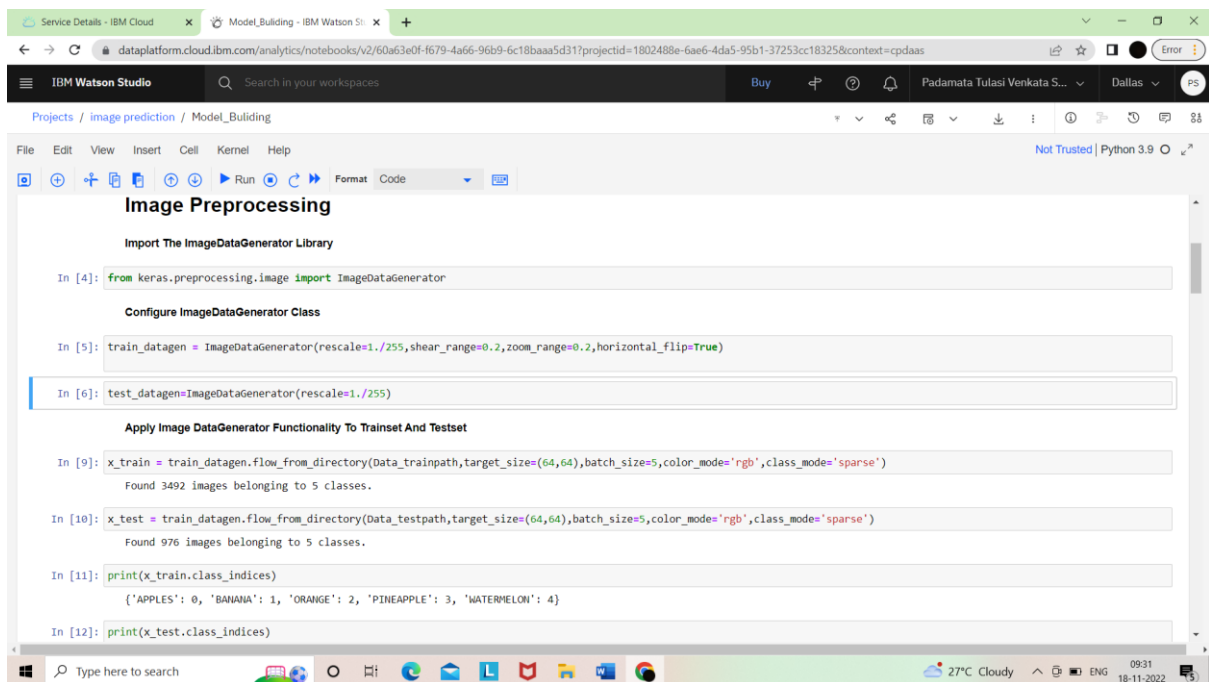


TOPIC : AI powered nutrition analyzer for fitness enthusiasts

Train Model On IBM

Login to ibm cloud and create ibm Watson studio to train the model on ibm. Copy the model building file & paste it in notebook and run the file in notebook.



The screenshot shows the IBM Watson Studio interface with a notebook titled 'Image Preprocessing'. The notebook contains the following code cells:

```
In [4]: from keras.preprocessing.image import ImageDataGenerator

Configure ImageDataGenerator Class

In [5]: train_datagen = ImageDataGenerator(rescale=1./255, shear_range=0.2, zoom_range=0.2, horizontal_flip=True)

In [6]: test_datagen = ImageDataGenerator(rescale=1./255)

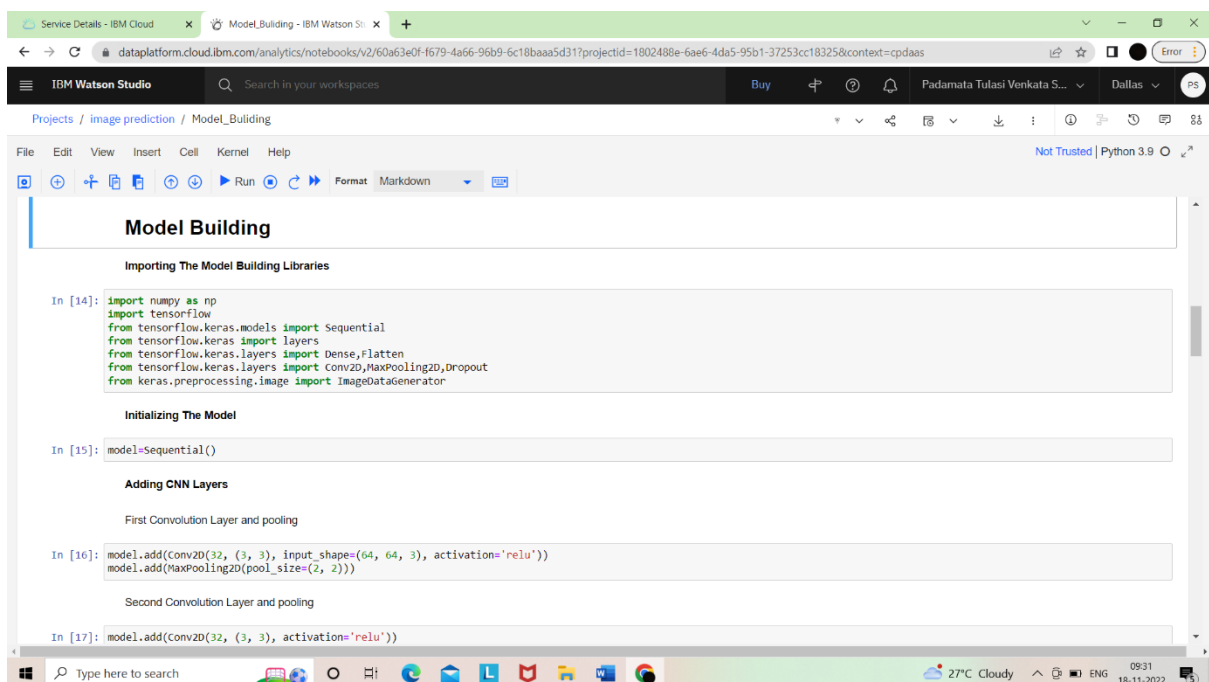
Apply Image DataGenerator Functionality To Trainset And Testset

In [9]: x_train = train_datagen.flow_from_directory(Data_trainpath, target_size=(64, 64), batch_size=5, color_mode='rgb', class_mode='sparse')
Found 3492 Images belonging to 5 classes.

In [10]: x_test = train_datagen.flow_from_directory(Data_testpath, target_size=(64, 64), batch_size=5, color_mode='rgb', class_mode='sparse')
Found 976 images belonging to 5 classes.

In [11]: print(x_train.class_indices)
{'APPLES': 0, 'BANANA': 1, 'ORANGE': 2, 'PINEAPPLE': 3, 'WATERMELON': 4}

In [12]: print(x_test.class_indices)
```



The screenshot shows the IBM Watson Studio interface with a notebook titled 'Model Building'. The notebook contains the following code cells:

```
In [14]: import numpy as np
import tensorflow
from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import layers
from tensorflow.keras.layers import Dense, Flatten
from tensorflow.keras.layers import conv2d, MaxPooling2D, Dropout
from keras.preprocessing.image import ImageDataGenerator

Initializing The Model

In [15]: model = Sequential()

Adding CNN Layers

First Convolution Layer and pooling

In [16]: model.add(Conv2D(32, (3, 3), input_shape=(64, 64, 3), activation='relu'))
model.add(MaxPooling2D(pool_size=(2, 2)))

Second Convolution Layer and pooling

In [17]: model.add(Conv2D(32, (3, 3), activation='relu'))
```

Service Details - IBM Cloud x Model_Building - IBM Watson Studio x

datapatform.cloud.ibm.com/analytics/notebooks/v2/60a63e0f-f679-4a66-96b9-6c18baa5d31?projectId=1802488e-6ae6-4da5-95b1-37253cc18325&context=cpdaas

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Projects / image prediction / Model_Building

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Test The Model

```
In [24]: from tensorflow.keras.models import load_model
        from keras.preprocessing import image
        final_model = load_model("nutrition.h5")

In [25]: from tensorflow.keras.utils import img_to_array


In [26]: img = tensorflow.keras.utils.load_img("/content/drive/MyDrive/Nutrition Image Analysis using CNN and Rapid API/Nutrition Analysis Using Image Classification/Flask/sample_images
        x = img_to_array(img)
        x = np.expand_dims(x, axis = 0)
        pred = np.argmax(final_model.predict(x),axis=1)
        pred

1/1 [=====] - 0s 101ms/step

Out[26]: array([2])

In [27]: index=['APPLES', 'BANANA', 'ORANGE', 'PINEAPPLE', 'WATERMELON']
        result=index[pred[0]]
        result

Out[27]: 'ORANGE'

In [28]: img
Out[28]: 
```

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