

IBM Micro-badge: Visual Recognition

Detecting damaged neighbourhood to identify burned homes and intact homes using IBM Visual Recognition Service

Skills Required:

IBM Cloud

IBM Watson

IBM Watson Visual Recognition

Project Description:

Sometimes local governments must respond to disasters or accidents that destroy large numbers of homes or buildings. They may need to demolish partially destroyed homes and manage disaster debris. If your community does not have a disaster debris management plan, they may want to consider developing one.

Cleanup activities related to returning to homes and businesses after a disaster can pose significant health and environmental challenges. People can be exposed to potentially life-threatening hazards from leaking natural gas lines, and carbon monoxide poisoning from using unwanted fuel-burning equipment indoors. During a flood cleanup, failure to remove contaminated materials and reduce moisture and humidity may present serious long-term health risks from micro-organisms, such as bacteria and mold.

Detecting damaged neighbor-hoods to identify burned homes and intact homes using IBM Visual Recognition Service- this interactive model helps the disaster management to identify burned and intact homes. This can help disaster management team to recover faster, minimize or prevent the environmental impacts of mismanaged wastes, and ultimately support compliance with environmental regulations

Our Aim:

To detect the images taken from drone or satellite and predict among three classes.
The three possible classes of detected images are :

1. Burned Homes
2. Aerial Homes
3. No Homes

Process :

Task 1: Data Collection

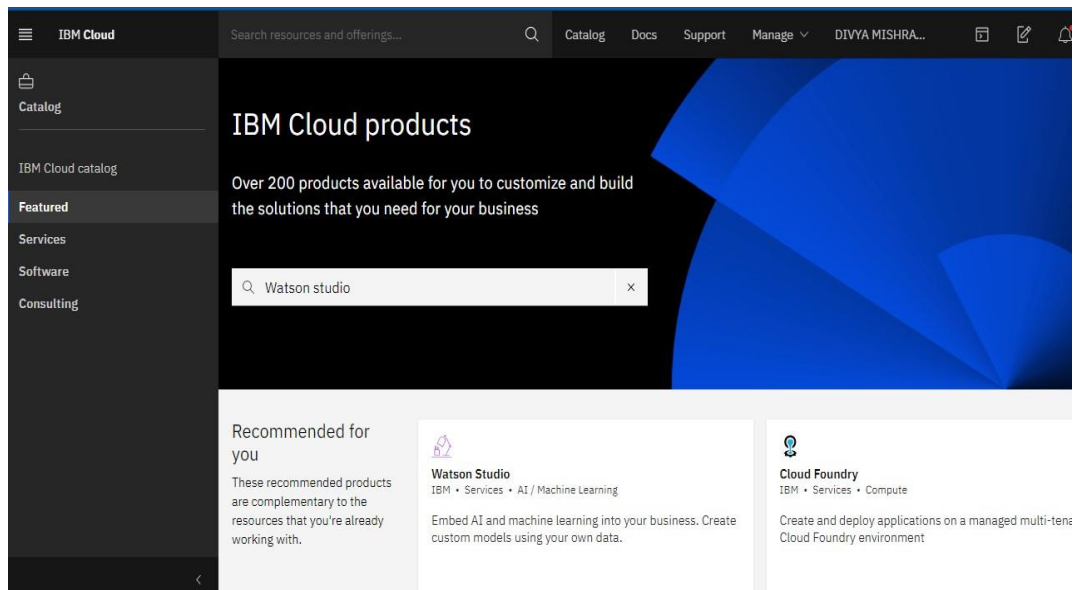
Download dataset from:Kaggle .

Task 2: Create Watson Studio Project

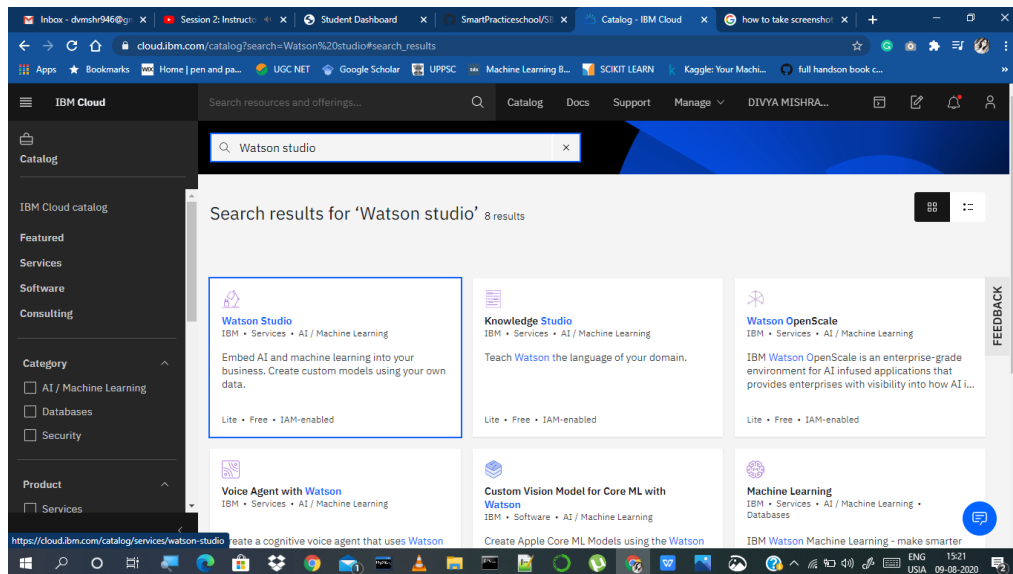
Step 1: Login to IBM Cloud.

<https://cloud.ibm.com/login>

Step 2: Go to **Catalog**. In the search bar , search for **Watson studio**.



Step 3: Click on Watson Studio.



Step 4: Create service .

Step 5 : Open service .

Go to **Dashboard** .Select **Services**. In that click on **Watson studio**.

Resource list

Create resource +

Name	Group	Location	Status	Tags
Filter by name or IP address...				
Filter by group or org...				
Filter...				
Filter...				
Filter...				
Services (11)				
Machine Learning-55	Default	London	Active	—
Speech to Text-yl	Default	London	Active	—
Text to Speech-hd	Default	London	Active	—
Tone Analyzer-12	Default	London	Active	—
Watson Assistant-zk	Default	London	Active	—
Watson Studio-x0	Default	London	Active	—
node-red-fyrp-cloudant-1594439773718	Default	London	Active	—
watson-vision-combined-vs	Default	Dallas	Active	cpda...
Storage (1)				

Step 6: Click on **Watson service. Then click on **Get started** . Go to **Projects** . **Create a Project**.**

IBM Watson Studio

Upgrade

DIVYA MISHRA's Account

Create a project

Create a project, and then add the tools and assets you need.

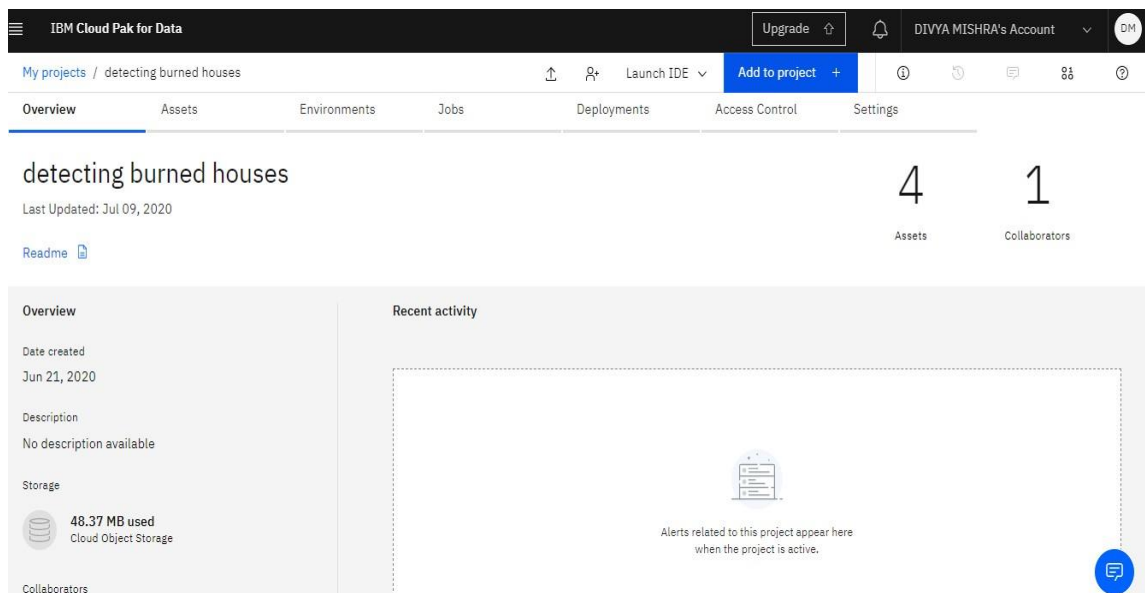
Recently updated projects View all (1) New project +

Name	Role	Collaborators	Date created	Last updated
detecting burned houses	Admin	DM	Jun 21, 2020	Jul 09, 2020

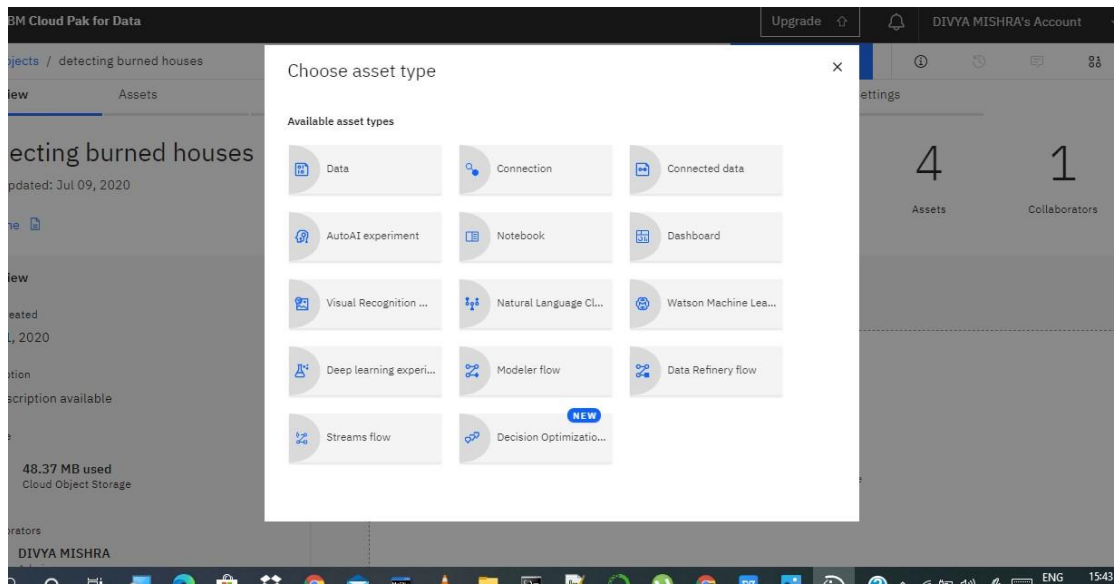
Task 3: Build Your Custom Model

Step 7: Click on Project created like we created here “**detecting burned homes**”.

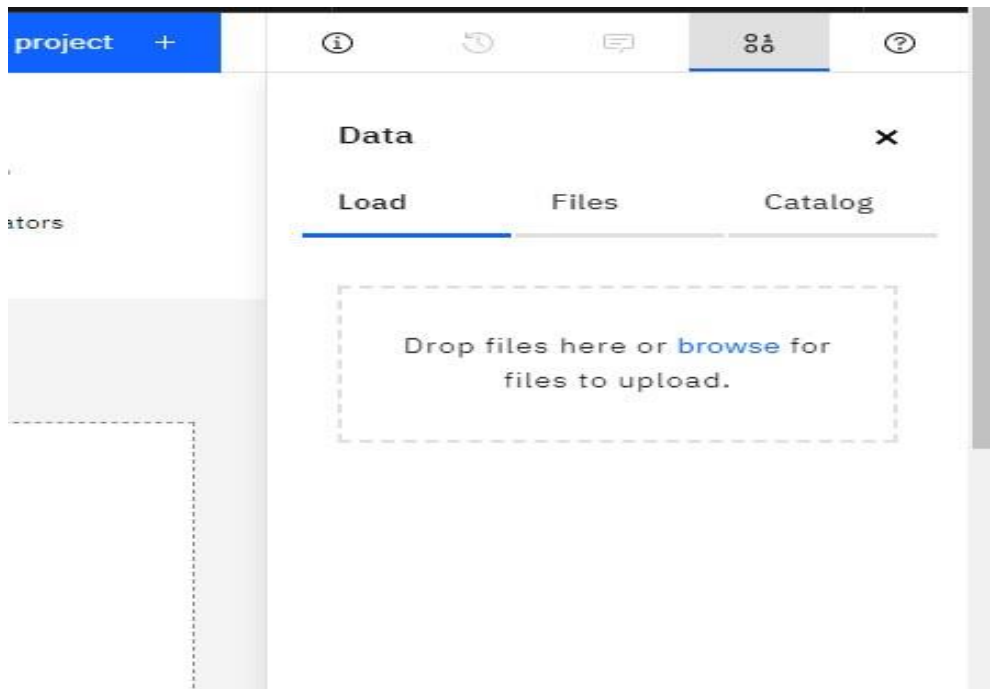
Go to **Add to project**.



Step 8: In that to upload Dataset. Select **ASSETS** . in that select **data**.



Step 9: Upload data-set from **browse** .



Step 10 : Wait to Data to get uploaded from selected computer location.

IBM Watson Studio

My projects / detecting burned houses

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<input type="checkbox"/>	Name	Type	Created by	Last modified	
<input type="checkbox"/>	ZIP NotHomes.zip	Data Asset	DIVYA MISHRA	Jul 09, 2020, 10:24 PM	
<input type="checkbox"/>	ZIP BurnedHomes.zip	Data Asset	DIVYA MISHRA	Jul 09, 2020, 10:23 PM	
<input type="checkbox"/>	ZIP AerialHomes.zip	Data Asset	DIVYA MISHRA	Jul 09, 2020, 10:23 PM	

Models

Visual Recognition models

New Visual Recognition models +

Name	Model ID	Model type	Last modified	
Default Custom Model	DefaultCustomModel_1455506701	Classification	Jul 09, 2020, 10:45 PM	

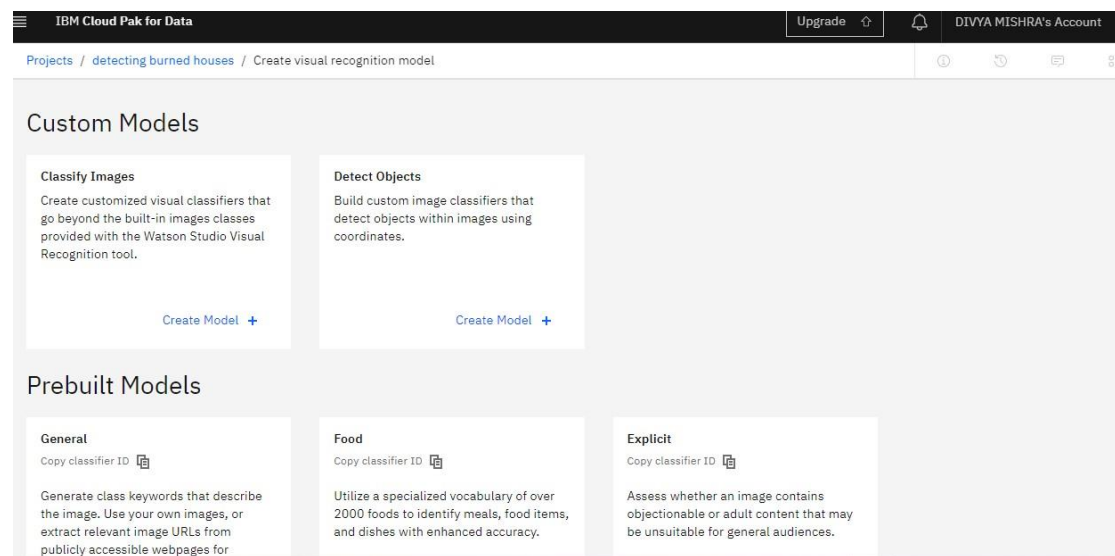
Data

Load Files Catalog

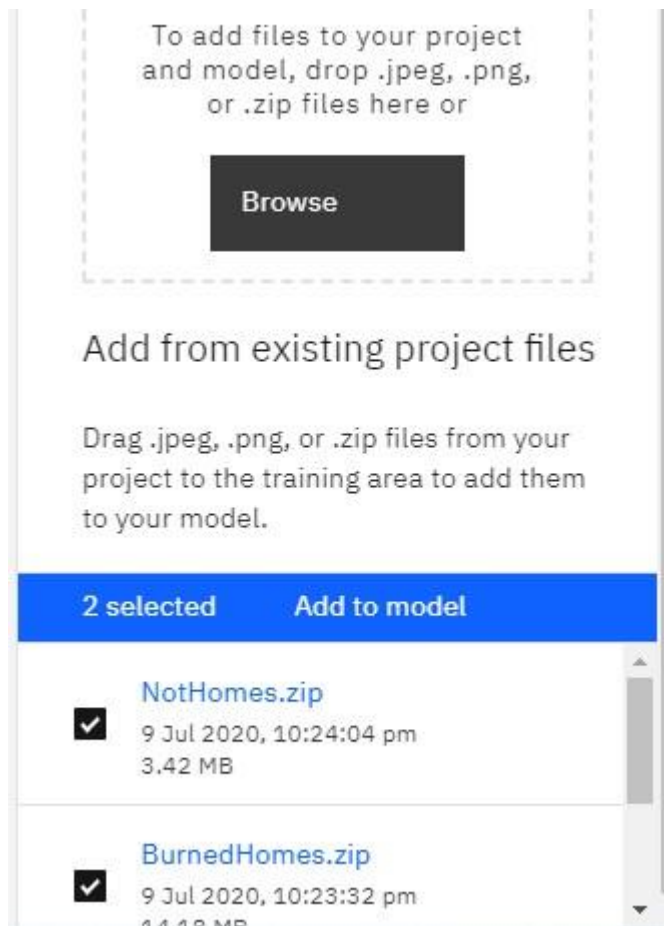
Drop files here or browse for files to upload.

Step 11 : Again Go to **Add to Project** to select **Assets** . In that select **VISUAL RECOGNITION** .You will be redirected to page.

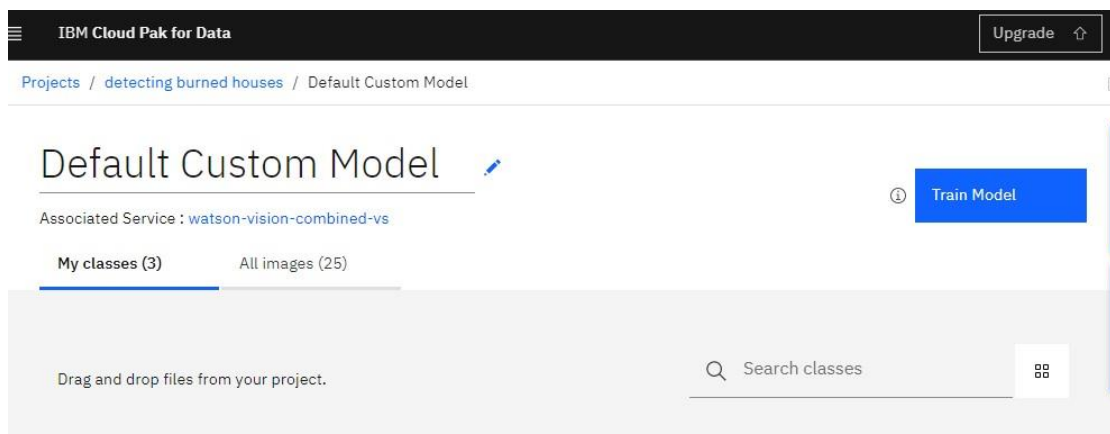
Select **Classifiy images** under **Custom models**. Since our target to predict classify of one of the three type of images.



Step 12: Select Dataset to upload in training the model. Click on **Add to model**.



Step 12: After data is get uploaded , click on **train the model**.



Step 13 : Wait the model to get trained till get notification to get trained,

IBM Cloud Pak for Data

Upgrade

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Projects / detecting burned houses / Default Custom Model

Default Custom Model

Associated Service : watson-vision-combined-vs

My classes (3)

All images (25)

Drag and drop files from your project.

3 classes | 0 incomplete classes | 0 unclassified images

Notifications

Watson Visual Recognition model Default Custom Model training has completed

2020/07/09 at 10:39 PM

Watson Visual Recognition model Default Custom Model training has completed

2020/06/17 at 12:11 PM

Watson Visual Recognition model Default Custom Model training has completed

2020/06/17 at 12:14 AM

View all

Upload directory

To add files and models to your project, drag and drop files or upload them from your local machine.

Add from external storage

Search

New training data size: 17.7/250 MB

Step 14 : Check model overview.

Apps

Bookmarks

Home | pen and pa...

pdf compressor

RPSC | Recruitment...

ASSISTANT RADIO...

UGC NET

Google Scholar

UPPSC

UGC NET 2020

Machine Learning 8...

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DM

Projects / detecting burned houses / Default Custom Model

Default Custom Model

Associated Service : watson-vision-combined-vs

Edit and Retrain

Overview

Test

Implementation

Summary

Search Summary

Model ID	DefaultCustomModel_1455506701
Status	Ready
Explanation	This model is ready for use.
Created on	7/9/2020, 10:31:49 PM
Updated on	7/9/2020, 10:31:49 PM

Step 15: Test the Model

eu-gb.dataplatform.cloud.ibm.com/studio/watson-vision-combined/DefaultCustomModel_1455506701/view?project_id=79ed94b9-cd74-4e1d-83eb-73d81d...

IBM Watson Studio Upgrade DIVYA MISHRA's Account

Projects / detecting burned houses / Default Custom Model

Default Custom Model

Associated Service : watson-vision-combined-vs Edit and Retrain

Overview Test Implementation

Filter


Threshold 0.0

0 1

Classes

- ☐ AerialHomes.zip
- ☐ BurnedHomes.zip
- ☐ NotHomes.zip

img3.jpg



NotHomes.zip	0.90
BurnedHomes.zip	0.02
AerialHomes.zip	0.00

Results :

The Model predicts the probability score of each of the class. The class with maximum score is the predicted to be the final class.