

TRAIN THE MODEL ON IBM

Date	10/11/2022
Team ID	PNT2022TMID26023
Project Name	AI-powered Nutrition Analyzer for Fitness Enthusiasts
Maximum Marks	4 Marks

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Projects / NA / Module_NA

In [30]: !pip install watson-machine-learning-client --upgrade

Collecting watson-machine-learning-client
  Downloading watson_machine_learning_client-1.0.391-py3-none-any.whl (538 kB)
    538 kB 18.7 MB/s eta 0:00:01
Requirement already satisfied: lomond in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from watson-machine-learning-client) (0.3.3)
Requirement already satisfied: boto3 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from watson-machine-learning-client) (1.18.21)
Requirement already satisfied: requests in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from watson-machine-learning-client) (2.26.0)
Requirement already satisfied: urllib3 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from watson-machine-learning-client) (1.26.7)
Requirement already satisfied: ibm-cos-sdk in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from watson-machine-learning-client) (2.11.0)
Requirement already satisfied: tqdm in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from watson-machine-learning-client) (4.62.3)
Requirement already satisfied: tabulate in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from watson-machine-learning-client) (0.8.9)
Requirement already satisfied: pandas in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from watson-machine-learning-client) (1.3.4)
Requirement already satisfied: certifi in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from watson-machine-learning-client) (2022.9.24)
Requirement already satisfied: botocore<1.22.0,>=1.21.21 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from boto3->watson-machine-learning-client) (1.21.4)
Requirement already satisfied: jmespath<1.0.0,>=0.7.1 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from boto3->watson-machine-learning-client) (0.10.0)
Requirement already satisfied: s3transfer<0.6.0,>=0.5.0 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from boto3->watson-machine-learning-client) (0.5.0)
Requirement already satisfied: python-dateutil<3.0.0,>=2.1 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from botocore<1.22.0,>=1.21.21->boto3->watson-machine-learning-client) (2.8.2)
Requirement already satisfied: six>=1.5 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from python-dateutil<3.0.0,>=2.1->botocore<1.22.0,>=1.21.21->boto3->watson-machine-learning-client) (1.15.0)
Requirement already satisfied: ibm-cos-sdk-core==2.11.0 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm-cos-sdk->watson-machine-learning-client) (2.11.0)
Requirement already satisfied: ibm-cos-sdk-s3transfer==2.11.0 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm-cos-sdk->watson-machine-learning-client) (2.11.0)
Requirement already satisfied: charset-normalizer==2.0.0 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from requests->watson-machine-learning-client) (2.0.4)
Requirement already satisfied: idna<4,>=2.5 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from requests->watson-machine-learning-client) (3.3)
Requirement already satisfied: pytz>=2017.3 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from pandas->watson-machine-learning-client) (2021.3)
Requirement already satisfied: numpy>=1.17.3 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from pandas->watson-machine-learning-client) (1.19.5)
Installing collected packages: watson-machine-learning-client
Successfully installed watson-machine-learning-client-1.0.391
```

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Projects / NA / Module_NA

In [31]: from ibm_watson_machine_learning import APIClient
        wml_credentials = {
            "url": "https://us-south.ml.cloud.ibm.com",
            "apikey": "E1gd78pjkhlyKwKh3C42ETkeG6_8yCuKMSkb30wSaum2"
        }

        client = APIClient(wml_credentials)

/opt/conda/envs/Python-3.9/lib/python3.9/site-packages/torch/package/_directory_reader.py:17: UserWarning: Failed to initialize NumPy: module compiled against API version 0xe but this version of numpy is 0xd (Triggered internally at /opt/conda/conda-bld/pytorch-base_1658814980981/work/torch/csrc/utils/tensor_numpy.cpp:68.)
  _dtype_to_storage = (data_type(0).dtype: data_type in _storages)

In [32]: 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 [33]: space_uid = guid_from_space_name(client, 'NA')
        print("Space UID : ", space_uid)

Space UID : 8b8f63d5-a9cc-47a5-99b8-e6e418e02b44

In [34]: client.set.default_space(space_uid)

Out[34]: 'SUCCESS'

In [38]: software_spec_uid = client.software_specifications.get_uid_by_name("tensorflow-rt2.1-py3.9")
        software_spec_uid

Out[38]: 'acd9c798-6974-5d2f-a657-ce06e986df4d'

In [41]: client.software_specifications.list()
```

https://dataplatform.cloud.ibm.com/analytics/notebooks/v2/6c815f9d-667d-41c8-8d47-4c14efed078b/view/project@=c22ad71a-a4af-4df3-bdf9-49191c0297c6&context=cpdaas#

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In [41]: 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 0b848d4d-e681-5599-be41-b5f6fcc0c471 base
ai-function_0.1-py3.6 0c0b0f1e-5376-4f4d-92dd-da3b69aa9bda base
shiny-r3.6 0e6e79df-875e-4f34-8ae9-62dccc148306 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
autoai-kb_rt22.2-py3.10 125b6d9a-5b1f-5e0d-972a-b251688ccf40 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 217c16fe-178f-56bf-824a-b19f20564c49 base
runtime-22.1-py3.9-cuda 26215f05-08c3-5a41-a1b0-da66306ce058 base
do_py3.8 295add05-9ef0-547e-9bfa-92ae3963e720 base
autoai-ts_3.8-py3.8 2aa0c932-798f-5ae0-abd6-15e0c2402fb5 base
tensorflow_1.15-py3.6 2b73a275-7c6f-420b-a912-eae7f346e0bc base
kernel-spark3.3-py3.9 2b7961e2-e3b1-5a8c-a491-482c836839a base
pytorch_1.2-py3.6 2c0ef57d-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
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autoai-ts_rt22.2-py3.10 396b2e83-0953-5b86-9a55-7ce1628a406f 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
pytorch-onnx_rt22.2-py3.10 40e73f55-783a-5535-b3fa-0c8b94291431 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-4240ba1ed5f7 base
pmml_3.0.4.3 493bc095-16f1-5bcs-bee8-81b8af80e9c7 base
spark-mllib_2.4-r_3.6 49403dff-92e9-4c87-a3d7-a420021c095 base
xgboost_0.90-py3.6 4ff8d6c2-1343-4c18-85e1-689c965304d3 base
pytorch-onnx_1.1-py3.6 50f95b2a-bc16-430b-bc94-b0b0ed208c60b base
autoai-ts_3.9-py3.8 52c57136-80fa-572e-8728-a5e7cb042cde base
spark-mllib_2.4-scala_2.11 55a70f99-7320-4be5-9fb9-9ed5a443af5 base
spark-mllib_3.0 5c1b0ca2-4977-5c2e-9439-ffd4a8af9fe9 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
runtime-22.2-py3.10-xc 5e8cddff-dba4-5a6a-b8aa-2d4af9864dab base
autoai-kb_3.1-py3.7 632d4b22-10aa-5180-88f0-f52dfb6444d7 base
-----
Note: Only first 50 records were displayed. To display more use 'limit' parameter.

In [42]: model_details = client.repository.store_model(model='nutri-analyzer-model.tgz', meta_props={
    client.repository.ModelMetaNames.NAME: "CNN",
    client.repository.ModelMetaNames.SOFTWARE_SPEC_UID: software_spec_uid,
    client.repository.ModelMetaNames.TYPE: "tensorflow_2.7"})
model_id = client.repository.get_model_id(model_details)

In [43]: import os, types
import pandas as pd
from botocore.client import Config
import boto3

https://datapatform.cloud.ibm.com/projects?context=cpdaas
```

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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='wq0bzE9bWASnEL6XuswnZeQ5_55exh8HK80putx-L51r',
    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')

bucket = 'na-donotdelete-pr-rwpgs131avjqx7'
object_key = 'Dataset.zip'

streaming_body_2 = cos_client.get_object(Bucket=bucket, Key=object_key)['Body']

# Your data file was loaded into a botocore.response.StreamingBody object.
# Please read the documentation of ibm_boto3 and pandas to learn more about the possibilities to load the data.
# ibm_boto3 documentation: https://ibm.github.io/ibm-cos-sdk-python/
# pandas documentation: http://pandas.pydata.org/
software_spec_uid = client.software_specifications.get_uid_by_name("tensorflow_rt22.1-py3.9")
software_spec_uid

Out[43]: 'acd9c798-6974-5d2f-a657-ce06e986df4d'

In [44]: model_id

Out[44]: '889dabeb-a601-4588-af3c-5810c863fc10'

In [45]: client.repository.download(model_id, 'nutrition.tar.gz')

Successfully saved model content to file: 'nutrition.tar.gz'

Out[45]: '/home/ksuser/work/nutrition.tar.gz'
```