

Training ML Model on IBM Watson

TEAM ID: PNT2022TMID07488

PROJECT: University Admit Eligibility Predictor

1)Setting up Watson Studio for running Jupyter notebooks

The screenshot shows the IBM Watson Studio interface for a project named 'UAEP-Model-Deployment'. The top navigation bar includes 'Projects / UAEP-Model-Deployment', a 'Launch IDE' dropdown, and several utility icons. Below the navigation bar, there are four tabs: 'Overview', 'Assets', 'Jobs', and 'Manage'. The 'Overview' tab is active, displaying a dashboard with three main sections: 'Assets', 'Resource usage', and 'Project history'. The 'Assets' section shows a 'Regression Models' notebook created 8 minutes ago. The 'Resource usage' section indicates a usage of 9.3 CUH for the month. The 'Project history' section shows a log entry for creating the project. A 'Readme' section is also present with a placeholder for project notes. On the right side, a 'Data in this project' panel is visible with a dashed box for uploading data files.

All assets			
Name		Last modified	↓
	Regression Models Notebook	9 minutes ago Modified by you	⋮
	Admission_Predict_Ver1.1.csv CSV	24 hours ago Modified by you	⋮
	Admission_Predict.csv CSV	24 hours ago Modified by you	⋮

2) Training and saving the model in IBM Watson Machine LearningService

PERSISTING THE MULTIPLE LINEAR REGRESSION MODEL AND DEPLOYING IT IN IBM CLOUD

```
In [60]: #Set Python Version
software_spec_uid = client.software_specifications.get_uid_by_name("runtime-22.1-py3.9")
software_spec_uid
```

```
Out[60]: '12b83a17-24d8-5082-900f-0ab31fbfd3cb'
```

```
In [61]: model_details = client.repository.store_model(model = multiple_lin_reg, meta_props={
    client.repository.ModelMetaNames.NAME: "UAEP_Multiple_Linear_Regression",
    client.repository.ModelMetaNames.TYPE: "scikit-learn_1.0",
    client.repository.ModelMetaNames.SOFTWARE_SPEC_UID: software_spec_uid
})

model_id = client.repository.get_model_id(model_details)
```

```
In [62]: model_id
```

```
Out[62]: '8083e827-e81f-40d1-84ab-20d511771869'
```

Assets:

[Deployments](#) /

Regression-Models

Deployment space for the University Admit Eligibility Predictor project

Overview **Assets** Deployments Jobs Manage

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1 asset

All assets

1

Asset types

Models

1

Assets



Name

Last modified



UAEP_Multiple_Linear_Regression
Model

34 minutes ago
Service



Deployments:

[Deployments](#) /

Regression-Models

Deployment space for the University Admit Eligibility Predictor project

Overview Assets **Deployments** Jobs Manage

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↻

Name	Type	Status	Asset	Last modified	↓
UAEP_Multiple_Linear_Regression_Deployment	Online	🟢 Deployed	UAEP_Multiple_Linear_Regression	35 minutes ago Krishnan S (You)	⋮

3)Testing the created model using the API created for the deployedmodel:

```
import requests

# NOTE: you must manually set API_KEY below using information retrieved from your IBM Cloud account.
API_KEY = "<Your-API-Key>"
token_response = requests.post('https://iam.cloud.ibm.com/identity/token', data={"apikey":
    API_KEY, "grant_type": 'urn:ibm:params:oauth:grant-type:apikey'})
mltoken = token_response.json()["access_token"]

header = {'Content-Type': 'application/json', 'Authorization': 'Bearer ' + mltoken}

# NOTE: manually define and pass the array(s) of values to be scored in the next line
payload_scoring = {"input_data": [{"field": ["GRE Score", "TOEFL Score", "University Rating", "SOP", "LOR ", "CGPA", "Research"]}, {"values": [[326, 110, 2, 3.5, 4, 9.23, 1]]}]}

response_scoring = requests.post('https://us-south.ml.cloud.ibm.com/ml/v4/deployments/uaep_deployment/predictions?version=2022-11-12', json=payload_scoring,
    headers={'Authorization': 'Bearer ' + mltoken})
print("Scoring response")
print(response_scoring.json())

Scoring response
{'predictions': [{'fields': ['prediction'], 'values': [[[0.8448151378927107]]]]}]
```