Screenshots for Model Deployment in IBM cloud

ModelBuild - IBM Watson Studio

dataplatform.cloud.ibm.com/analytics/notebooks/v2/2d162f57-e437-42eb-b905-cacbb4670e88?projectid=9f691a6c-16e2-4fca-948d-c0cbc37bbe94&con...

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In [2]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
from sklearn import datasets
from sklearn.preprocessing import MinMaxScaler
from sklearn.decomposition import PCA
```

In [3]:
```
import os, types
import pandas as pd
from botocore.client import Config
import ibm_boto3

def __iter__(self): return 0

# @hidden_cell
# The following code accesses a file in your IBM Cloud Object Storage. It includes your credentials.
# You might want to remove those credentials before you share the notebook.
cos_client = ibm_boto3.client(service_name='s3',
    ibm_api_key_id='NQbemMNI-QTC9xGVYu9x-E2eRRX8tMdmiVWLlilkYGpf',
    ibm_auth_endpoint="https://iam.cloud.ibm.com/oidc/token",
    config=Config(signature_version='oauth'),
    endpoint_url='https://s3.private.us.cloud-object-storage.appdomain.cloud')
```

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In [35]:
```
from ibm_watson_machine_learning import APIClient
wml_credentials = {
                    "url": "https://us-south.ml.cloud.ibm.com",
                    "apikey": "IYhl2VJPcsKa1DvohrhA8BwB8Wk43ShPuQ1VzL0fPMXJ"
                  }
client = APIClient(wml_credentials)
```

In [36]:
```
def guid_from_space_name(client, space_name):
    space = client.spaces.get_details()
    return(next(item for item in space['resources'] if item['entity']["name"] == space_name)['metadata']['id'])
```

In [37]:
```
space_uid = guid_from_space_name(client, 'Project')
print("Space UID = "+space_uid)
```

```
Space UID = f03f09b8-5187-418a-a8b7-b30e0c812034
```

In [38]:
```
client.set.default_space(space_uid)
```

Out[38]: 'SUCCESS'

In [49]:
```
client.software_specifications.list(limit=150)
```

```
spark-mllib_2.4-scala_2.11       55a70f99-7320-4be5-9fb9-9edb5a443af5  base
```

```
software_spec_uid
```

Out[46]: '12b83a17-24d8-5082-900f-0ab31fbfd3cb'

In [51]:
```
model_details = client.repository.store_model(model=Randm_Forest, meta_props = {
    client.repository.ModelMetaNames.NAME:"rainfall_pred",
    client.repository.ModelMetaNames.SOFTWARE_SPEC_UID:software_spec_uid,
    client.repository.ModelMetaNames.TYPE:"scikit-learn_1.0"}
                                                )
model_id = client.repository.get_model_id(model_details)
```

```
    This method is deprecated, please use get_model_id()
```

In [52]:
```
model_id
```

Out[52]: '98a98dd5-9a52-445e-8c52-2813a927085c'

IBM Watson Studio

dataplatform.cloud.ibm.com/ml-runtime/deployments/988a35a4-5d94-4dff-81e8-0fd5e93519f4/implementation?space_id=f03f09b8-5187-418a-a8b7-b3...

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newDeployment

Deployed | Online

API reference | Test

Direct link

Endpoint

https://us-south.ml.cloud.ibm.com/ml/v4/deployments/988a35a4-5d94-4dff-81e8-0fd5e93519f4/predictions?version=20

Bearer <token>

IAM

Predicting using the deployed model.ipynb

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```
import requests

import json
# NOTE: you must manually set API_KEY below using information retrieved from your IBM Cloud account.
API_KEY = "IYhl2VJPcsKa1DvohrhA8BwB8Wk43ShPuQ1VzL0fPMXJ"
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": [["MinTemp", "MaxTemp", "Rainfall", "Evaporation", "Sunshine", "WindGustSpeed", "WindSpeed9am", "WindSpeed3pm", "Humidity9am", "Humidity3pm",
                                             "Pressure9am", "Pressure3pm" ,"Cloud9am", "Cloud3pm", "Temp9am", "Temp3pm"]],
                                   "values": [[13.4, 22.9, 0.6, 0.2, 0.4, 44.0, 20.0, 24.0, 71.0, 22.0, 1007.7, 1007.1, 8, 16.9, 21.8, 21.8]]}]}

response_scoring = requests.post('https://us-south.ml.cloud.ibm.com/ml/v4/deployments/988a35a4-5d94-4dff-81e8-0fd5e93519f4/predictions?version=2022-11-22', json=payload_scoring,
 headers={'Authorization': 'Bearer ' + mltoken})
print("Scoring response")
pred = response_scoring.json()
print(pred)
print("Predicted value: "+ pred['predictions'][0]['values'][0][0])
```

```
Scoring response
{'predictions': [{'fields': ['prediction', 'probability'], 'values': [['No', [0.52, 0.48]]]}]}
Predicted value: No
```