

TEAM ID: PNT2022TMID35187

PROJECT: University Admit Eligibility Predictor

TRAINING A ML MODEL ON IBM WATSON

1. SETTING UP WATSON STUDIO FOR RUNNING JUPYTER NOTEBOOKS

The screenshot shows the IBM Watson Studio interface. The top navigation bar includes the IBM Watson Studio logo, a search bar, and user account information (Kavya Sridhar's Account, Dallas, KS). The breadcrumb trail shows 'Projects / University Admit Predictor'. The main content area has tabs for 'Overview', 'Assets', 'Jobs', and 'Manage'. The 'Overview' tab is active, displaying three sections: 'Assets' (No assets created with tools yet, View all), 'Resource usage' (For this month in this project, 5 CUH), and 'Project history' (You created project University Admit Predictor Yesterday at 10:53 PM). A 'Readme' section is also visible with a placeholder for project notes.

The screenshot shows the IBM Watson Studio 'Assets' page. The top navigation bar and breadcrumb trail are the same as the previous screenshot. The 'Assets' tab is active, displaying a search bar, 'Import assets' button, and 'New asset' button. The left sidebar shows '2 assets' and 'Asset types' (Data: 1, Notebooks: 1). The main content area shows a table of 'Notebooks' with columns 'Name', 'Language', and 'Last modified'. The table contains one item: 'Model Notebook' (Python 3.9, 9 minutes ago, Modified by you). A 'Data in this project' section on the right shows a placeholder for data files.

Name	Language	Last modified
Model Notebook	Python 3.9	9 minutes ago Modified by you

2. TRAINING AND SAVING THE MODEL ON IBM WATSON MACHINE LEARNING SERVICE

DEPLOYING THE MULTIPLE LINEAR REGRESSION MODEL TO IBM CLOUD

```
In [84]: #Set Python Version
software_spec_uid = client.software_specifications.get_uid_by_name("runtime-22.1-py3.9")
software_spec_uid
```

```
Out[84]: '12b83a17-24d8-5082-900f-0ab31fbfd3cb'
```

```
In [86]: 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 [87]: model_id
```

```
Out[87]: '140f81eb-6494-4a97-bb14-7ab83b2f9600'
```

3. DEPLOYMENTS

Deployments /

Online deployments
1 space

1 x Deployed

Asset type

Space tags

Spaces

Find deployments

Name	Asset type	Status	Space	Copies	Last updated	Created
UniversityPredictore	Model	Deployed	UniversityPredictor	1	Nov 18, 2022, 11:55 PM	Nov 18, 2022, 11:55 PM

4. TESTING THE CREATED MODEL USING THE API CREATED FOR THE DEPLOYED MODEL

UAEP Multiple Linear Regression Model Deployment Test

```
In [2]: import requests

# NOTE: you must manually set API_KEY below using information retrieved from your IBM Cloud account.
API_KEY = "1GCP5Vh5MNgIAv9NqmgEfCbZ0ILfDhuIYRQAGPurry"
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/1b71fd07-9daf-42eb-a620-453452c7e5a7/predictions?version=2022-11-18', json=payload_scoring,
headers={'Authorization': 'Bearer ' + mltoken})
print("Scoring response")
print(response_scoring.json())

Scoring response
{'predictions': [{'fields': ['prediction'], 'values': [[0.8339846446531018]]}]}
```

```
In [3]: probability = response_scoring.json()["predictions"][0]["values"][0][0][0]
probability
```

```
Out[3]: 0.8339846446531018
```