzing these models.

Purpose of IBM Watson Studio:

- Watson Studio provides the environment and tools for you to collaborately work on data to solve your business problems.
- We can choose the tools we need to analyze and visualize data, to cleanse and shape data,to ingest streaming data or to create and train machine learning models.

Advantages of IBM Watson Studio:

- Workflow Optimization and Decision Support: with itsability to provide quick,accurate insights and recommendations.
- Watson Assistant streamlines workflows, support decision making and ultimately improves overall productivity.