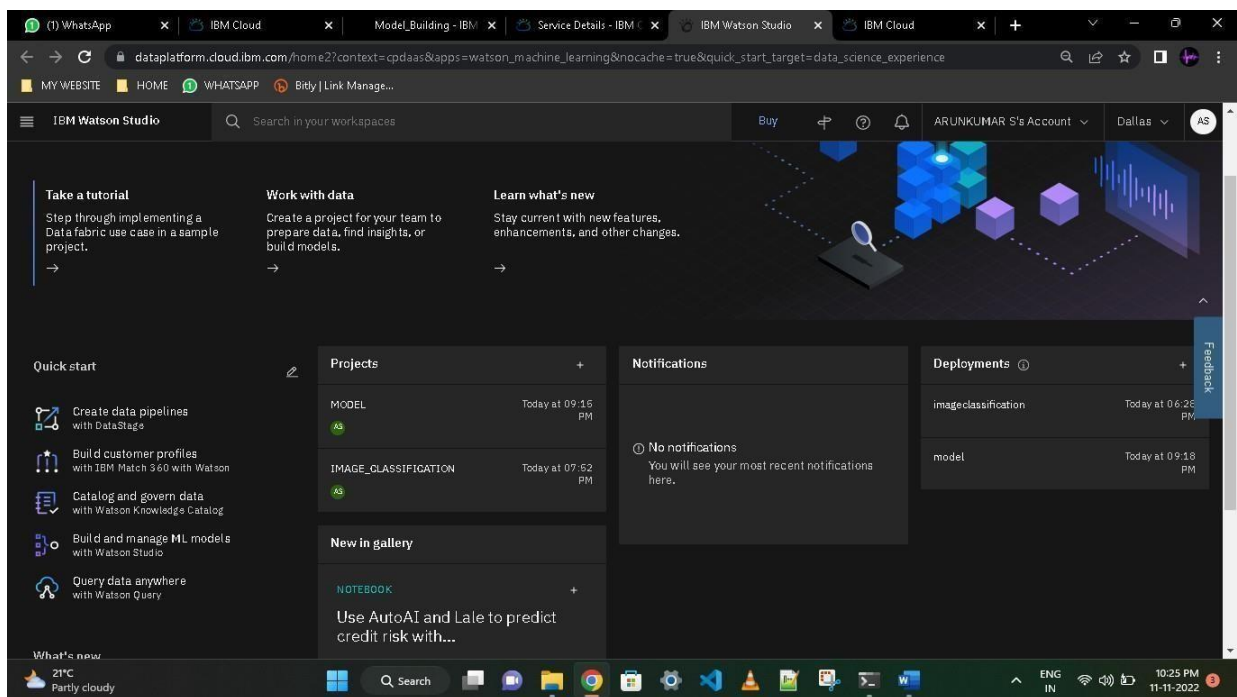


Train Model On IBM

| | |
|--------------|---|
| Date | 17 November 2022 |
| Team ID | PNT2022TMID18640 |
| Project Name | AI-Powered Nutrition Analyzer for Fitness Enthusiasts |



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cloud.ibm.com/services/pm-20/cm%3Av1%3Abluemix%3Apublic%3Apm-20%3Aus-south%3Aa%2Fe877a29349614c2a84759a1df2cc02be%3Aef063387-dfba-4d59-a04...

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Watson Machine Learning-ju


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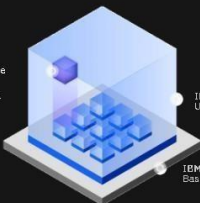
Connections



Watson Machine Learning in Cloud Pak for Data

Use Watson Machine Learning on Cloud Pak for Data to put AI models to work. Deploy, monitor, and update models to get the insights you need from your data modeling.

[Launch in IBM Cloud Pak for Data](#)



IBM Watson Machine Learning in Cloud Pak for Data

IBM Cloud Pak for Data Unifying platform

IBM Cloud Base cloud infrastructure

IBM Watson Machine Learning is part of IBM Cloud Pak for Data and serves as the data science capability of the data fabric architecture.

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Videos

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Data1

Data assets1

Notebooks1

Notebooks

| Name | Language | Last modified | |
|----------------------------|------------|-----------------------------------|--|
| Model_Building Notebook | Python 3.9 | 42 minutes ago Modified by you | |

Items per page: 201-1 of 1 items1 of 1 pages

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IMAGE_CLASSIFICATION

Description

What's the purpose of this project?

Collaborators

ARUNKUMAR S (you)
Admin

Controls

Cloud object storage

89.2 MB used

IBM Cloud account

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ID: e877a29349614c2a84759a1df2cc02

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File Edit View Insert Cell Kernel Help Not Trusted | Python 3.9

Date :01 November 2022
Team ID :PNT2022TMD18332
Project Name : AI-powered Nutrition Analyzer for Fitness Enthusiasts

Data Collection

Download the dataset [here](#)

```
In [55]: pwd
Out[55]: '/home/wsuser/work'
```

```
In [ ]:
```

```
In [179]: !pip install keras==2.7.0
          !pip install tensorflow==2.7.0

Collecting keras==2.7.0
  Using cached keras-2.7.0-py3-none-any.whl (1.3 MB)
Installing collected packages: keras
Attempting uninstall: keras
```

21°C Cloudy 10:21 PM 11-11-2022

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dataplatform.cloud.ibm.com/analytics/notebooks/v2/f5e98c53-c155-4053-86ee-6aae5f67e1bd?projectId=26b5ae93-a59f-484c-802c-0c67d01c80db&context=cpd...

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File Edit View Insert Cell Kernel Help Not Trusted | Python 3.9

```
1->tensorflow==2.6->tensorflow==2.7.0) (3.2.1)
```

```
In [ ]:
```

```
In [73]: from keras.models import Sequential
          from keras.layers import Dense
          from keras.layers import Convolution2D
          from keras.layers import MaxPooling2D
          from keras.layers import Flatten
```

Image Preprocessing

```
In [58]: from keras.preprocessing.image import ImageDataGenerator
```

Image Data Augmentation

```
In [59]: train_datagen = ImageDataGenerator(rescale=1./255, shear_range=0.2, zoom_range=0.2, horizontal_flip=True)
          test_datagen=ImageDataGenerator(rescale=1./255)
```

Applying Image DataGenerator Functionality To Trainset And Testset

21°C Cloudy 10:21 PM 11-11-2022

IBM Watson Studio interface showing a notebook titled "Applying Image DataGenerator Functionality To Trainset And Testset". The notebook content includes Python code for importing libraries, configuring IAM, and downloading a dataset from IBM Cloud Object Storage.

```
test_datagen=ImageDataGenerator(rescale=1./255)

In [60]:
import os, types
import pandas as pd
from botocore.client import Config
import ibm_botocore

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_botocore.client(service_name='s3',
    ibm_api_key_id='9a0271_5799xt1Q[es-3]As5E1omdcW532640UYD2H1',
    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 = 'imageclassification-donotdelete-pr-v1604qevxtyin'
object_key = 'Dataset.zip'

streaming_body_8 = cos_client.get_object(Bucket=bucket, Key=object_key)['Body']

# Your data file was loaded into a botocore.response.StreamingBody object.
```

The right sidebar shows the "Data" panel with a "Files" section and a "Connections" section. The "Files" section indicates that one file can be uploaded at a time, with a maximum file size of 5 GB. The "Connections" section shows a dropdown menu for "Dataset.zip" with an "Insert to code" button.

System tray information: 21°C Cloudy, Search, ENG IN, 10:21 PM, 11-11-2022.

IBM Watson Studio interface showing a Jupyter Notebook environment. The browser tabs include WhatsApp, Cloud Pak for Data - IBM Cloud, Model_Building - IBM Watson Studio, and Service Details - IBM Cloud. The URL is dataplatform.cloud.ibm.com/analytics/notebooks/v2/f5e98c53-c155-4053-86ee-6aae5f67e1bd/projectid=26b5ae93-a59f-484c-802c-0c67d01c80db&context=cpd...

The IBM Watson Studio header shows the user is logged in as ARUNKUMAR S's Account, with a search bar and navigation links for Buy, Home, and My Website.

The notebook interface displays the following code cells:

```
In [61]: from io import BytesIO
import zipfile
unzip=zipfile.ZipFile(BytesIO(streaming_body_8.read()),'r')
file_paths=unzip.namelist()
for path in file_paths:
    unzip.extract(path)
```

```
In [62]: pwd
Out[62]: '/home/wsuser/work'
```

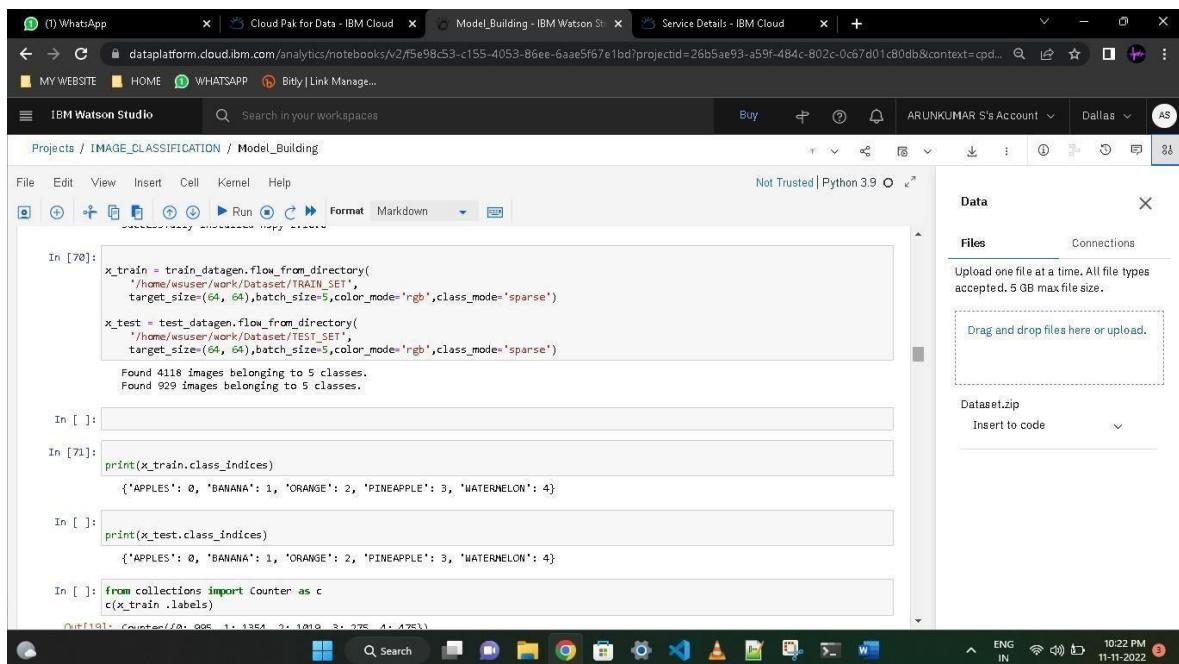
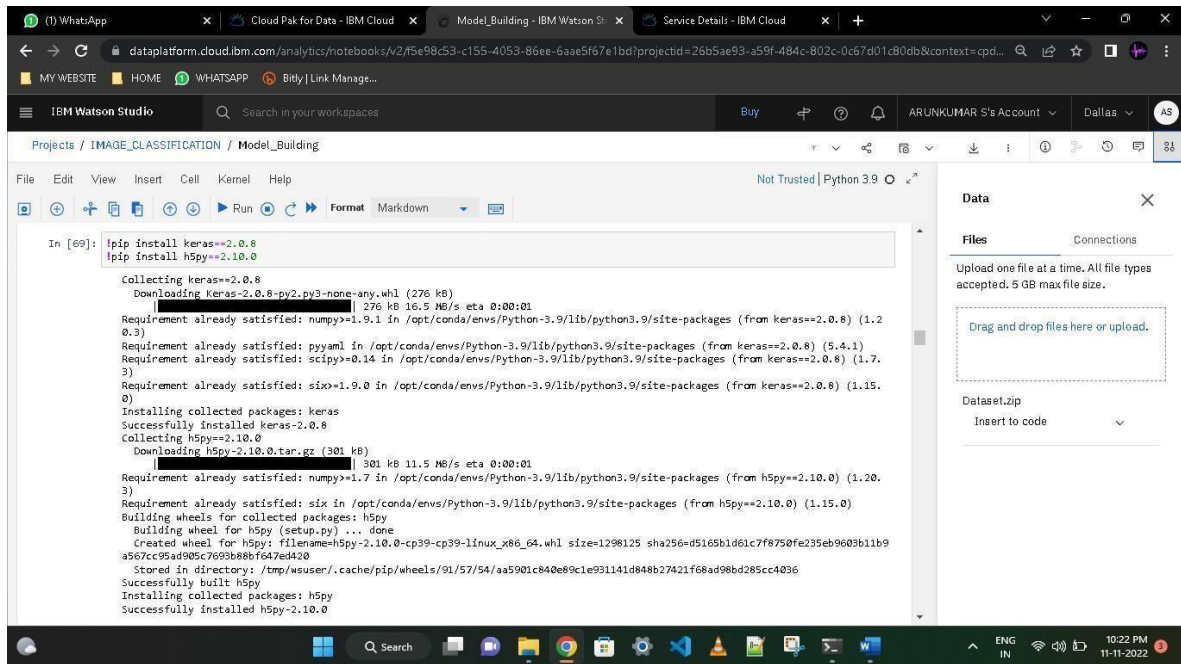
```
In [64]: import os
filenames=os.listdir('/home/wsuser/work/Dataset/TRAIN_SET')
```

```
In [68]: !pip uninstall keras -y
!pip uninstall keras-nightly -y
!pip uninstall keras-Preprocessing -y
!pip uninstall keras-vis -y
!pip uninstall tensorflow -y
!pip uninstall h5py -y

Found existing installation: Keras 2.7.0
Uninstalling keras-2.7.0:
Successfully uninstalled keras-2.7.0
WARNING: Skipping keras-nightly as it is not installed.
Found existing installation: Keras-Preprocessing 1.1.2
Uninstalling Keras-Preprocessing-1.1.2:
Successfully uninstalled Keras-Preprocessing-1.1.2
WARNING: Skipping keras-vis as it is not installed.
```

The right sidebar shows the Data panel with a Files section. It includes instructions: "Upload one file at a time. All file types accepted. 5 GB max file size." and a dashed box for file upload. Below this, it shows "Dataset.zip" with an "Insert to code" button.

The bottom status bar indicates the system is in ENG IN, with a date of 11-11-2022 and time of 10:21 PM.



Model_Building - IBM Watson St

Service Details - IBM Cloud

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File Edit View Insert Cell Kernel Help

Not Trusted | Python 3.9

Model Building

1. Importing The Model Building Libraries

In [75]:

```
import numpy as np
import tensorflow as tf
from tensorflow.keras.models import Sequential
from tensorflow.keras import layers
from tensorflow.keras.layers import Dense,Flatten
from tensorflow.keras.layers import Conv2D,MaxPooling2D,Dropout
```

```
ModuleNotFoundError: Traceback (most recent call last)
/tmp/ksuser/ipykernel_165/3963299783.py in <module>
      1 import numpy as np
      2 import tensorflow as tf
----> 3 from tensorflow.keras.models import Sequential
      4 from tensorflow.keras import layers
      5 from tensorflow.keras.layers import Dense,Flatten

ModuleNotFoundError: No module named 'tensorflow.keras'
```

In [76]:

Data

Files

Connections

Upload one file at a time. All file types accepted. 5 GB max file size.

Drag and drop files here or upload.

Dataset.zip

Insert to code

Search

11-11-2022 10:22 PM

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ras/utifs/__init__.py

2. Initializing The Model

In [78]: model = Sequential()

2022-11-11 11:55:55.729213: W tensorflow/stream_executor/platform/default/dso_loader.cc:64] Could not load dynamic library 'libcuda.so.1'; dlerror: libcuda.so.1: cannot open shared object file: No such file or directory; LD_LIBRARY_PATH: /opt/ibm/dsdrive
r/lib/opt/oracle/lib/opt/conda/envs/Python-3.9/lib/python3.9/site-packages/tensorflow
2022-11-11 11:55:55.729279: W tensorflow/stream_executor/cuda/cuda_driver.cc:263] failed call to cuInit: UNKNOWN ERROR (303)

3. Adding CNN Layers

In [79]: classifier = Sequential()

classifier.add(Conv2D(32, (3, 3), input_shape=(64, 64, 3), activation='relu'))
classifier.add(MaxPooling2D(pool_size=(2, 2)))
classifier.add(Conv2D(32, (3, 3), activation='relu'))
classifier.add(MaxPooling2D(pool_size=(2, 2)))
classifier.add(Flatten())

Data

Files Connections

Upload one file at a time. All file types accepted. 5 GB max file size.

Drag and drop files here or upload.

Dataset.zip

Insert to code

🔍 Search

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ENG IN 10:22 PM 11-11-2022

IBM Watson Studio interface showing a Jupyter Notebook titled "4. Adding Dense Layers". The notebook is running Python 3.9. The code in the cell is:

```
In [80]: classifier.add(Dense(units=128, activation='relu'))
classifier.add(Dense(units=5, activation='softmax'))

In [ ]:

In [81]: classifier.summary()
```

The output shows the model summary for "sequential_1":

| Layer (type) | Output Shape | Param # |
|--------------------------------|--------------------|---------|
| conv2d (Conv2D) | (None, 62, 62, 32) | 896 |
| max_pooling2d (MaxPooling2D) | (None, 31, 31, 32) | 0 |
| conv2d_1 (Conv2D) | (None, 29, 29, 32) | 9248 |
| max_pooling2d_1 (MaxPooling2D) | (None, 14, 14, 32) | 0 |
| flatten (Flatten) | (None, 6272) | 0 |
| dense (Dense) | (None, 128) | 802944 |

The right sidebar shows the "Data" panel with "Files" and "Connections" tabs. The "Files" tab is active, showing a message: "Upload one file at a time. All file types accepted. 5 GB max file size." and a "Dataset.zip" section with an "Insert to code" button.

IBM Watson Studio interface showing a Jupyter Notebook titled "5. Configure The Learning Process". The notebook is running Python 3.9. The code in the cell is:

```
In [82]: classifier.compile(optimizer='adam', loss='sparse_categorical_crossentropy', metrics=['accuracy'])

In [83]: classifier.fit_generator(generator=x_train, steps_per_epoch = len(x_train), epochs=20, validation_data=x_test, validation_steps = len(x_test))
```

The output shows the training progress for Epoch 1/20. A warning message is displayed:

```
WARNING:tensorflow:AutoGraph could not transform <function Model.make_train_function.<locals>.train_function at 0x7f06d4f7cdc0> and will run it as-is.
Please report this to the TensorFlow team. When filing the bug, set the verbosity to 10 (on Linux, 'export AUTOGRAPH_VERBOSITY=10') and attach the full output.
Cause: closure mismatch, requested ('self', 'step_function'), but source function had ()
To silence this warning, decorate the function with @tf.autograph.experimental.do_not_convert
WARNING: AutoGraph could not transform <function Model.make_train_function.<locals>.train_function at 0x7f06d4f7cdc0> and will run it as-is.
```

IBM Watson Studio interface showing a notebook titled "Model_Building" with training progress output.

Projects / IMAGE_CLASSIFICATION / Model_Building

File Edit View Insert Cell Kernel Help

Not Trusted | Python 3.9

```
824/824 [====] - 51s 62ms/step - loss: 0.4291 - accuracy: 0.8407 - val_loss: 0.4409 - val_accuracy: 0.8084
Epoch 2/20
824/824 [====] - 48s 59ms/step - loss: 0.3797 - accuracy: 0.8565 - val_loss: 0.5238 - val_accuracy: 0.8202
Epoch 3/20
824/824 [====] - 48s 58ms/step - loss: 0.3626 - accuracy: 0.8621 - val_loss: 0.4525 - val_accuracy: 0.8073
Epoch 4/20
824/824 [====] - 48s 58ms/step - loss: 0.3440 - accuracy: 0.8691 - val_loss: 0.4087 - val_accuracy: 0.8052
Epoch 5/20
824/824 [====] - 48s 58ms/step - loss: 0.3269 - accuracy: 0.8820 - val_loss: 0.4273 - val_accuracy: 0.8450
Epoch 6/20
824/824 [====] - 47s 57ms/step - loss: 0.3166 - accuracy: 0.8871 - val_loss: 0.5578 - val_accuracy: 0.8418
Epoch 7/20
824/824 [====] - 46s 56ms/step - loss: 0.2916 - accuracy: 0.8898 - val_loss: 0.4375 - val_accuracy: 0.7578
Epoch 8/20
824/824 [====] - 48s 58ms/step - loss: 0.2822 - accuracy: 0.8963 - val_loss: 0.4105 - val_accuracy: 0.8579
Epoch 9/20
824/824 [====] - 46s 56ms/step - loss: 0.2595 - accuracy: 0.8995 - val_loss: 0.4174 - val_accuracy: 0.8525
Epoch 10/20
824/824 [====] - 45s 54ms/step - loss: 0.2508 - accuracy: 0.9034 - val_loss: 0.4238 - val_accuracy: 0.8547
Epoch 11/20
```

Data

Files Connections

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Dataset.zip

Insert to code

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| Name | Last modified |
|--|--------------------------------|
| Dataset1.zip application/x-zip-compressed | 6 hours ago Modified by you |

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About this project

Name

IMAGE_CLASSIFICATION

Description

What's the purpose of this project?

Collaborators

ARUNKUMAR S (you)
Admin

Controls

Cloud object storage

89.2 MB used

IBM Cloud account

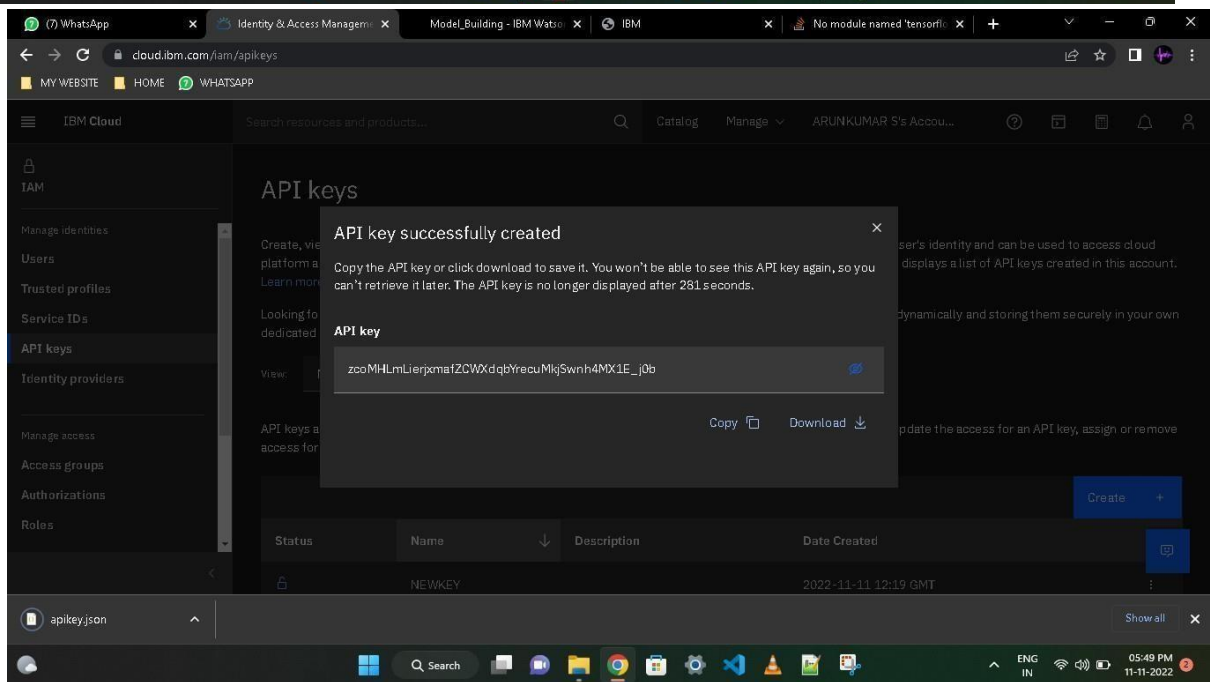
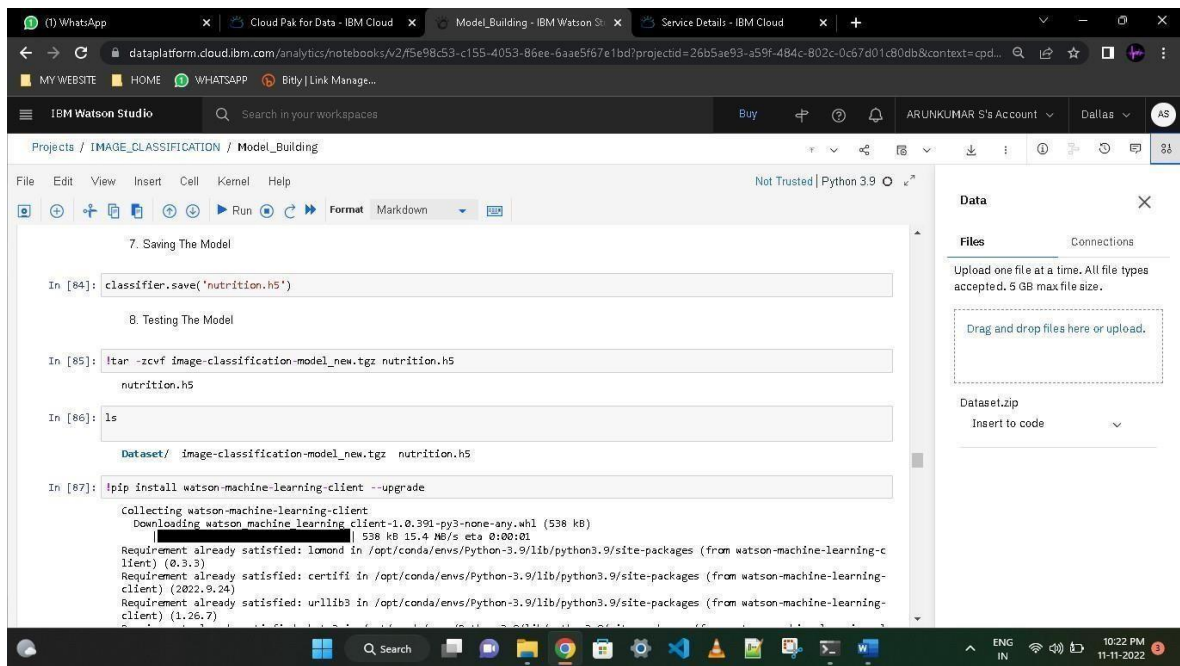
Name: ARUNKUMAR S's Account
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IBM Watson Studio interface showing a Jupyter Notebook environment. The browser address bar shows the URL: `dataplatfom.cloud.ibm.com/analytcs/notebooks/v2/f5e98c53-c155-4053-86ee-6aae5f67e1bd/projectid=26b5ae93-a59f-484c-802c-0c67d01c80db&context=cpl...`

The IBM Watson Studio header includes the search bar, user account (ARUNKUMAR S's Account), location (Dallas), and a profile icon (AS).

The breadcrumb navigation shows: `Projects / IMAGE_CLASSIFICATION / Model_Building`.

The notebook interface includes a menu bar (File, Edit, View, Insert, Cell, Kernel, Help) and a toolbar with icons for running, saving, and other actions. The status bar indicates "Not Trusted | Python 3.9".

The code cell contains the following Python code:

```
In [195]: from ibm_watson_machine_learning import APIClient

wml_credentials={
    "url": "https://us-south.ml.cloud.ibm.com",
    "apikey": "Y8foAQxujPdmjRCFur8QG4VnKtsAhvQHRQZbwIHyoxj"
}
client=APIClient(wml_credentials)

In [184]: client=APIClient(wml_credentials)

In [185]: 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 [217]: space_uid=guid_from_space_name(client,'model')
           print("Space UID = " + space_uid)

           Space UID = f0e78f3c-2a8d-464f-a1bd-bb372d0f1bb9

In [218]: client.set_default_space(space_uid)

Out[218]: 'SUCCESS'

In [219]: client.software_specifications.list()
```

The output of the code execution shows the Space UID: `Space UID = f0e78f3c-2a8d-464f-a1bd-bb372d0f1bb9` and the success message: `Out[218]: 'SUCCESS'`.

The right sidebar shows the "Data" section with "Files" and "Connections" tabs. The "Files" tab is active, displaying a message: "Upload one file at a time. All file types accepted. 5 GB max file size." and a dashed box for file upload. Below this, there is a "Dataset.zip" entry with an "Insert to code" button.

The Windows taskbar at the bottom shows the system clock at 10:22 PM on 11-11-2022, along with various application icons and system status indicators.

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Space Details

Name

imageclassification

Description

No description provided.

Space GUID

d5d873f7-6969-490d-91a2-0dd697b5...

Date created

Nov 11, 2022, 6:21 PM by ARUNKUMAR S (You)

Last updated

Nov 11, 2022, 6:28 PM

Deployment space tags

No tags are set to this space.

Cloud Object Storage

Manage

Storage used

0 Bytes used

Name

Cloud Object Storage-cf

Bucket

04a25128-b6dc-461f-8071-5d162f64c86d

Machine learning service

Watson Machine Learning-ju

Drop files here or browse for files to upload.

Stay on the page until upload completes. Incomplete uploads are cancelled.

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10:27 PM 11-11-2022

IBM Watson Studio interface showing a project named 'IMAGE_CLASSIFICATION' under 'Model_Building'. The main workspace displays a table of data with columns: NAME, ASSET_ID, and TYPE. The table lists various machine learning models and their associated asset IDs and types (e.g., base, model, dataset).

| NAME | ASSET_ID | TYPE |
|-------------------------------|--------------------------------------|------|
| default_py3.6 | 0062b8c9-8b7d-44a0-a9b9-46c416adcb9 | base |
| kernel-spark3.2-scala2.12 | 020469ce-7a41-5e68-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 | 09f4cffe-90a7-5899-b9ed-1ef348aebdee | base |
| pytorch-onnx_rt22.1-py3.9 | 0b848d44-e081-9599-be41-b5f6fccc6471 | base |
| ai-function_0.1-py3.6 | 0c0b0f1e-5376-4f4d-92dd-da3b69a9bda | base |
| shiny-r3.6 | 0e6e73df-875e-4f24-8ae9-62d4c2148306 | 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 |
| autos1-kb_rt22.2-py3.10 | 125b609a-5b1f-5e8d-972a-b251688ccf40 | base |
| runtime_22.1-py3.9 | 12b83a17-2448-5082-900f-0ab31f4f5cb | base |
| scikit-learn_0.22-py3.6 | 154010fa-5b3b-43c1-82af-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-474a5cd5988 | base |
| pytorch-onnx_rt22.1-py3.9-edt | 1d362186-7a5d-5b59-8b6c-9d08680ae37f | base |
| tensorflow_2.1-py3.6 | 1ab25b84-d6ed-5dde-b6a5-3fbd1f665666 | base |
| spark-mllib_3.2 | 20047f72-0a98-58c7-9ff5-a77b012ebf5 | base |
| tensorflow_2.4-py3.8-horovod | 217c16f6-178f-56bf-824a-b19f20504c49 | base |
| runtime_22.1-py3.9-cuda | 26215f05-08c3-5441-a1b0-da66306ce558 | base |
| do_py3.8 | 299addb5-9ef9-547e-9b04-92ae3563e720 | base |
| autos1-ts_3.8-py3.8 | 2aa0c932-798f-5ae9-abd6-15e0c2407b5 | base |
| tensorflow_1.15-py3.6 | 2b73a275-7cbf-420b-a912-eae7f436e0bc | base |
| kernel-spark3.3-py3.9 | 2b7961e2-e3b1-5a8c-a912-482c836839a | base |

IBM Watson Studio interface showing a project named 'IMAGE_CLASSIFICATION' under 'Model_Building'. The main workspace displays a Jupyter Notebook with code for interacting with the IBM Watson Machine Learning API. The code includes a function to get software specifications by name and a command to install the 'ibm_watson_machine_learning' package.

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

```
In [220]: software_spec_uid = client.software_specifications.get_uid_by_name("default_py3.6")
          software_spec_uid

Out[220]: '0062b8c9-8b7d-44a0-a9b9-46c416adcb9'
```

```
In [ ]:
```

```
In [ ]:
```

```
In [222]: pip install ibm_watson_machine_learning

Requirement already satisfied: ibm_watson_machine_learning in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (1.0.257)
Requirement already satisfied: importlib-metadata in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm_watson_machine_learning) (4.8.2)
Requirement already satisfied: tabulate in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm_watson_machine_learning) (0.8.9)
Requirement already satisfied: lmonad in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm_watson_machine_learning) (0.3.3)
Requirement already satisfied: packaging in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm_watson_machine_learning) (21.3)
Requirement already satisfied: ibm-cos-sdk==2.11.* in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm_watson_machine_learning) (2.11.0)
Requirement already satisfied: urllib3 in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm_watson_machine_learning) (1.26.7)
Requirement already satisfied: requests in /opt/conda/envs/Python-3.9/lib/python3.9/site-packages (from ibm_watson_machine_learning) (2.26.0)
```


IBM Watson Studio interface showing a Jupyter Notebook environment. The browser tabs include WhatsApp, Cloud Pak for Data - IBM Cloud, Model_Building - IBM Watson St..., and Service Details - IBM Cloud. The URL is dataplatform.cloud.ibm.com/analytics/notebooks/v2/f5e98c53-c155-4053-86ee-6aae5f67e1bd/projectid=26b5ae93-a59f-484c-802c-0c67d01c80db&context=cpd.... The IBM Watson Studio header shows the user ARUNKUMAR S's Account and location Dallas.

The notebook is titled "Projects / IMAGE_CLASSIFICATION / Model_Building". The code in the notebook is as follows:

```
In [ ]: client.repository.download(model_id, 'my_model.tar.gz')

In [ ]: from keras.models import load_model
        from keras.preprocessing import image

In [ ]: model=load_model("nutrition.h5")

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]: from tensorflow.keras.models import load_model
        from keras.preprocessing import image
        model = load_model("nutrition.h5")

In [ ]: import numpy as np
        x = image.img_to_array(img)
```

The right sidebar shows the "Data" section with "Files" and "Connections" tabs. The "Files" tab indicates "Upload one file at a time. All file types accepted. 5 GB max file size." and provides a "Drag and drop files here or upload." area. Below this, "Dataset.zip" is listed with an "Insert to code" button.

The bottom status bar shows the system temperature as 21°C Humid, the time as 10:23 PM, and the date as 11-11-2022.

IBM Watson Studio interface showing a Jupyter Notebook for image classification.

Browser Tabs: WhatsApp, Cloud Pak for Data - IBM Cloud, Model_Building - IBM Watson S..., Service Details - IBM Cloud.

URL: dataplatform.cloud.ibm.com/analytics/notebooks/v2/f5e98c53-c155-4053-86ee-6aae5f67e1bd/projectid=26b5ae93-a59f-484c-802c-0c67d01c80db&context=cpd...

IBM Watson Studio Header: Search in your workspaces, Buy, ARUNKUMAR S's Account, Dallas, AS.

Projects: IMAGE_CLASSIFICATION / Model_Building

File Edit View Insert Cell Kernel Help

Code Input:

```
In [ ]:
from tensorflow.keras.models import load_model
from keras.preprocessing import image
model = load_model("nutrition.h5")

In [ ]:
import numpy as np
x = image.img_to_array(img)
x = np.expand_dims(x,axis = 0)
predict_x=model.predict(x)
classes_x=np.argmax(predict_x,axis=-1)
classes_x

1/1 [=====] - 0s 290ms/step

Out[58]: array([0])

In [ ]:
index=['APPLES', 'BANANA', 'ORANGE', 'PINEAPPLE', 'WATERMELON']
result=str(index[classes_x[0]])
result
```

Data Panel:

- Files:** Upload one file at a time. All file types accepted. 5 GB max file size. Drag and drop files here or upload.
- Connections:**
- Dataset.zip:** Insert to code

System Tray: 21°C Humid, Search, ENG IN, 10:23 PM 11-11-2022

Cloud Pak for Data services

Launch Cloud Pak for Data

| Name | Group | Location | Product | Status | Tags |
|----------------------------|---------|----------|-------------------------|--------|------|
| Cloud Object Storage-of | Default | Global | Cloud Object Storage | Active | |
| Watson Studio-ot | Default | Dallas | Watson Studio | Active | |
| Watson Machine Learning-ju | Default | Dallas | Watson Machine Learning | Active | |

Items per page: 25 1-3 of 3 items 1 1 of 1 page

Buckets

Buckets serve as containers for objects, and can be individually configured in terms of their location, resiliency, billing rates, security, and object lifecycle rules.

Create bucket

| Name | Public access | Location | Storage class | Created |
|---|---------------|----------|---------------|--------------------|
| 04a25128-b6dc-461f-8071-5d162f64c86d | No | us-south | Standard | 2022-11-11 6:21 PM |
| b093cbba-2293-4e6b-b5c1-e47c74f2a51c | No | us-south | Standard | 2022-11-11 9:18 PM |
| imageclassification-donotdelete-pr-v1604oqevxtyin | No | us-geo | Standard | 2022-11-11 3:44 PM |
| model-donotdelete-pr-wkmi3rbetzs49 | No | us-geo | Standard | 2022-11-11 9:12 PM |