

Team ID	PNT2022TMID33113
Project Name	AI - powered Nutrition Analyzer for Fitness Enthusiasts

Train Model On IBM

```
[ ]: #IBM Deployment
[ ]: !pip install watson-machine-learning-client
```

```
[ ]: !pip install ibm_watson_machine_learning
```

```
[37]: from ibm_watson_machine_learning import APIClient

wml_credentials = {
    "url": "https://eu-gb.ml.cloud.ibm.com",
    "apikey": "6GnaqWQTqFVcFvGeWFlW3wiZ9LALti2pc2kB1WBhOEDk"
}

client = APIClient(wml_credentials)
client
```

Python 3.7 and 3.8 frameworks are deprecated and will be removed in a future release. Use Python 3.9 framework instead.

```
[37]: <ibm_watson_machine_learning.client.APIClient at 0x7f6ea8a4d710>
```

```
[38]: client.spaces.get_details()
```

```
[38]: {'resources': [{'entity': {'compute': [{'crn':
'crn:v1:bluemix:public:pm-
20:eugb:a/dced4fbe290c4320a2c9e11d16e82847:fbdf9d5c-a53a-4882-bd8d-
cdb7b1355676::',
    'guid': 'fbdf9d5c-a53a-4882-bd8d-cdb7b1355676',
    'name': 'Watson Machine Learning-80',
    'type': 'machine_learning'}]},
    'description': '',
    'name': 'AI_Deploy',
    'scope': {'bss_account_id': 'dced4fbe290c4320a2c9e11d16e82847'},
    'stage': {'production': False},
    'status': {'state': 'active'},
    'storage': {'properties': {'bucket_name':
'20c879cb-e65d-40cd-98bb-0fac434fea73',
    'bucket_region': 'eu-gb-standard',
    'credentials': {'admin': {'access_key_id':
'34c946ea2d6d4b2da24cf82ecfa0d0ae',
    'api_key': 'QCysFwrBOqezcrbSQuiFqhiHsB0HCcvh6jzWbRSldLTS',
```

```

      'secret_access_key':
      '4690270aa71694ba3d156d9c478f1f4438406bc118735c48',
      'service_id': 'ServiceId-55a7ed3d-d568-4576-82c7-
      23cf3e18e8e6'},
      'editor': {'access_key_id': '99f62714eaa840b39019589430ebbaa9',
      'api_key': 'Cam5eWYZJJD_rs-mh5M2Rx4VyrGsTJBuj8rgROGNDf7K',
      'resource_key_crn': 'crn:v1:bluemix:public:cloud-object-
      storage:global:a
      /dced4fbe290c4320a2c9e11d16e82847:4ece8f93-a108-4c24-b566-
      307ef867544e::',
      'secret_access_key':
      'c30909553e6385284ba7f59003516ccb04c707108b01a110',
      'service_id': 'ServiceId-2b457a2c-d029-4e17-a7b2-
      82aa64758add'},
      'viewer': {'access_key_id': 'fc68622d97c0415490116085e7699987',
      'api_key': 'dtkpR7JqzzcSd2Bwiq3TRn00Oq7t0bdNSKVnSQAzFEnx',
      'resource_key_crn': 'crn:v1:bluemix:public:cloud-object-
      storage:global:a
      /dced4fbe290c4320a2c9e11d16e82847:4ece8f93-a108-4c24-b566-
      307ef867544e::',
      'secret_access_key':
      '979b331faa703344d62e07c5e00ca613ec50269a7cdb50ce',
      'service_id': 'ServiceId-4996fd9b-9728-4e52-823f-
      e73b942c294c'}},
      'endpoint_url': 'https://s3.eu-gb.cloud-object-
      storage.appdomain.cloud',
      'guid': '4ece8f93-a108-4c24-b566-307ef867544e',
      'resource_crn': 'crn:v1:bluemix:public:cloud-object-
      storage:global:a/dced4 fbe290c4320a2c9e11d16e82847:4ece8f93-a108-4c24-
      b566-307ef867544e::'},
      'type': 'bmcoss_object_storage'}}},
      'metadata': {'created_at': '2022-11-08T18:12:27.758Z',
      'creator_id': 'IBMid-6640044D1T',
      'id': 'a79eec6f-d446-412d-876c-fd891a2d63a2',
      'updated_at': '2022-11-08T18:12:46.250Z',
      'url': '/v2/spaces/a79eec6f-d446-412d-876c-fd891a2d63a2'}}}]

```

```
[39]: client.spaces.list()
```

Note: 'limit' is not provided. Only first 50 records will be displayed if the number of records exceed 50

```

-----
-
ID                                NAME                CREATED
a79eec6f-d446-412d-876c-fd891a2d63a2  AI_Deploy  2022-11-08T18:12:27.758Z  --
-----

```

```
[40]: space_uid = "a79eec6f-d446-412d-876c-fd891a2d63a2"
      space_uid
```

```
[40]: 'a79eec6f-d446-412d-876c-fd891a2d63a2'
```

```
[41]: client.set.default_space(space_uid)
```

```
[41]: 'SUCCESS'
```

```
[42]: client.software_specifications.list()
```

```
-----
-
NAME                                ASSET_ID                                TYPE
default_py3.6                      0062b8c9-8b7d-44a0-a9b9-46c416adcbd9
                                   base
kernel-spark3.2-scala2.12          020d69ce-7ac1-5e68-ac1a-31189867356a
                                   base
pytorch-onnx_1.3-py3.7-edt         069ea134-3346-5748-b513-49120e15d288
                                   base
scikit-learn_0.20-py3.6            09c5a1d0-9c1e-4473-a344-eb7b665ff687
                                   base
spark-mllib_3.0-scala_2.12         09f4cff0-90a7-5899-b9ed-1ef348aebdee
                                   base
pytorch-onnx_rt22.1-py3.9          0b848dd4-e681-5599-be41-b5f6fccc6471
                                   base
ai-function_0.1-py3.6              0cdb0f1e-5376-4f4d-92dd-da3b69aa9bda
                                   base
shiny-r3.6                         0e6e79df-875e-4f24-8ae9-62dcc2148306
                                   base
tensorflow_2.4-py3.7-horovod       1092590a-307d-563d-9b62-4eb7d64b3f22
                                   base
pytorch_1.1-py3.6                 10ac12d6-6b30-4ccd-8392-3e922c096a92
                                   base
tensorflow_1.15-py3.6-ddl         111e41b3-de2d-5422-a4d6-bf776828c4b7
                                   base
runtime-22.1-py3.9                12b83a17-24d8-5082-900f-0ab31fbfd3cb
                                   base
scikit-learn_0.22-py3.6           154010fa-5b3b-4ac1-82af-4d5ee5abbc85
                                   base
default_r3.6                      1b70aec3-ab34-4b87-8aa0-a4a3c8296a36
                                   base
pytorch-onnx_1.3-py3.6            1bc6029a-cc97-56da-b8e0-39c3880dbbe7
                                   base
kernel-spark3.3-r3.6              1c9e5454-f216-59dd-a20e-474a5cdf5988
                                   base
pytorch-onnx_rt22.1-py3.9-edt     1d362186-7ad5-5b59-8b6c-9d0880bde37f
                                   base
```

tensorflow_2.1-py3.6	1eb25b84-d6ed-5dde-b6a5-3fbdf1665666 base
spark-mllib_3.2	20047f72-0a98-58c7-9ff5-a77b012eb8f5 base
tensorflow_2.4-py3.8- horovod	217c16f6-178f-56bf-824a-b19f20564c49 base
runtime-22.1-py3.9-cuda	26215f05-08c3-5a41-a1b0-da66306ce658 base
do_py3.8	295addb5-9ef9-547e-9bf4-92ae3563e720 base
autoai-ts_3.8-py3.8	2aa0c932-798f-5ae9-abd6-15e0c2402fb5 base
tensorflow_1.15-py3.6	2b73a275-7cbf-420b-a912-eae7f436e0bc base
kernel-spark3.3-py3.9	2b7961e2-e3b1-5a8c-a491-482c8368839a base
pytorch_1.2-py3.6	2c8ef57d-2687-4b7d-acce-01f94976dac1 base
spark-mllib_2.3	2e51f700-bca0-4b0d-88dc-5c6791338875 base
pytorch-onnx_1.1-py3.6-edt	32983cea-3f32-4400-8965-dde874a8d67e base
spark-mllib_3.0-py37	36507ebe-8770-55ba-ab2a-eafe787600e9 base
spark-mllib_2.4	390d21f8-e58b-4fac-9c55-d7ceda621326 base
xgboost_0.82-py3.6	39e31acd-5f30-41dc-ae44-60233c80306e base
pytorch-onnx_1.2-py3.6-edt	40589d0e-7019-4e28-8daa-fb03b6f4fe12 base
default_r36py38	41c247d3-45f8-5a71-b065-8580229facf0 base
autoai-ts_rt22.1-py3.9	4269d26e-07ba-5d40-8f66-2d495b0c71f7 base
autoai-obm_3.0	42b92e18-d9ab-567f-988a-4240baled5f7 base
pmml-3.0_4.3	493bcb95-16f1-5bc5-bee8-81b8af80e9c7 base
spark-mllib_2.4-r_3.6	49403dff-92e9-4c87-a3d7-a42d0021c095 base
xgboost_0.90-py3.6	4ff8d6c2-1343-4c18-85e1-689c965304d3 base
pytorch-onnx_1.1-py3.6	50f95b2a-bc16-43bb-bc94-b0bed208c60b base
autoai-ts_3.9-py3.8	52c57136-80fa-572e-8728-a5e7cbb42cde base
spark-mllib_2.4-scala_2.11	55a70f99-7320-4be5-9fb9-9edb5a443af5 base

spark-mllib_3.0	5c1b0ca2-4977-5c2e-9439-ffd44ea8ffe9 base
autoai-obm_2.0	5c2e37fa-80b8-5e77-840f-d912469614ee base
spss-modeler_18.1	5c3cad7e-507f-4b2a-a9a3-ab53a21dee8b base
cuda-py3.8	5d3232bf-c86b-5df4-a2cd-7bb870a1cd4e base
autoai-kb_3.1-py3.7	632d4b22-10aa-5180-88f0-f52dfb6444d7 base
pytorch-onnx_1.7-py3.8	634d3cdc-b562-5bf9-a2d4-ea90a478456b base
spark-mllib_2.3-r_3.6	6586b9e3-ccd6-4f92-900f-0f8cb2bd6f0c base
tensorflow_2.4-py3.7	65e171d7-72d1-55d9-8ebb-f813d620c9bb base
spss-modeler_18.2	687eddc9-028a-4117-b9dd-e57b36f1efa5 base

 --- ---Note: Only first 50 records were displayed. To display more use 'limit' parameter.

```
[44]: software_space_id = client.software_specifications.  
      .get_uid_by_name('tensorflow_rt22.1-py3.9')  
      software_space_id
```

```
[44]: 'acd9c798-6974-5d2f-a657-ce06e986df4d'
```

```
[45]: model_details = client.repository.store_model(model = 'nutrition-  
analyzer.tgz', □
```

```
    meta_props={  
        client.repository.ModelMetaNames.NAME: "NUTRITION  
ANALYZER Model",  
        client.repository.ModelMetaNames.TYPE: 'tensorflow_2.7',  
        client.repository.ModelMetaNames.SOFTWARE_SPEC_UID: software_space  
            _id  
    })
```

```
[46]: model_details
```

```
[46]: {'entity': {'hybrid_pipeline_software_specs': [],  
  'software_spec': {'id': 'acd9c798-6974-5d2f-a657-ce06e986df4d',  
    'name': 'tensorflow_rt22.1-py3.9'},  
  'type': 'tensorflow_2.7'},  
  'metadata': {'created_at': '2022-11-08T19:17:29.295Z',  
    'id': '91696d78-4e29-4bed-896e-5aab006fe825',
```

```
'modified_at': '2022-11-08T19:17:32.722Z',  
'name': 'NUTRITION ANALYZER Model',  
'owner': 'IBMid-6640044D1T',  
'resource_key': 'ef97eafa-bb8c-4f98-a9f8-71a7ee63e3a4',  
'space_id': 'a79eec6f-d446-412d-876c-fd891a2d63a2'},  
'system': {'warnings': []}}
```

```
[49]: model_id = client.repository.get_model_id(model_details)  
      model_id
```

```
[49]: '91696d78-4e29-4bed-896e-5aab006fe825'
```

```
[50]: client.repository.download(model_id, 'NUTRITION_ANALYZER_model.tar.gb')
```

Successfully saved model content to file:
'NUTRITION_ANALYZER_model.tar.gb'

```
[50]: '/content/NUTRITION_ANALYZER_model.tar.gb'
```