MERITSHOT

MODEL DEPLOYMENT ASSIGNMENTS

Topic:

Deployment of a Machine Learning Model.

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Objective:

The objective of this assignment is to deploy a machine learning classifier for the IRIS dataset. You will create a deployment pipeline that takes a trained classifier and exposes it as a web service, allowing users to make predictions on new instances of the IRIS dataset.

Tasks:

Model Training:

- Select a machine learning classifier suitable for the IRIS dataset, such as a decision tree, random forest, or support vector machine (SVM).
- Split the dataset into training and testing sets.
- Train the selected classifier on the training set.
- Evaluate the trained classifier's performance on the testing set, using appropriate evaluation metrics like accuracy, precision, recall, etc.

Model Serialization:

- Serialize the trained classifier using a suitable format, such as pickle or joblib. This step will allow us to save the trained model's state for future use.

Web Service Development:

- Choose a web framework or library for building the web service. Some popular options include Flask, Django, or FastAPI.
- Create a web service that exposes a prediction endpoint.

Tasks:

- Implement the necessary code to load the serialized model from Step 3 and use it to make predictions on new instances of the IRIS dataset.
- Test the web service locally to ensure it is functioning correctly.

Deployment:

- Select a cloud platform (e.g., AWS, Google Cloud, Azure) or a suitable hosting service for deploying your web service.
- Deploy your web service on the chosen platform.
- Verify that the deployed web service is accessible and can make predictions by sending sample requests and receiving responses.

Documentation and Presentation:

- Create a document or a presentation summarizing the steps taken to deploy the machine learning classifier for the IRIS dataset.
- Discuss any challenges faced during the deployment process and how you addressed them.
- Reflect on the importance of deploying machine learning models and the potential real-world applications of the deployed IRIS classifier.
- Test the Results of your Classifier, Also add Conditions so that the User cannot Input Vague Inputs while using the Classifier.

Dataset:

The Dataset is about the length and breadth of the sepals and petals to classify the Type of Flower.

Dataset Link:

https://docs.google.com/spreadsheets/d/1CQFgYbUlQ0eJFCON8dwrQNrkpXIlRsBgm-CWeR5nPSQ/edit#gid=0

Submission:

- Submit your code files and any additional resources used for deployment.
- Include the documentation or presentation summarizing the deployment process and the web service's functionality.
- Provide any necessary instructions for running or testing your code.