Project Documentation

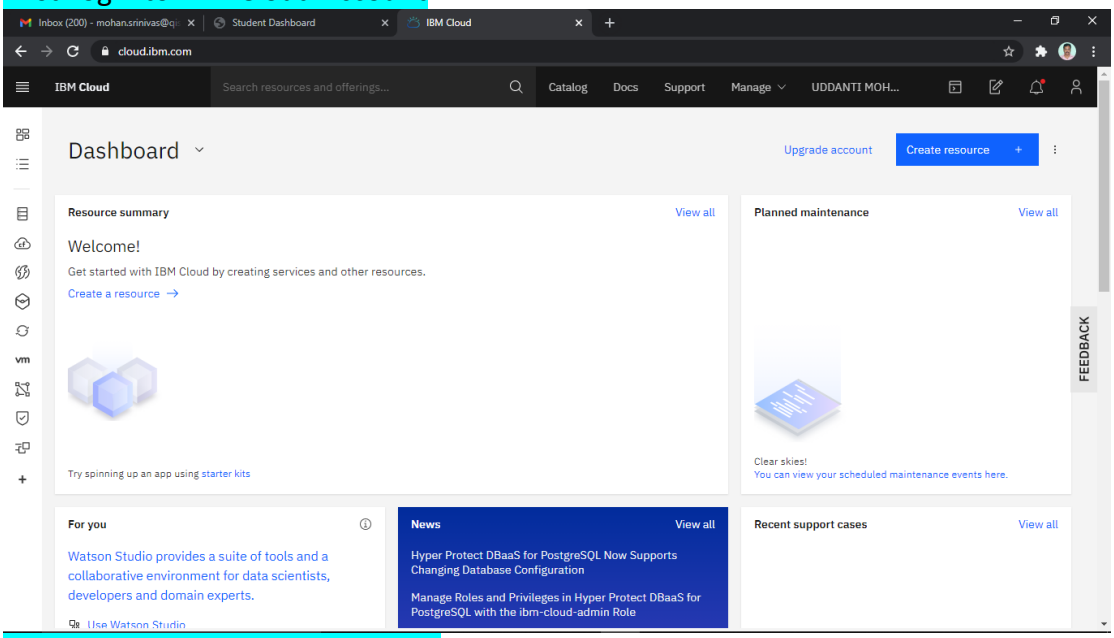
Project Title: Classify Images with IBM Watson Visual Recognition

1. IBM Watson Visual Recognition

Introduction to IBM Watson Visual Recognition System

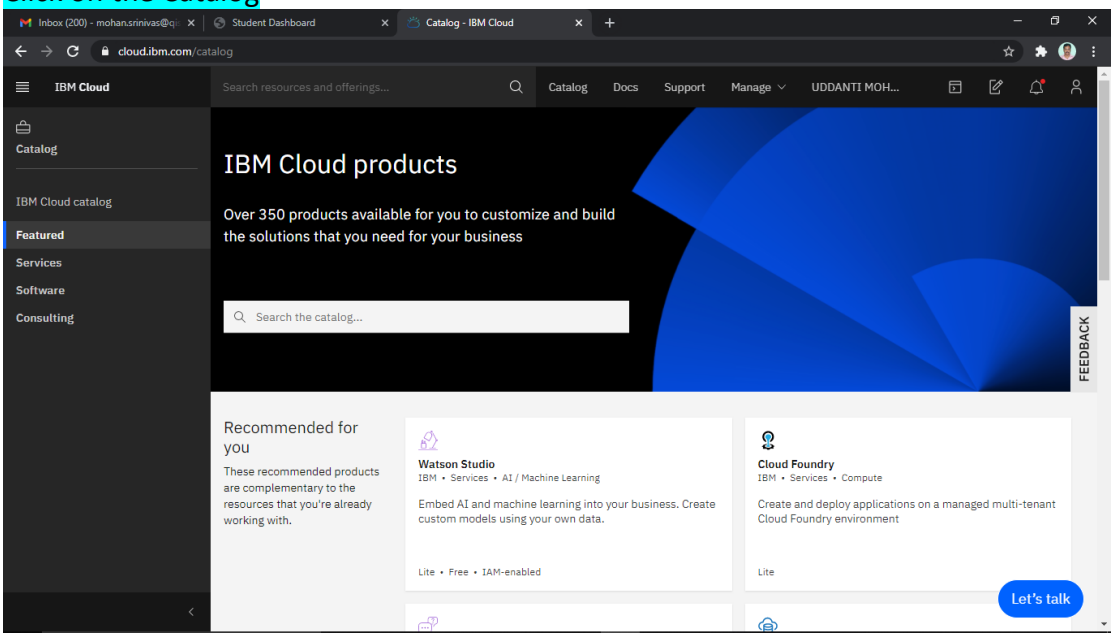
The IBM Watson Visual Recognition service uses learning algorithms to analyze images for content such as objects, scenes, and faces. Come learn how to create a Watson Visual Recognition modeler to automatically train a model to classify images for scenes, objects, or your custom content. We will explore a few examples of applying visual recognition models and accessing those models through external applications.

First Login to IBM Cloud Account

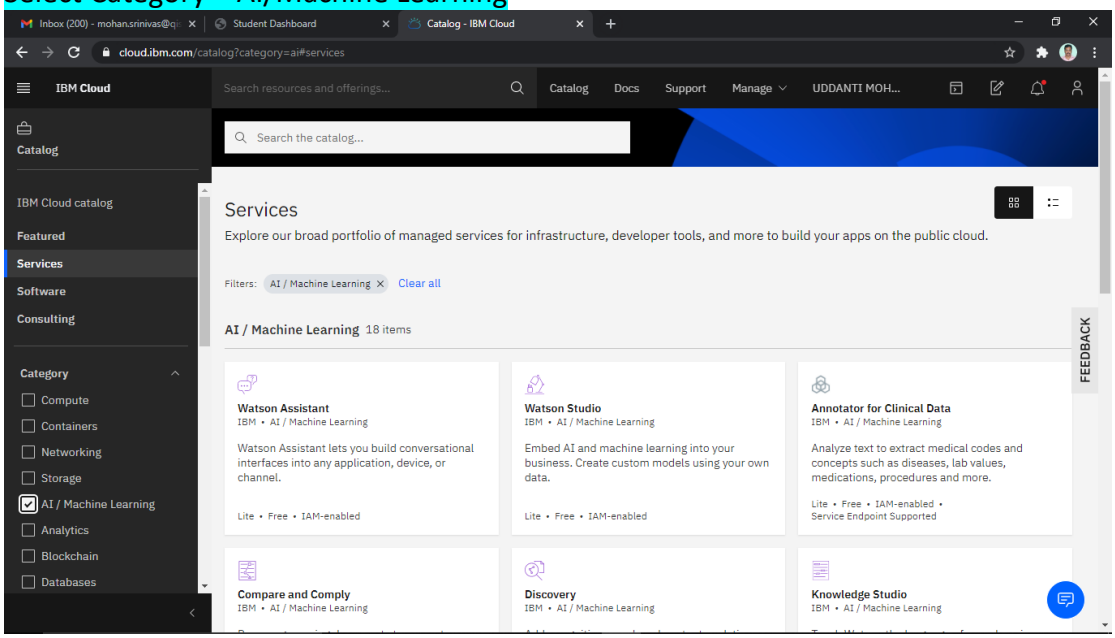


Use Watson Studio – Cloud based

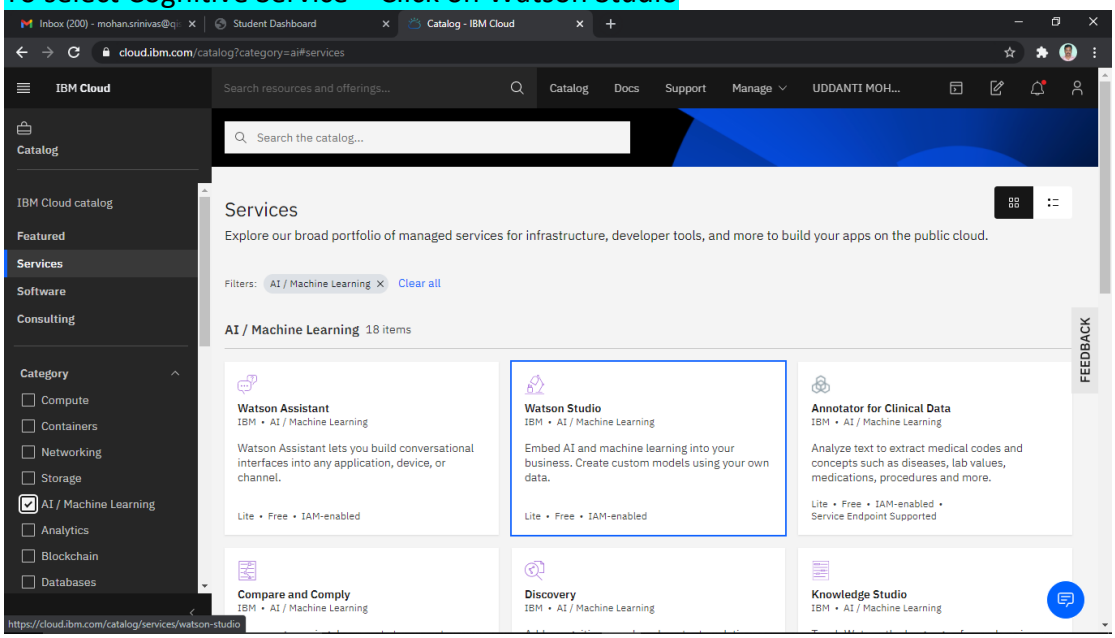
Click on the Catalog



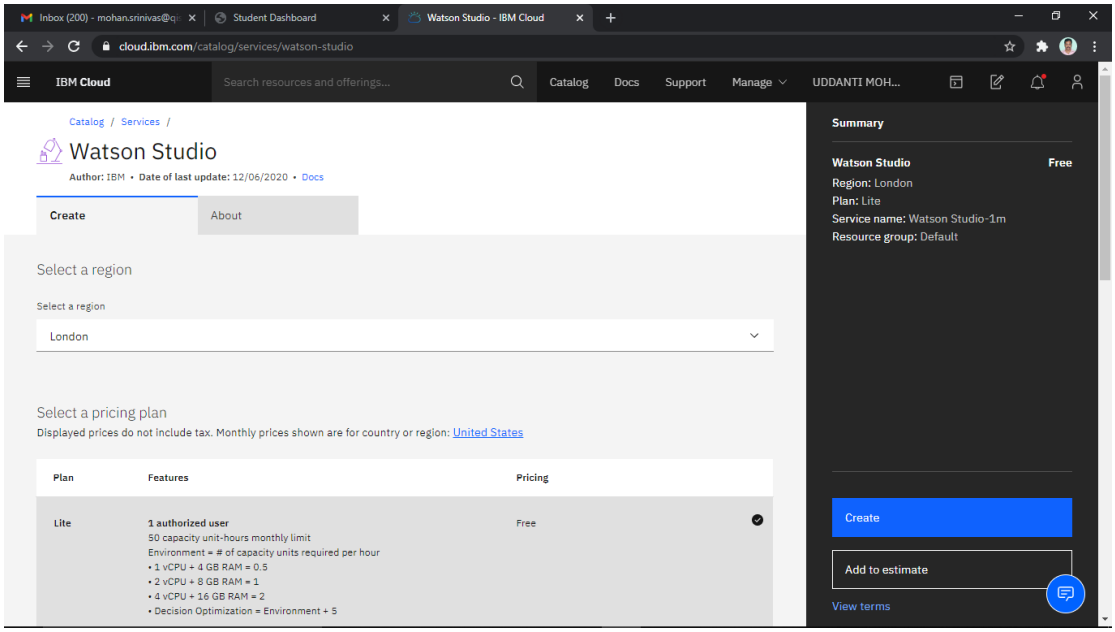
Click Services
Select Category – AI/Machine Learning



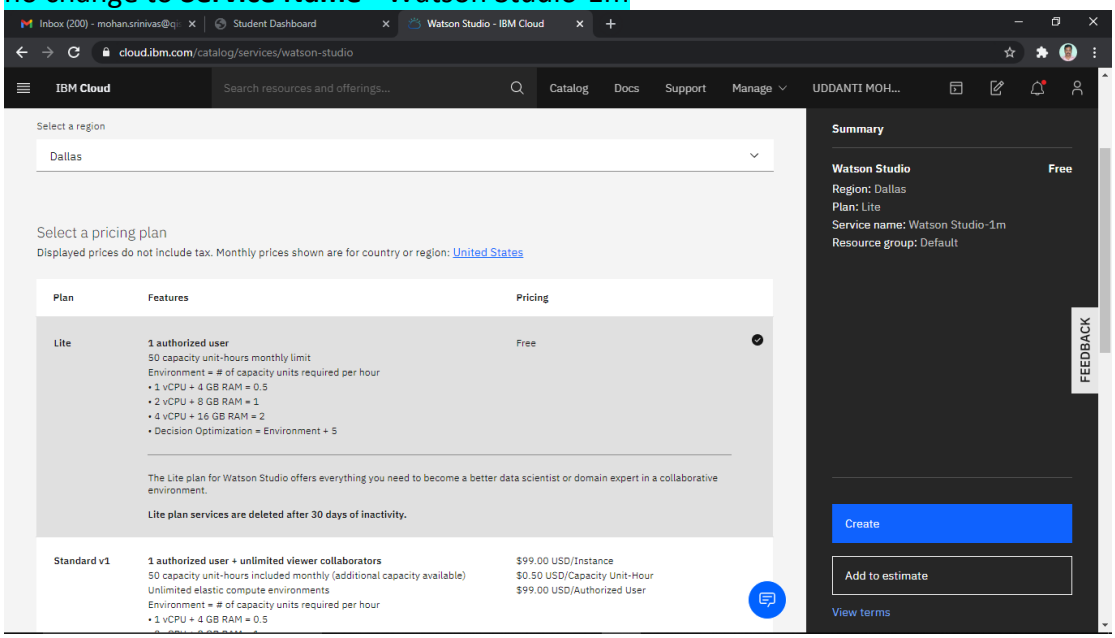
To select Cognitive Service – Click on Watson Studio



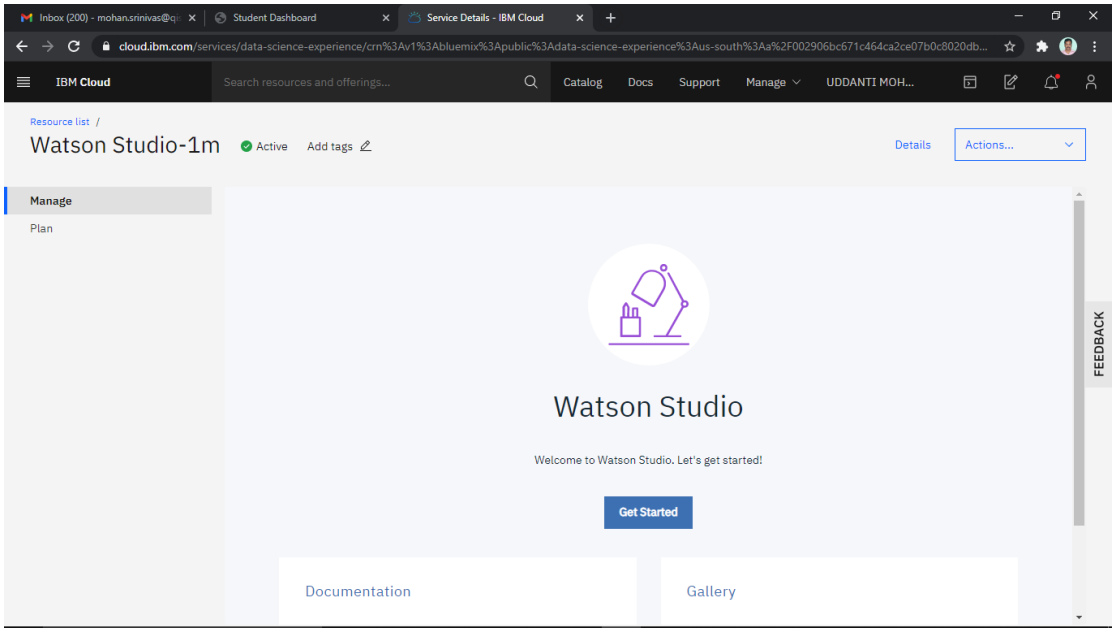
After Clicking on Watson Studio



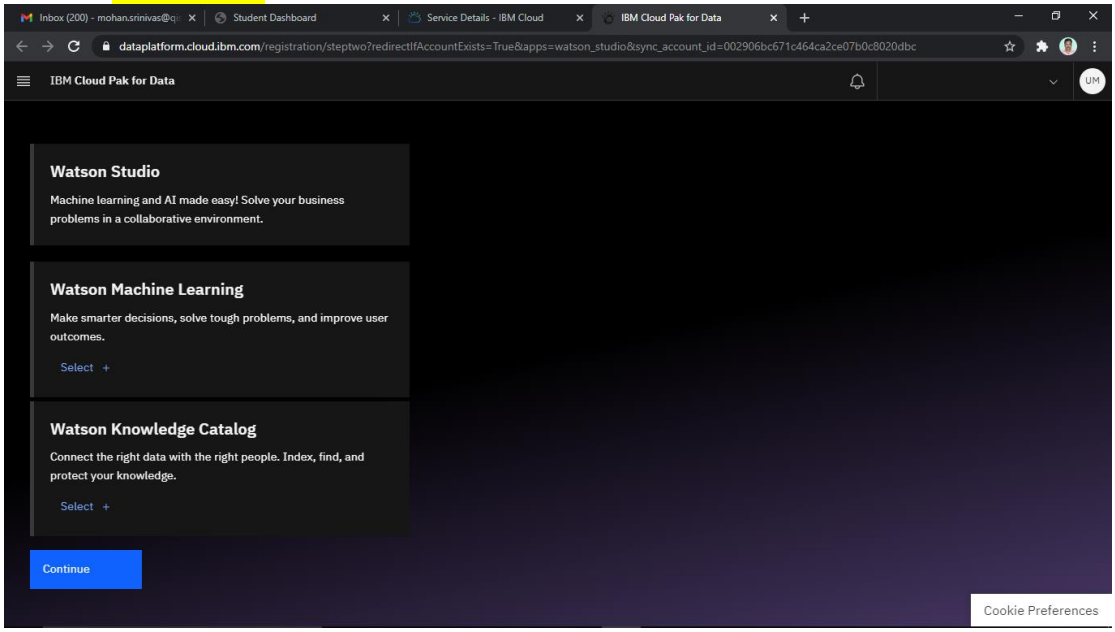
Under Create Tab
Select **Region as Dallas** under **Lite Plan**
no change to **Service Name** - Watson Studio-1m



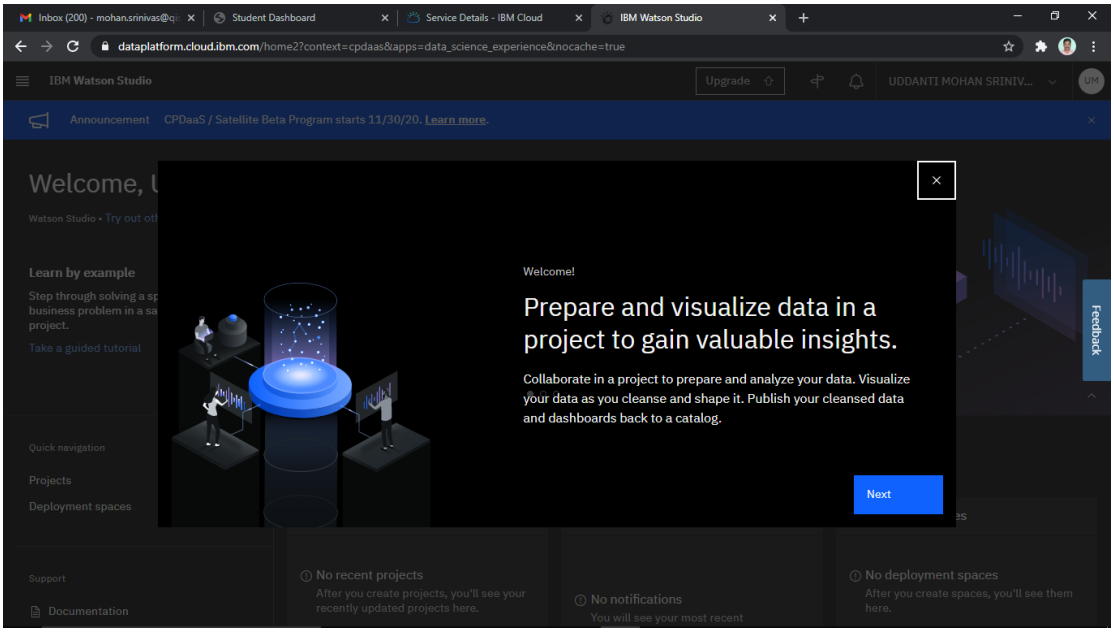
Click on **Create**
This create a new Watson Studio Service.

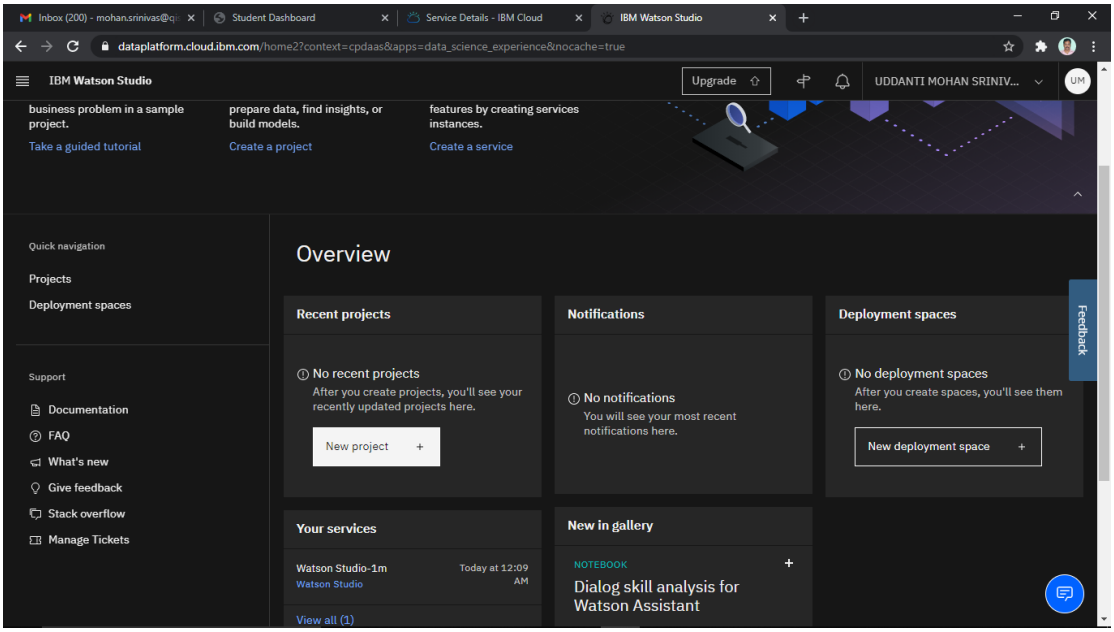


Click on **Get Started** button

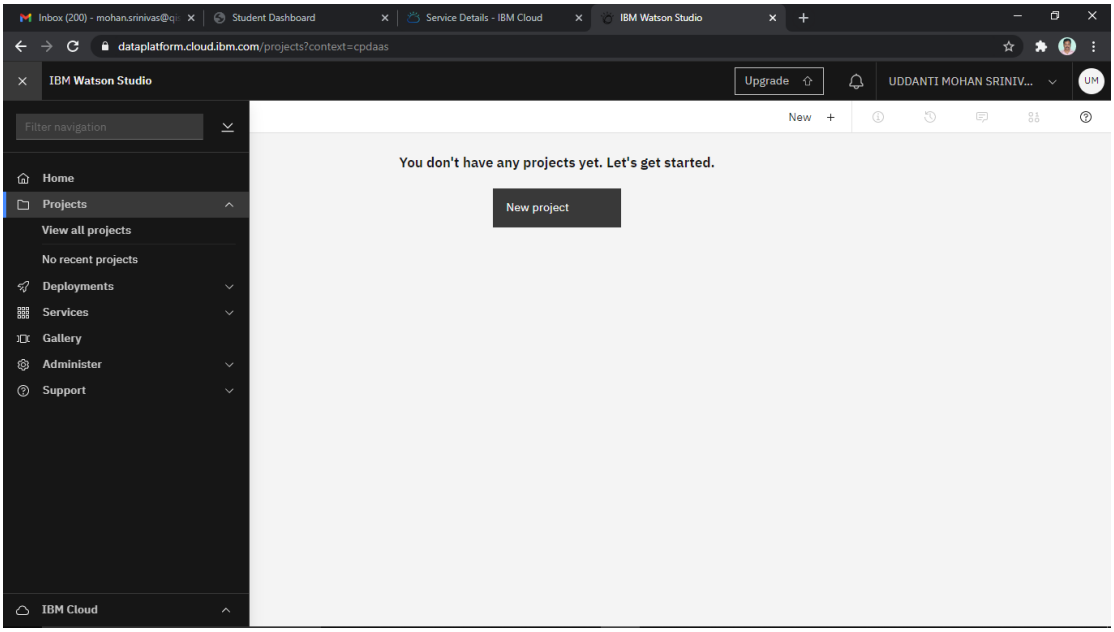


Click on Continue and in the next window Click on IBM Cloud Park for Data

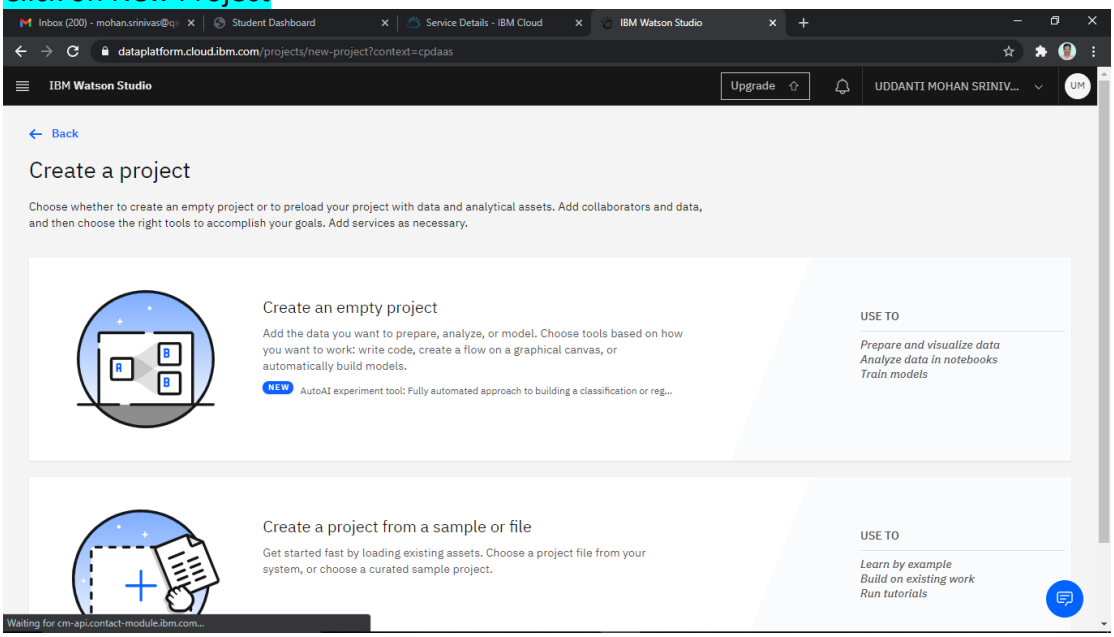




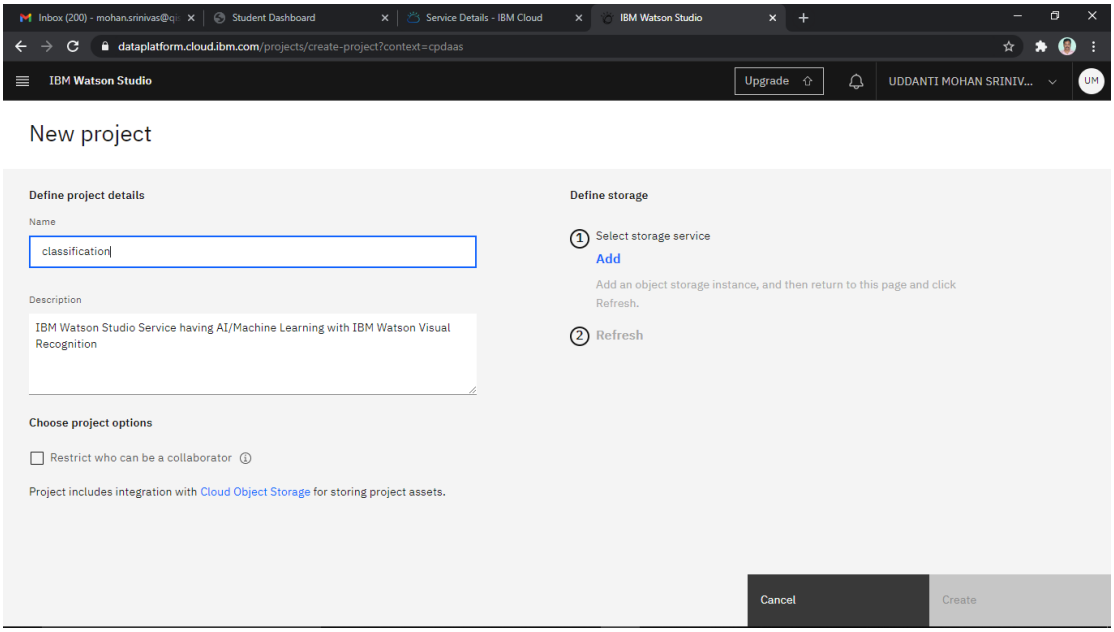
Click on Projects



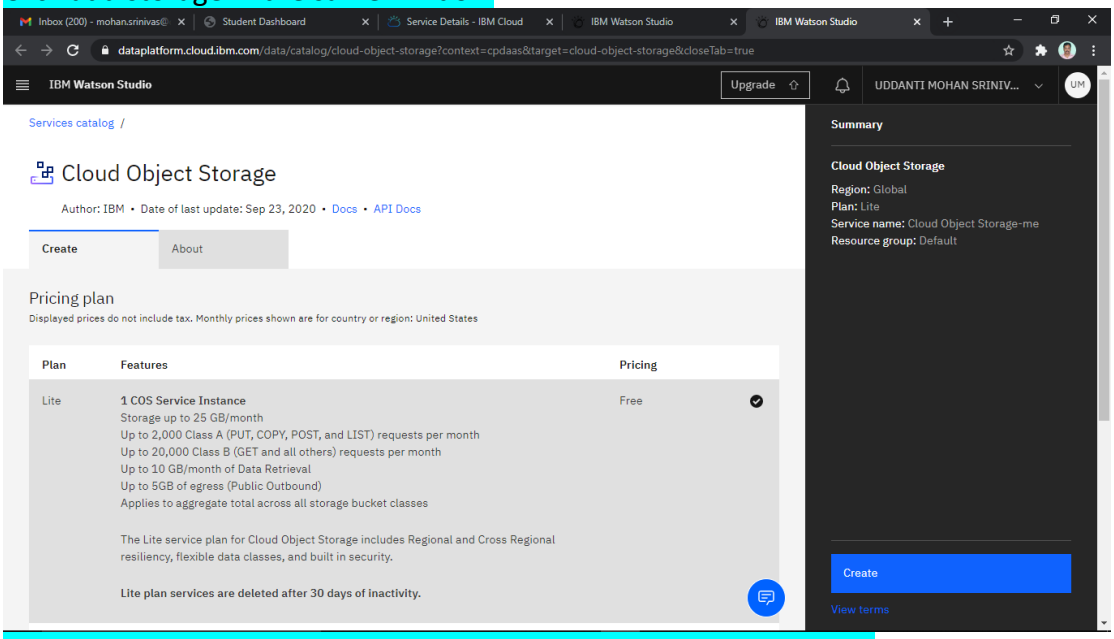
Click on New Project



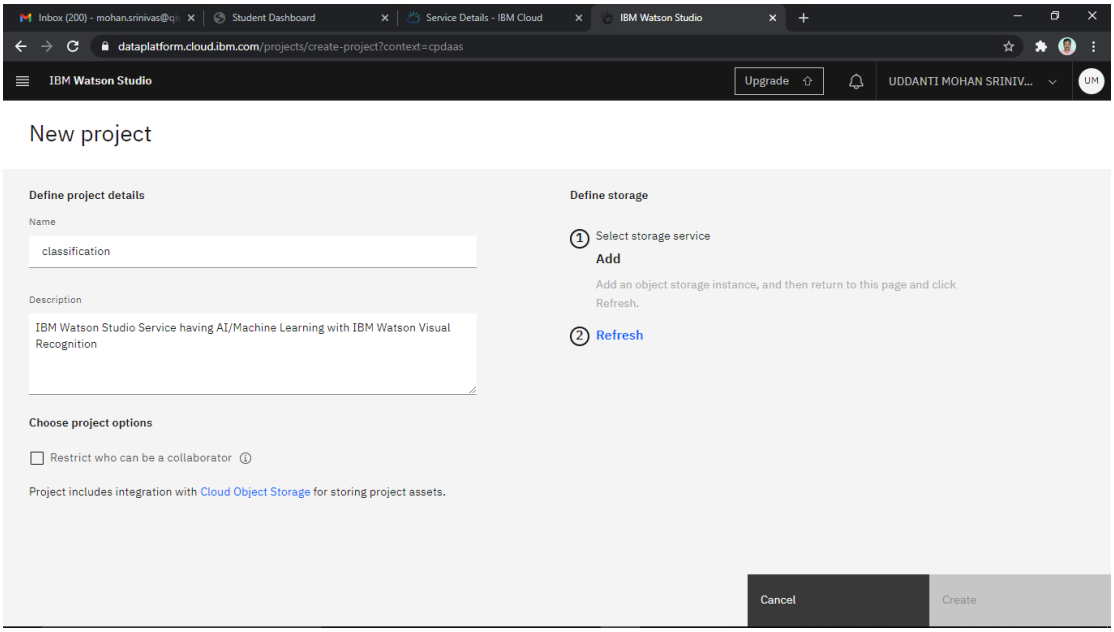
Click on Create an empty project
name it – classification



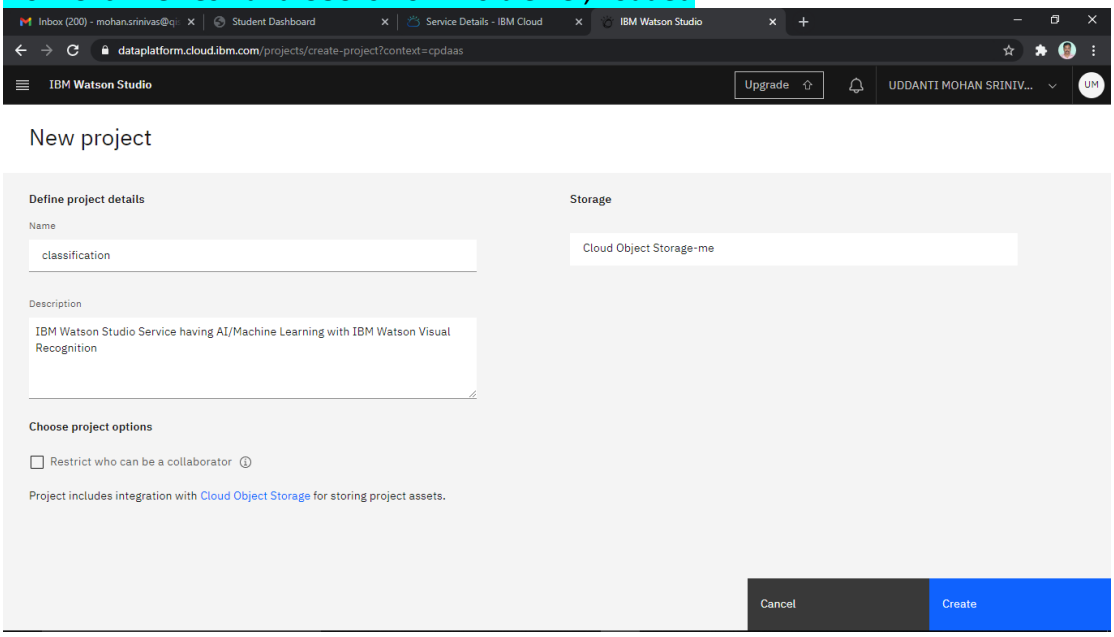
We need Storage for Images
Create a Cloud Object Storage COS service
Click add storage in the same window



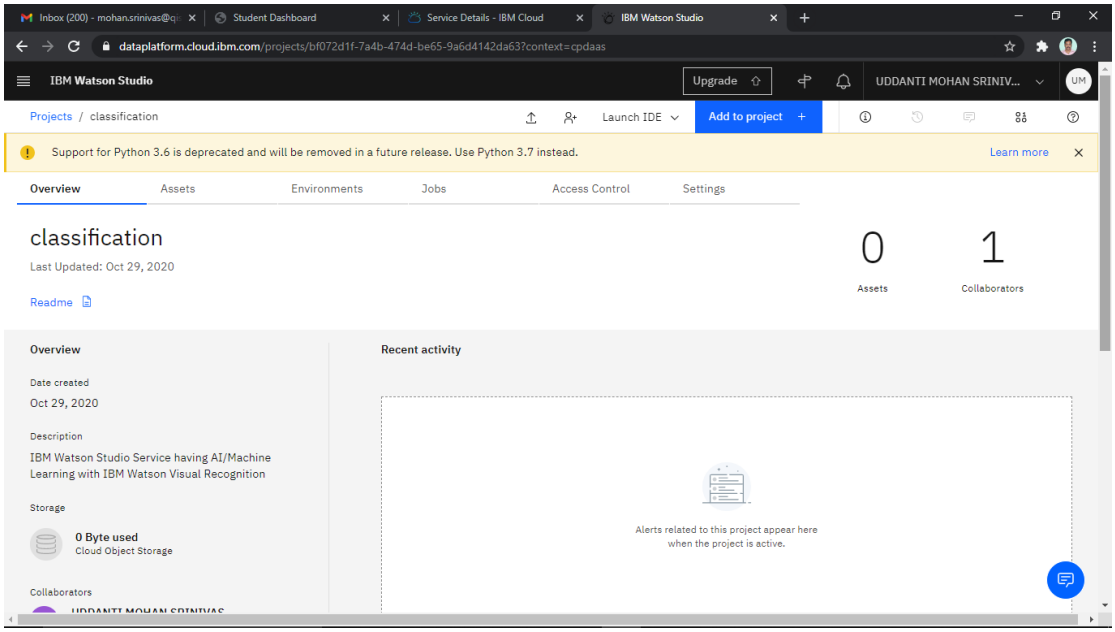
Now Click on **Create** button and leave the COS Service name as it is
Cloud Object Storage Service Name is - Cloud Object Storage-me



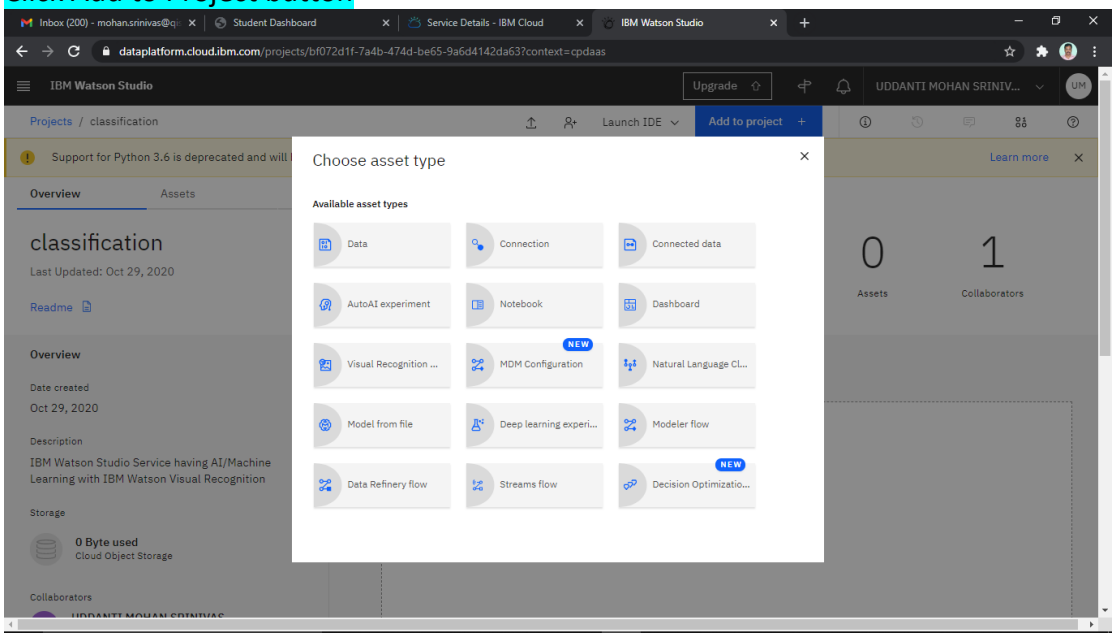
Now Click Refresh and COS is now Visible i.e., Loaded



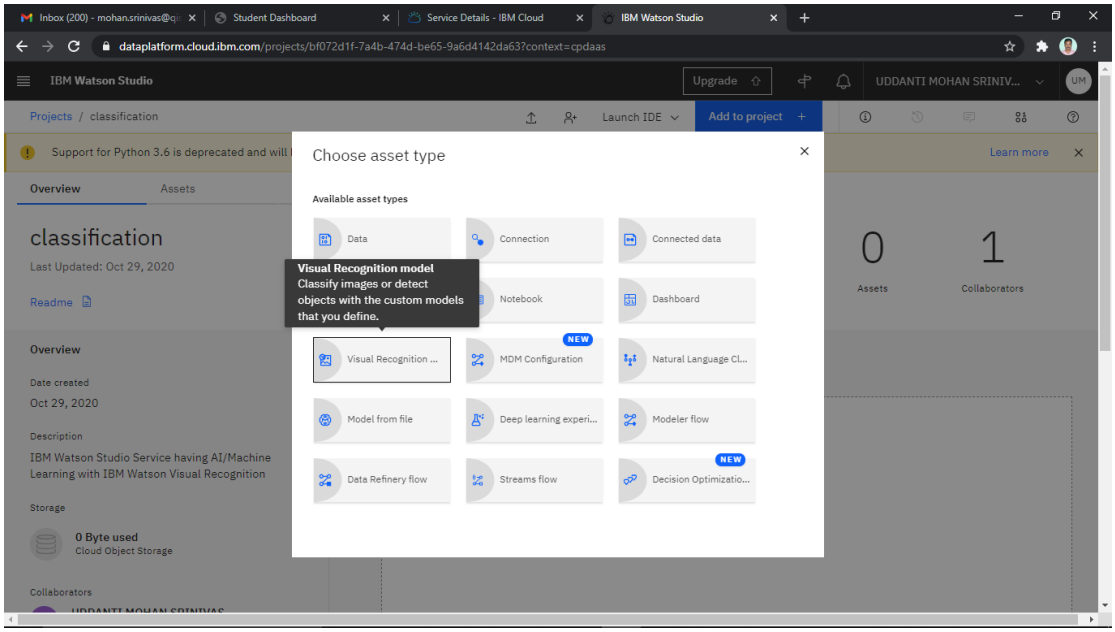
Once you have Project and COS click on Create button

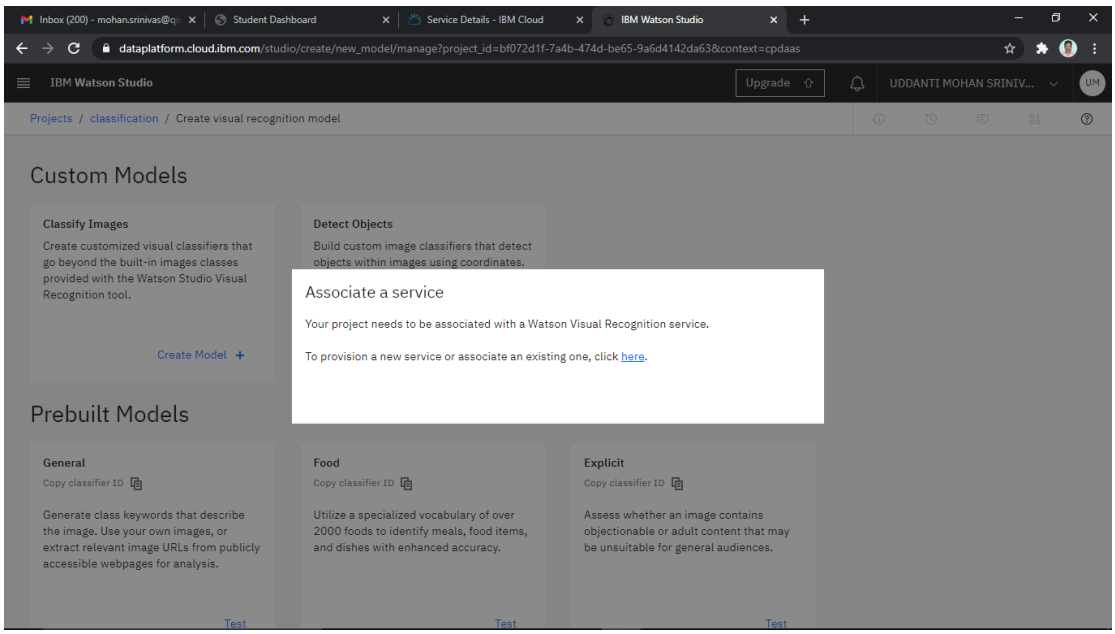


Now Add to Project - Visual Recognition Service
Click Add to Project button

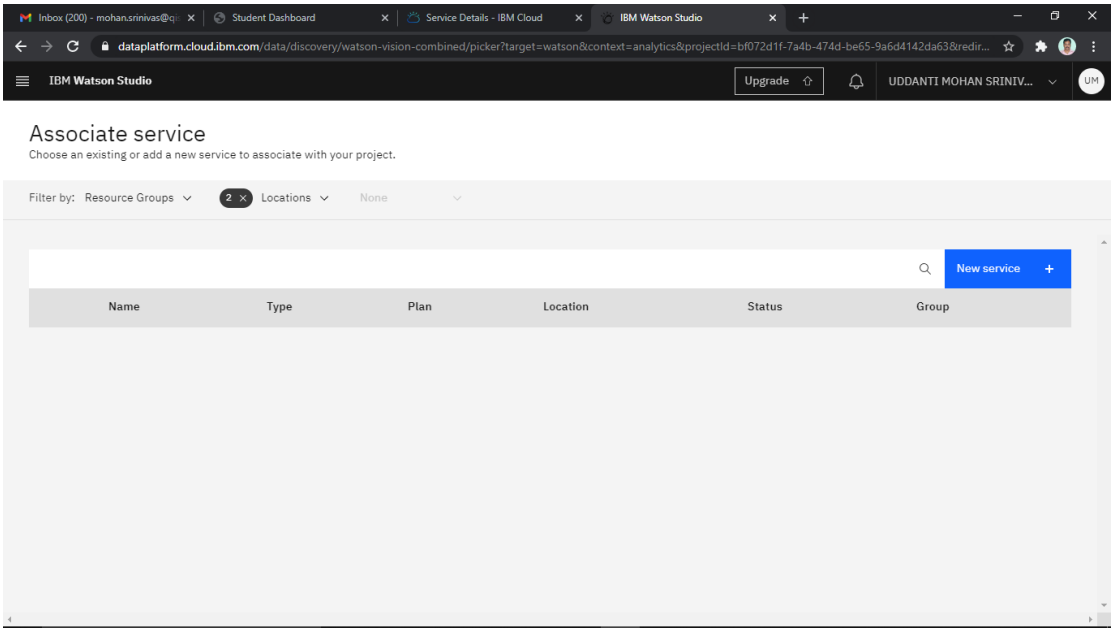


Select the Asset Visual Recognition Model

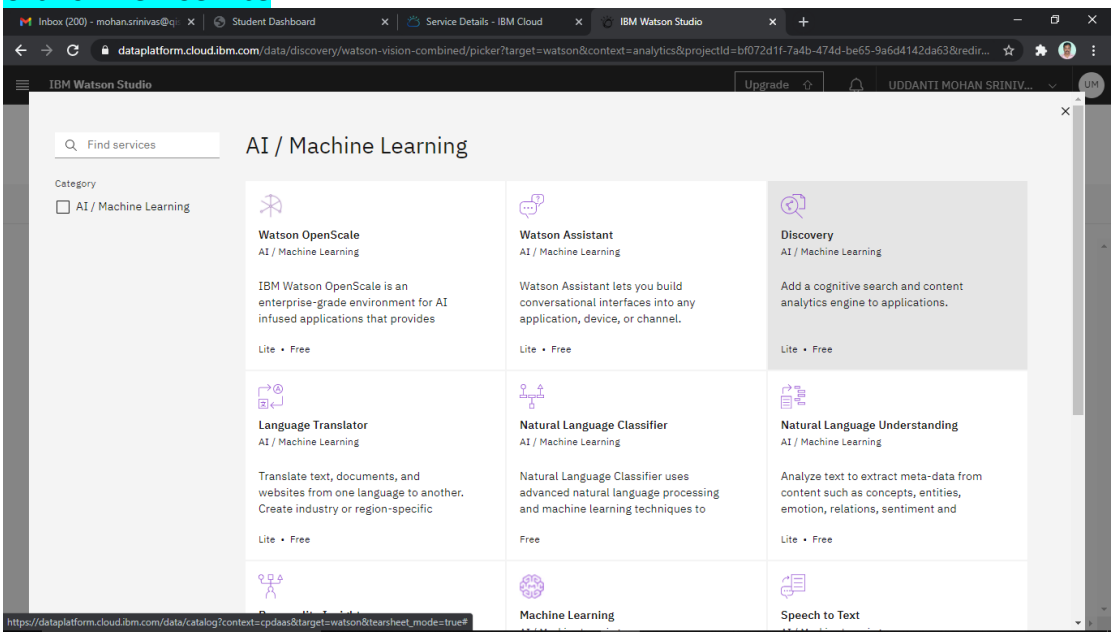




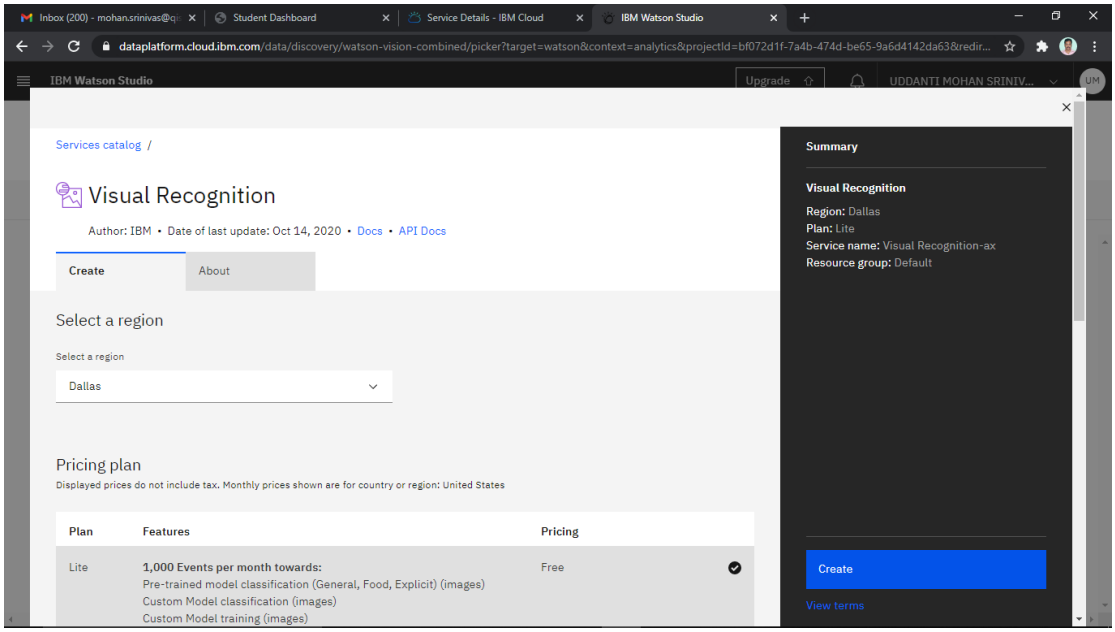
Click here on the popup window to Associate Service i.e., add Watson Visual Recognition Service



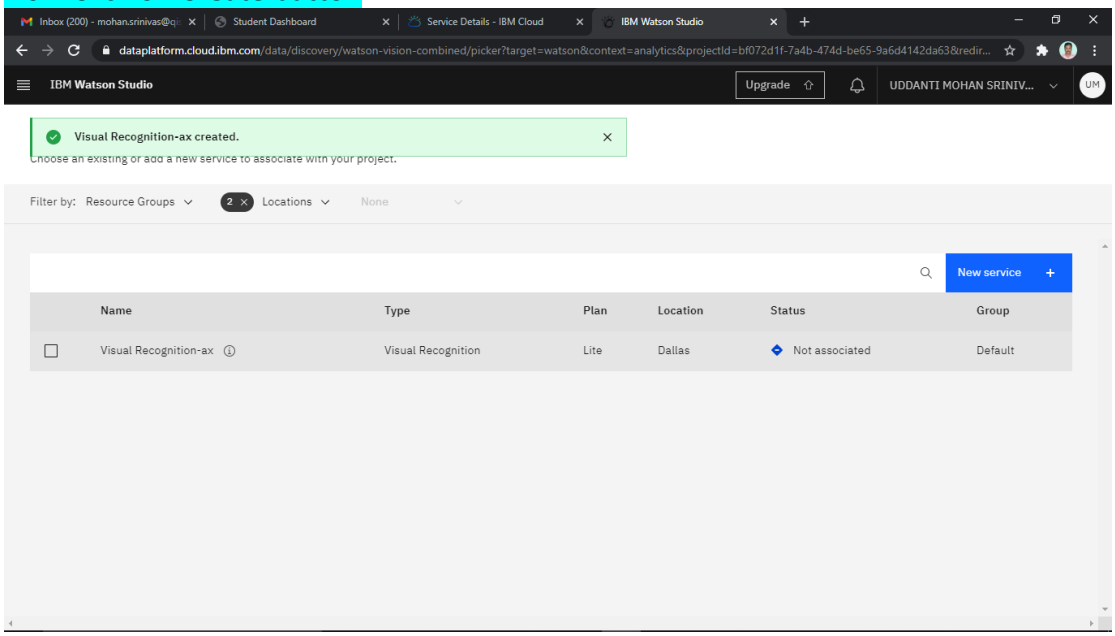
Click on New Service



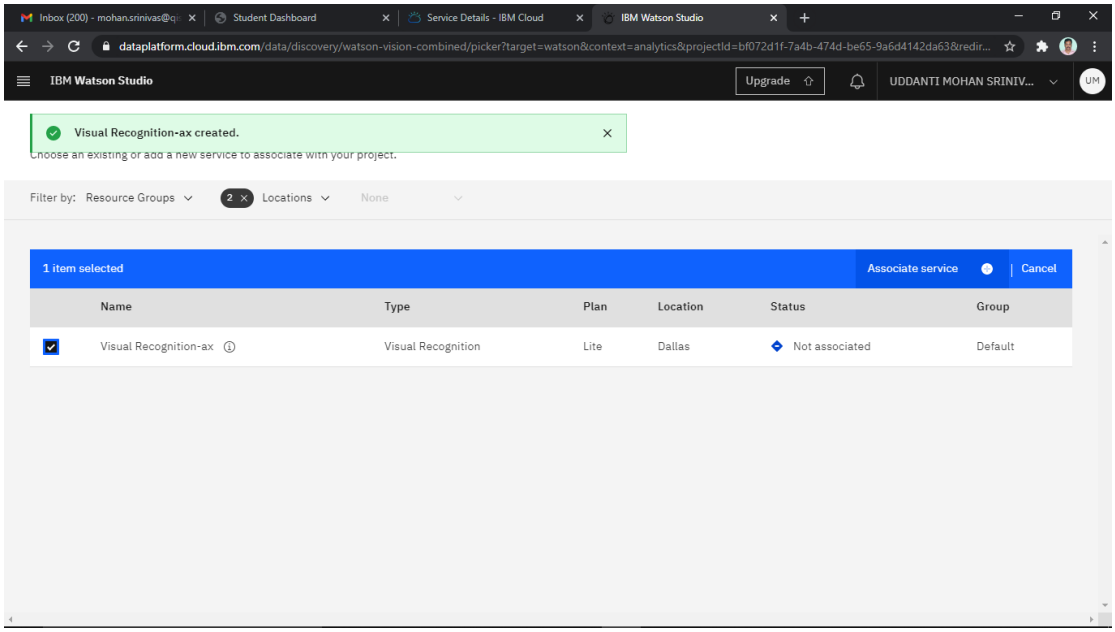
Now You will Find various Cognitive Services.
Select and Click on the Visual Recognition Service



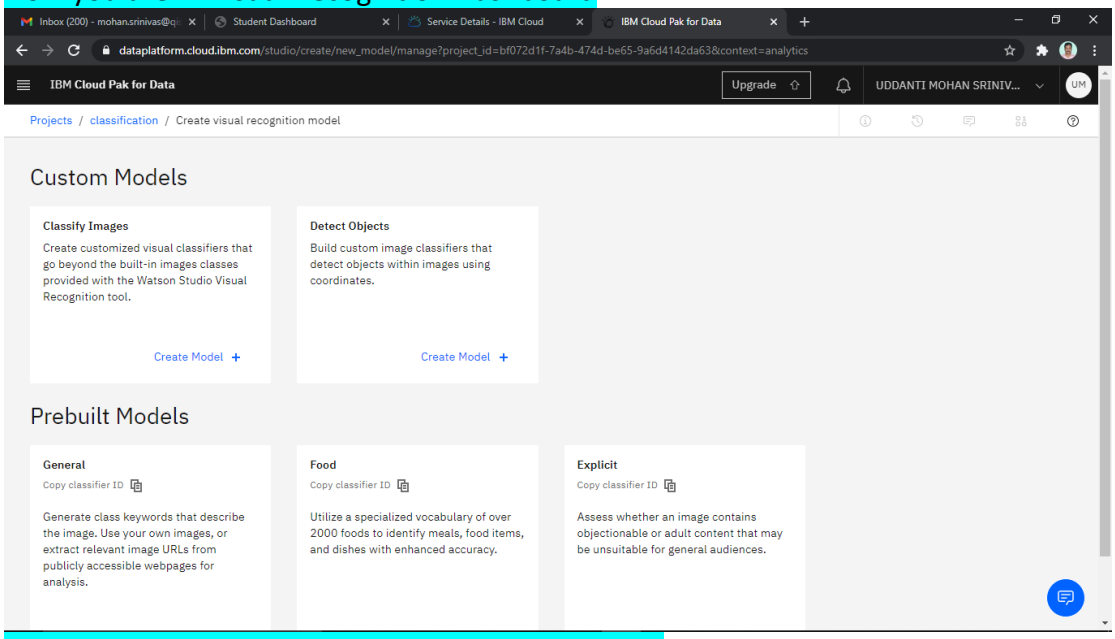
Region is Dallas for Visual Recognition as it is.
Name of the Service is same as it is. - Visual Recognition-ax
Now Click on Create button



Now Click on the Checkbox of the Visual Recognition Service
And then Select Associate Service on the top of this

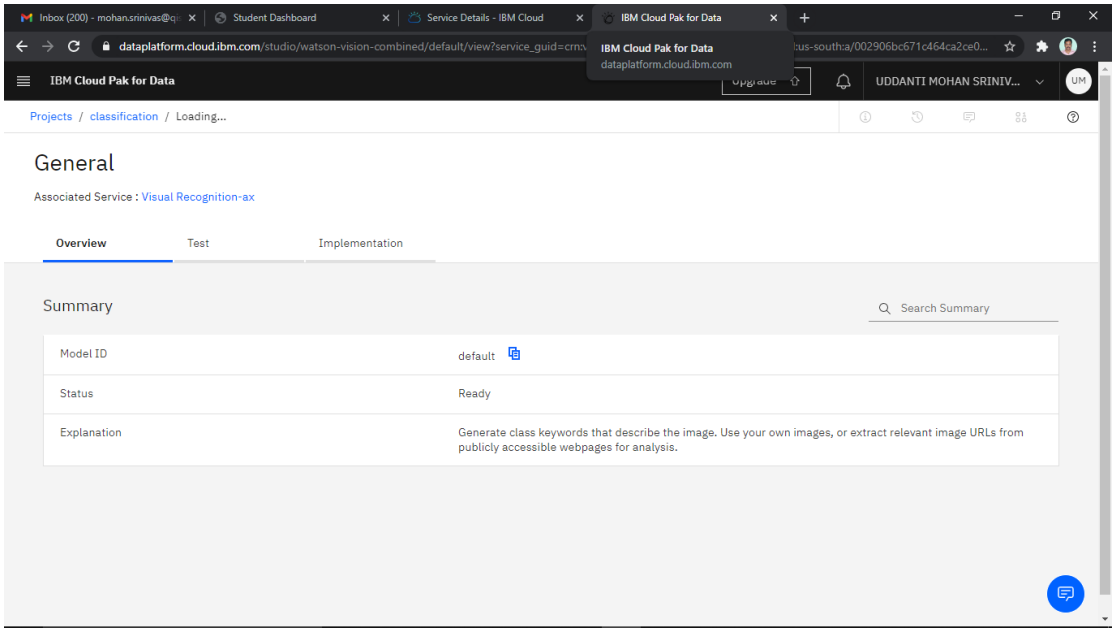


Now you are in Visual Recognition Dashboard

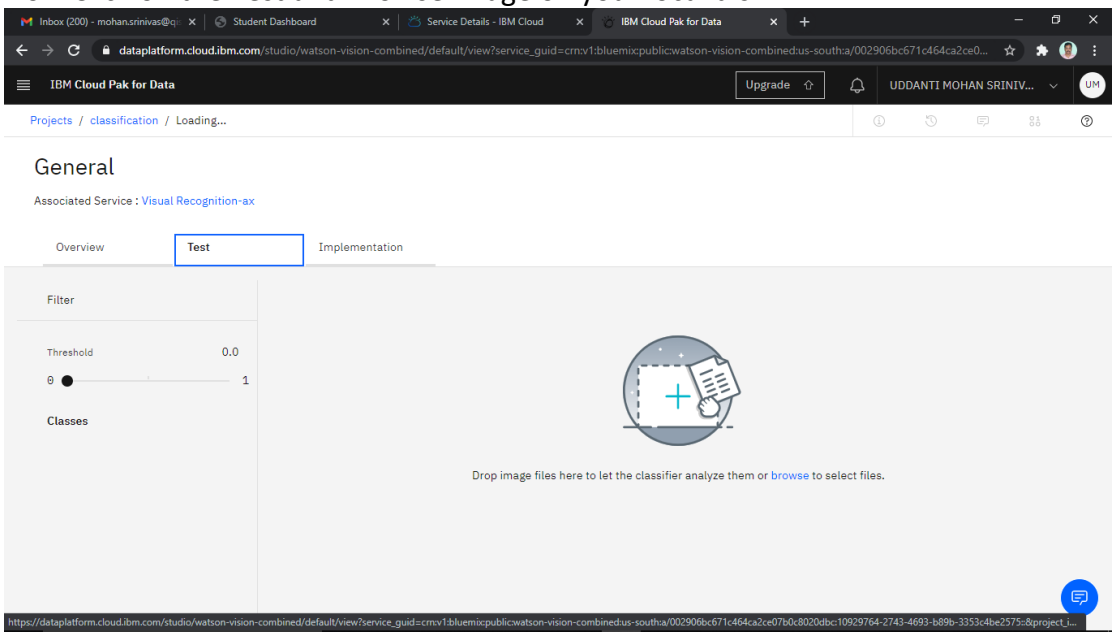


Here we have Custom Models and Prebuilt Models

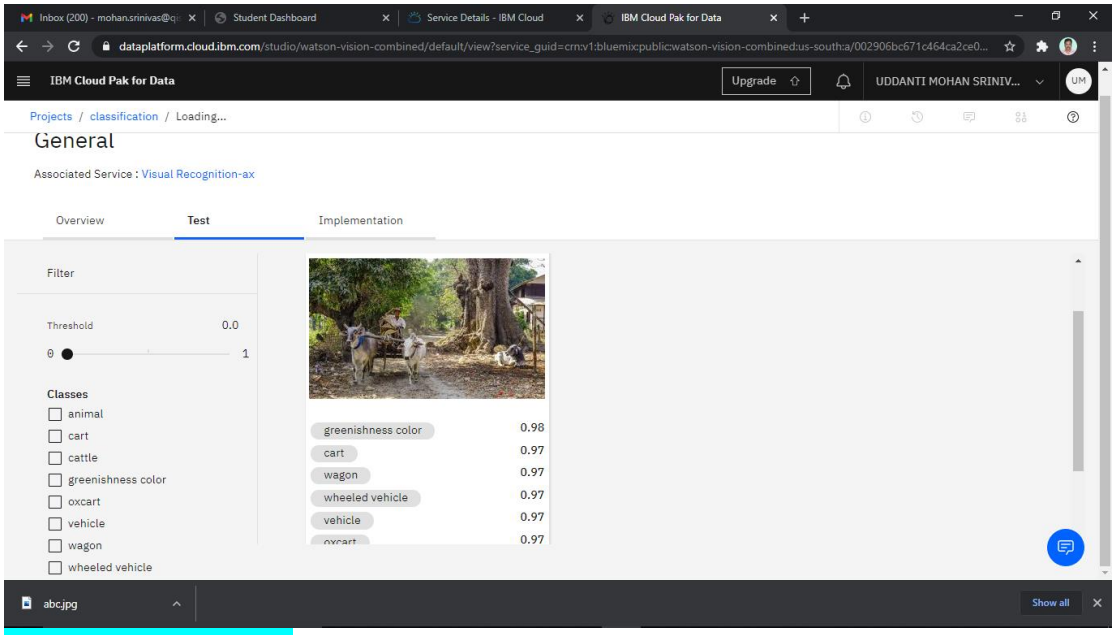
Now for testing we use Prebuilt Models
Here we have Three Prebuilt Models – General, Food, Explicit
Now Select General and Click Test



Now Click on the Test and Browse Image on your local disk



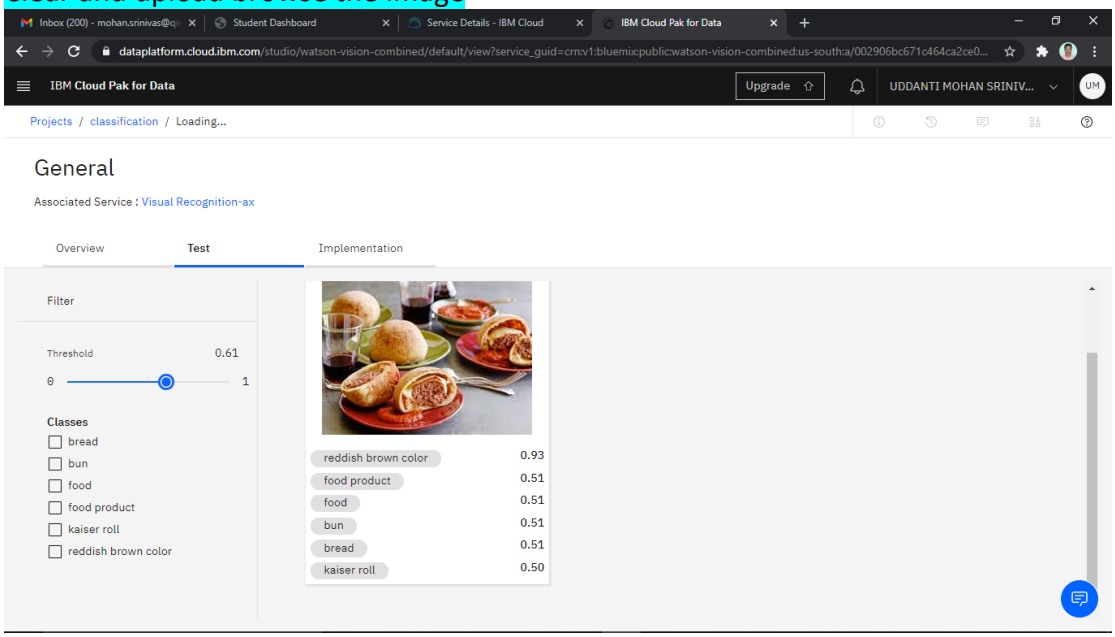
Click on Browse to load any image file



classifier_ids='default'

You can apply Threshold example take 0.61

Clear and upload browse the image



Click Implementation Part:

This can be Device Level, Application Level

Use APIs or SDK to implement this

Code Snippets:

Results are Those values in JSON format

Python Code Snippet:

Use the code snippets below to classify images against your model.
For reference, the full API specification is available here.

pip

```
pip install --upgrade "watson-developer-cloud>=2.4.1"
```

Authentication

```
from watson_developer_cloud import VisualRecognitionV3
```

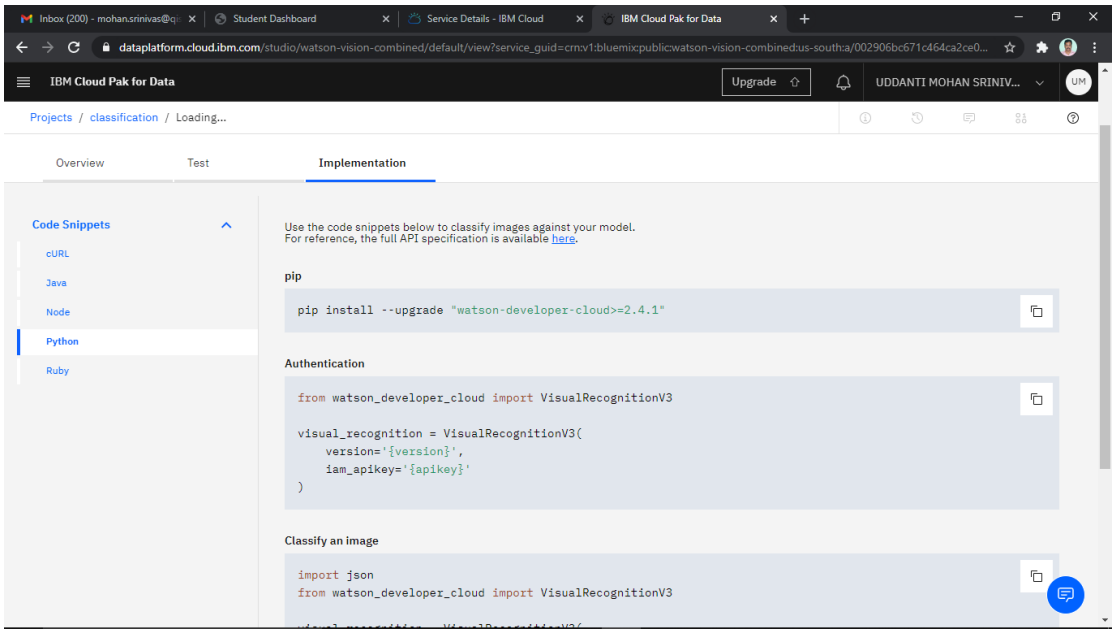
```
visual_recognition = VisualRecognitionV3(
    version='{version}',
    iam_apikey='{apikey}'
)
```

Classify an image

```
import json
from watson_developer_cloud import VisualRecognitionV3

visual_recognition = VisualRecognitionV3(
    '2018-03-19',
    iam_apikey='{iam_api_key}')

with open('./fruitbowl.jpg', 'rb') as images_file:
    classes = visual_recognition.classify(
        images_file,
        threshold='0.6',
        classifier_ids='default').get_result()
print(json.dumps(classes, indent=2))
```



API key will present in the credentials of the service

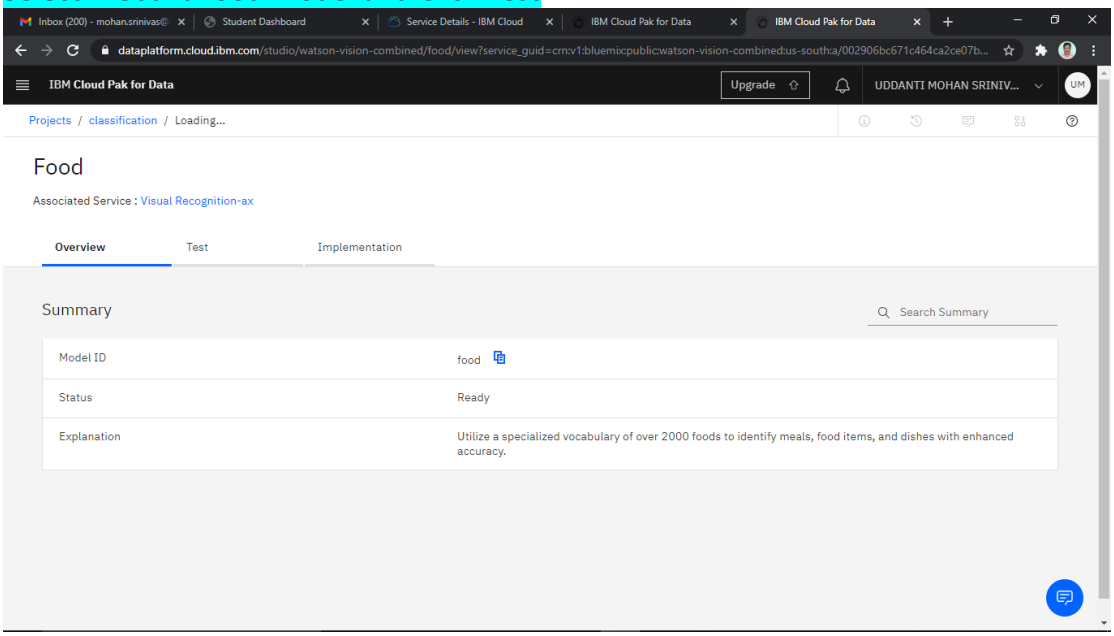
Key name ,Date created, Actions

wdp-writer 2020-10-28T19:52:56.799397405Z

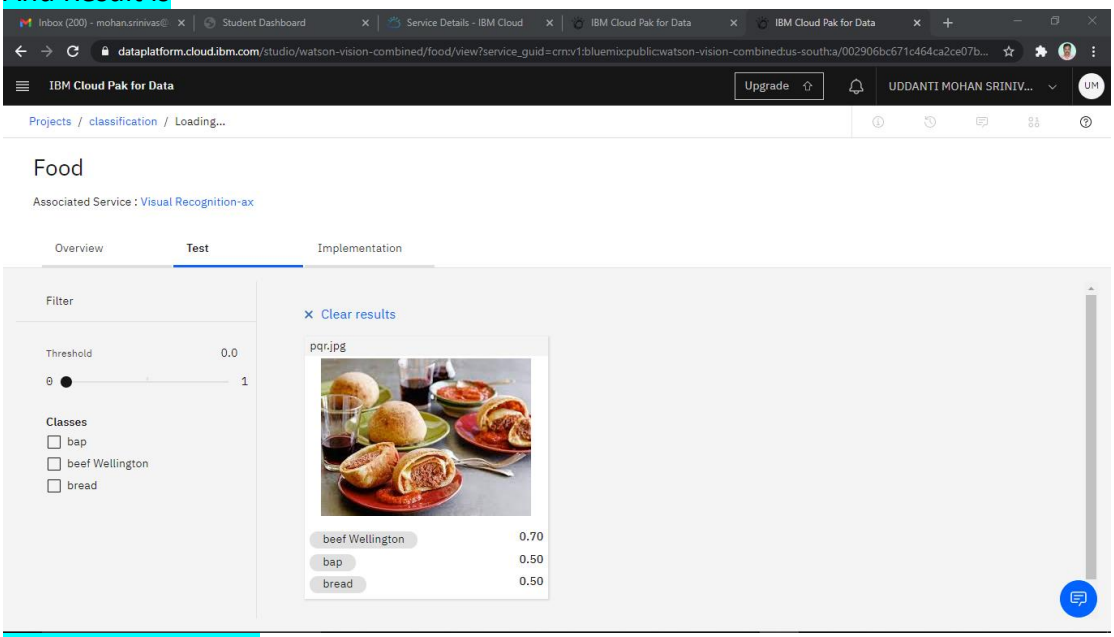
{
"apikey": "EdBkYl1a42ynAYDrZLgv9d_ryvhnRz3NNtGI02McUDLz",
"iam_apikey_description": "Auto-generated for key 2e8c3f92-c88b-418d-91e4-70713a019bad",
"iam_apikey_name": "wdp-writer",
"iam_role_crn": "crn:v1:bluemix:public:iam::::serviceRole:Writer",
"iam_serviceid_crn": "crn:v1:bluemix:public:iam-identity::a/002906bc671c464ca2ce07b0c8020dbc::serviceid:ServiceId-2e4c2c83-d86b-40de-a934-24b44cd669db",

"url": "https://api.us-south.visual-recognition.watson.cloud.ibm.com/instances/10929764-2743-4693-b89b-3353c4be2575",
}

Now Check Prebuilt Model – Food
Right Click on the Associate Service – Visual Recognition and Open in New tab
Select Prebuilt Food Model and Click Test



Browse and Load a Food based Image
And Result is

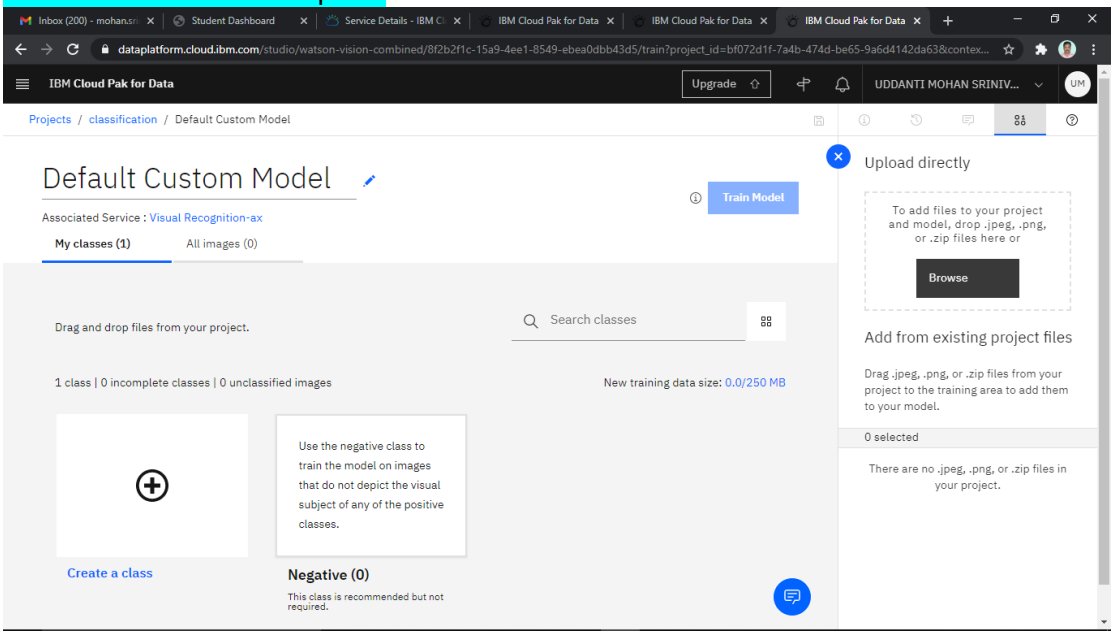


classifier_ids='food'

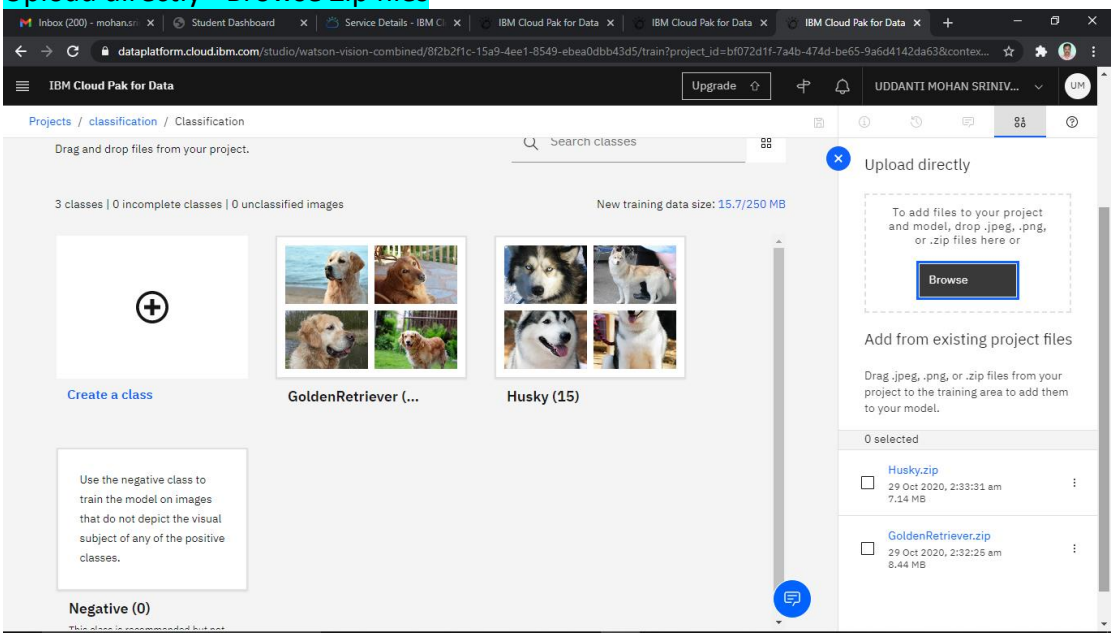
Now we go for Custom Build Models

To build a custom model we need some images for training and testing.
Right Click on the Associate Service – Visual Recognition and Open in New tab

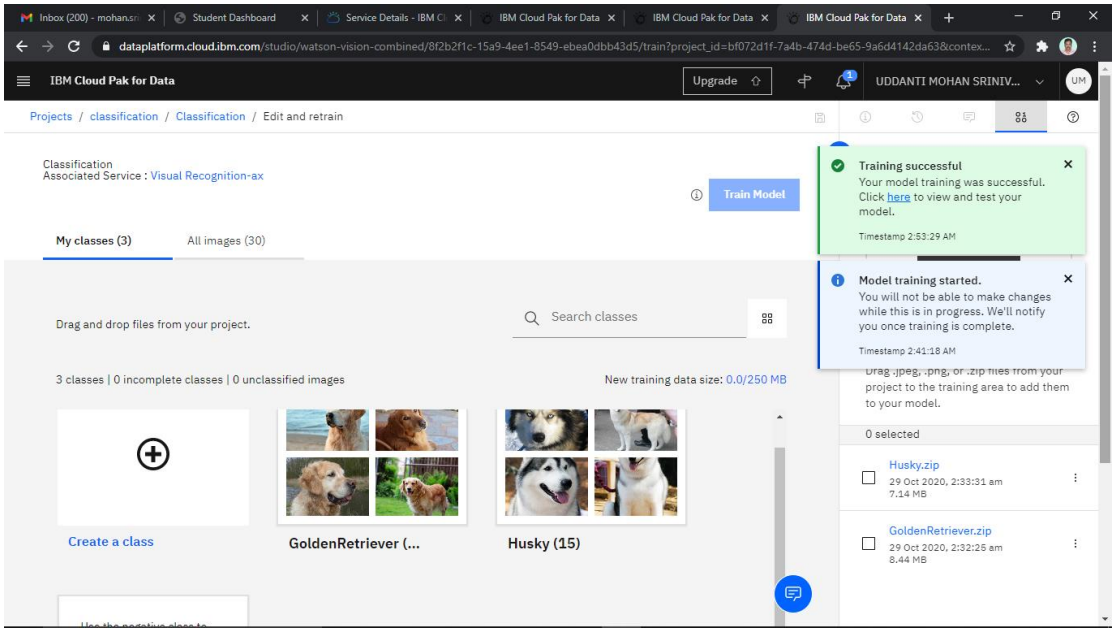
Select Classify Images in Custom Models
Click on Create Model Option



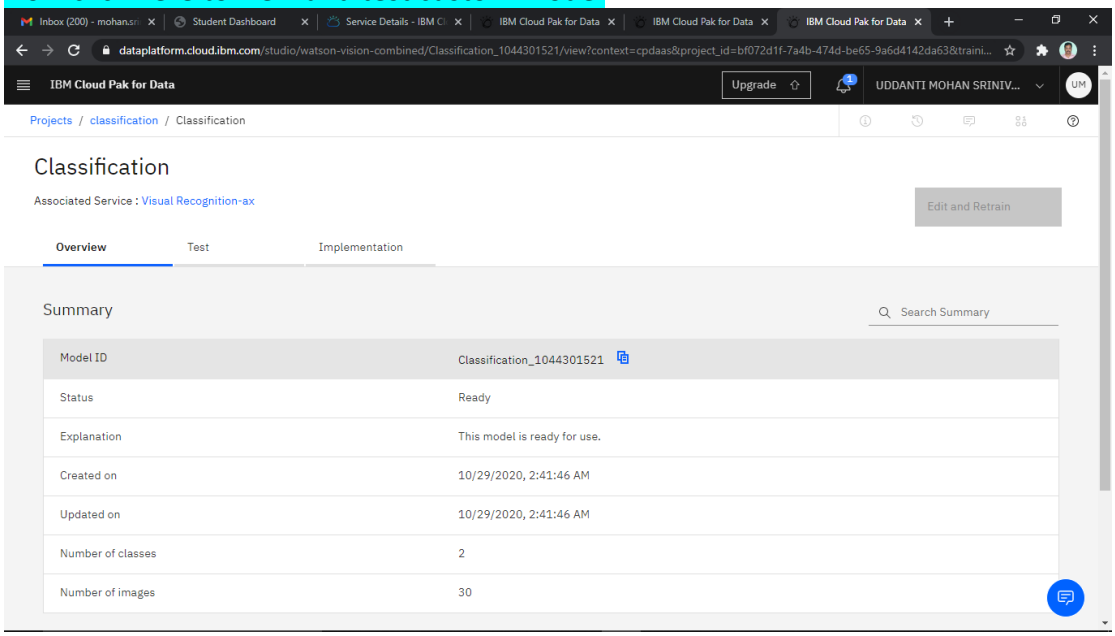
First change the name of the Model
Default Custom Model is edited name it as **Classification**
Upload directly - Browse Zip files



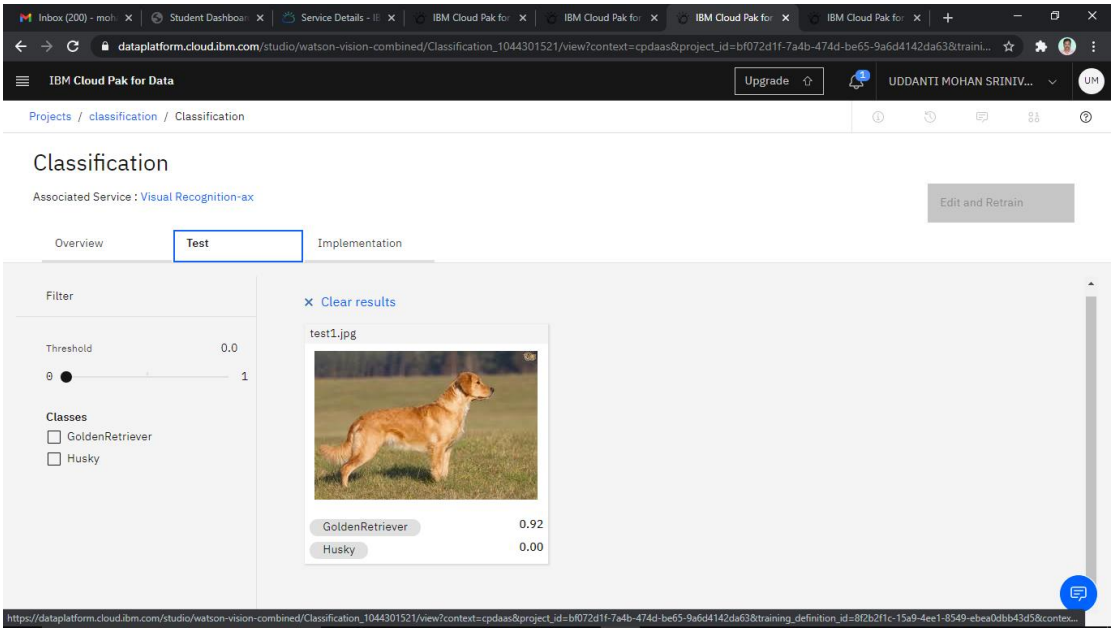
Now click on Training button



Now click here to view and test custom model:

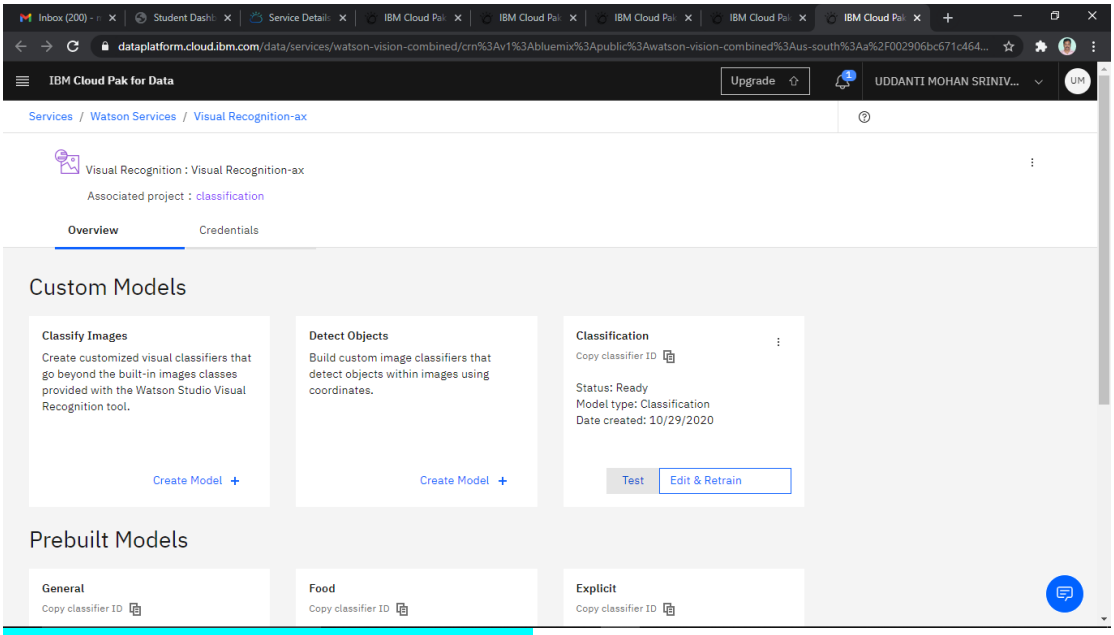


Now test
Select / Browse the Test1 Image

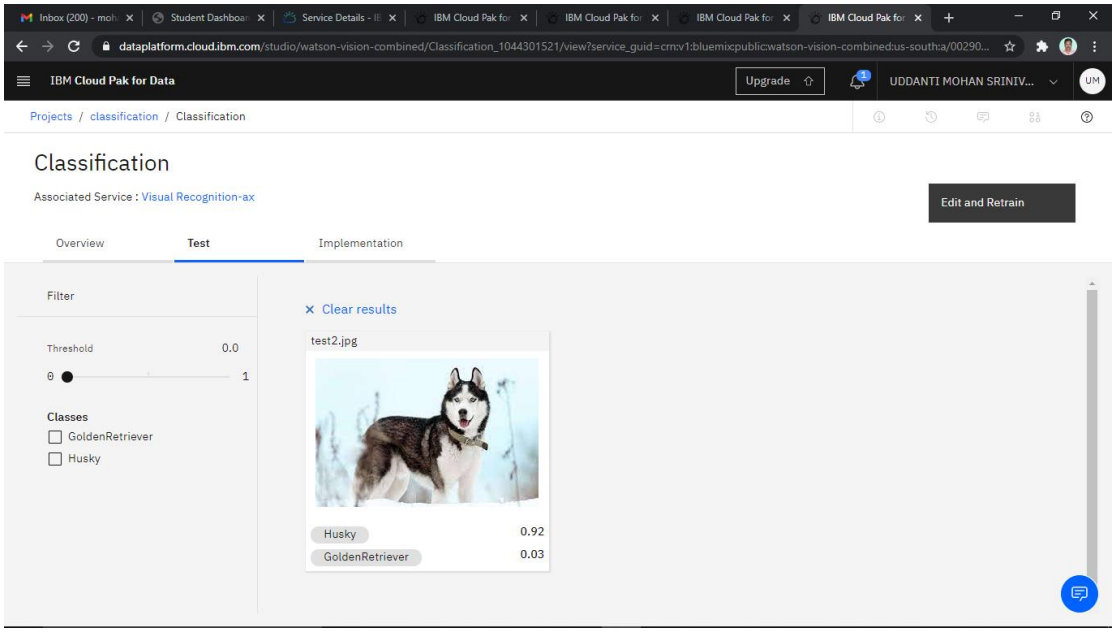


Open in new browser window

Select / Browse the Test2 Image



classifier_ids=Classification_1044301521


IBM Cloud Pak for Data
Upgrade
UDDANTI MOHAN SRINIV...
Projects / classification / Classification
Classification
Associated Service : Visual Recognition-ax
Edit and Retrain
Overview
Test
Implementation
Filter
Threshold
0.0
0
1
Classes
GoldenRetriever
Husky
Clear results
test2.jpg
Husky
0.92
GoldenRetriever
0.03