

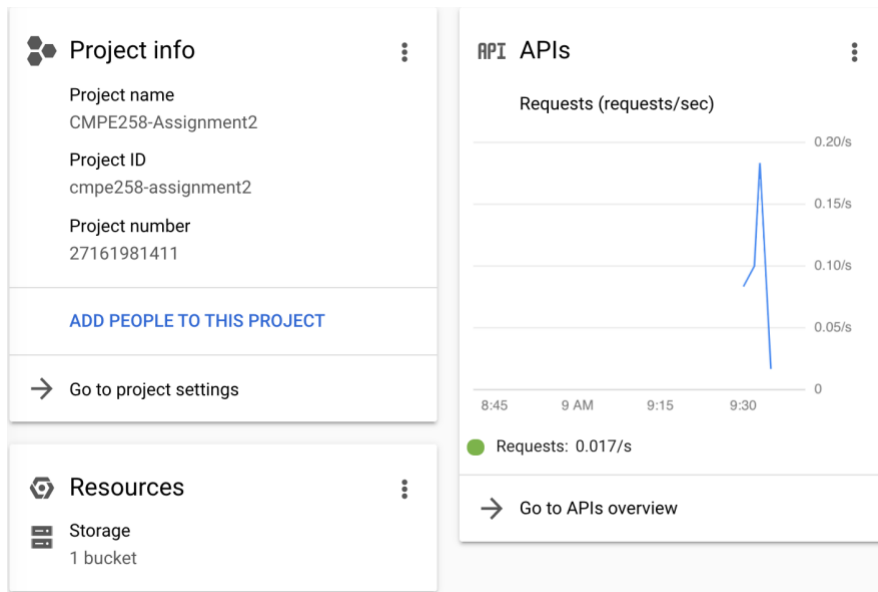
CMPE 258 – Deep Learning Assignment 2

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1. Hello Image Data:

PROJECT SETUP:

- On the project selector page, created a project named: **CMPE258-Assignment2**



- Enabled the API for the above created project:



The API is enabled

Cloud AI Platform API has been enabled.

Next, to use the API you'll need the right credentials.

[Go to credentials](#)

- Set up the authentication:

Service Accounts

<input type="checkbox"/>	Email	Name ↑
<input type="checkbox"/>	arpitha-gurumurthy@cmpe258-assignment2.iam.gserviceaccount.com	Arpitha Gurumurthy

- Set up the environment variable to the path of the JSON file downloaded from the previous step.

```
(base) arpatha@Arpathas-MacBook-Air ~ % export GOOGLE_APPLICATION_CREDENTIALS=/Users/arpatha/Downloads/CMPE258-Assignment2-361ba5f0e65d.json
(base) arpatha@Arpathas-MacBook-Air ~ %
```

CREATING CLOUD STORAGE BUCKET:

```
To set your Cloud Platform project in this session use "gcloud config set project [PROJECT_ID]"
arpatha_gurumurthy@cloudshell:~$ export PROJECT_ID=cmpe258-assignment2
arpatha_gurumurthy@cloudshell:~$ echo $PROJECT_ID
cmpe258-assignment2
arpatha_gurumurthy@cloudshell:~$ gsutil mb -p ${PROJECT_ID} -l us-central1 gs://${PROJECT_ID}/
Creating gs://cmpe258-assignment2/...
ServiceException: 409 A Cloud Storage bucket named 'cmpe258-assignment2' already exists. Try another name. Bucket names must be globally unique across all Google Cloud projects, including those outside of your organization.
arpatha_gurumurthy@cloudshell:~$ export BUCKET=${PROJECT_ID}
arpatha_gurumurthy@cloudshell:~$ export BUCKET=cmpe258-assignment2-AG
arpatha_gurumurthy@cloudshell:~$ gsutil mb -p ${PROJECT_ID} -l us-central1 gs://${BUCKET}/
Creating gs://cmpe258-assignment2-AG/...
BadRequestException: 400 Invalid bucket name: 'cmpe258-assignment2-AG'
arpatha_gurumurthy@cloudshell:~$ export BUCKET=cmpe258-assignment2-arpatha
arpatha_gurumurthy@cloudshell:~$ gsutil mb -p ${PROJECT_ID} -l us-central1 gs://${BUCKET}/
Creating gs://cmpe258-assignment2-arpatha/...
arpatha_gurumurthy@cloudshell:~$ echo $BUCKET
cmpe258-assignment2-arpatha
arpatha_gurumurthy@cloudshell:~$
```

CREATING THE DATASET:

Hello AI Platform Customer,

AI Platform finished importing data into dataset "CMPE258_ImageClassificationDataset".

Additional Details:

Operation State: Succeeded

Resource Name: projects/27161981411/locations/us-central1/datasets/5418481262610350080

To continue your progress, go back to your dataset using <https://console.cloud.google.com/ai/platform/locations/us-central1/datasets/5418481262610350080;annotationSetId=1749736416163659776/browse?project=cmpe258-assignment2>

Sincerely,
The Google Cloud AI Team

CMPE258-Assignment2
Search products and resources

CMPE258_ImageClassificationDataset
CMPE258_ImageClassific...

IMPORT
BROWSE
ANALYZE



All 3,667
Labeled 3,667
Unlabeled 0

Filter labels +

- daisy 633
- dandelion 898
- roses 641
- sunflowers 697
- tulips 798

ADD NEW LABEL

Filter items
Select all

roses
daisy

Items per page: 10 1 - 10 of many

TRAINING THE AUTO ML TEXT CLASSIFICATION MODEL:

CMPE258-Assignment2

Search products and resources

Models

PREVIEW

+ CREATE

IMPORT

REFR

Models are built from your datasets or unmanaged data sources. There are many different types of machine learning models available on AI Platform, depending on your use case and level of experience with machine learning. [Learn more](#)

Region

us-central1 (Iowa)

Filter models...

Name	ID	Data	Endpoints	Region
CMPE258_ImageClassificationDataset_202122020713	5434454967538679808	CMPE258_ImageClassificationDataset_icn	1	us-central1

DEPLOYING THE MODEL TO ENDPOINT:

Model Evaluation:

CMPE258_ImageClassificationDataset_202122020713

VIEW DATASET

EVALUATE

DEPLOY & TEST

BATCH PREDICTIONS

MODEL PROPERTIES

Filter labels

Confidence threshold 0.5

All labels 0

sunflowers 0.99959

dandelion 0.99822

daisy 0.99596

roses 0.99039

tulips 0.98710

All labels

Average precision 0.995

Precision 95.9%

Recall 95.4%

Created Feb 20, 2021, 12:36:03 PM

Total images 3,667

Training images 2,933

Validation images 367


Test images 367






Use the slider to see which score threshold works best for your model on the precision-recall tradeoff curve. [Learn more about these metrics and graphs](#)

100%

100%

Deploy and test:

Endpoint	ID	Models	Region	Last updated	API	Notification	Metadata	Encryption
 hello_automl_image	1329511868120694784	1	us-central1	Feb 20, 2021, 2:21:10 PM	Sample request			Google-managed key


 	Model	Traffic split	Compute nodes	Type	Created	
 	CMPE258_ImageClassificationDataset_202122020713	100%	Auto (1 minimum, 1 maximum)	Image classification	Feb 20, 2021, 2:12:57 PM	

Testing the model predictions using a google image:

CMPE258-Assignment2

[← CMPE258_ImageClassificationDataset_202122020713](#) [VIEW DATASET](#)

EVALUATE **DEPLOY & TEST** BATCH PREDICTIONS MODEL PROPERTIES



roses	<div></div>	0.000
daisy	<div></div>	0.000
tulips	<div></div>	0.000
dandelion	<div></div>	0.953
sunflowers	<div></div>	0.047

Cleaning the project:

Delete bucket successful.

```
725289254...
Removing gs://cmpe258-assignment2-arpitha/img/flower_photos/tulips/9976515506_d496c5e72c.jpg/9446982168_06c4d71da3_n.jpg#1613846
725190451...
Removing gs://cmpe258-assignment2-arpitha/img/flower_photos/tulips/9976515506_d496c5e72c.jpg/9831362123_5aac525a99_n.jpg#1613846
725118568...
Removing gs://cmpe258-assignment2-arpitha/img/flower_photos/tulips/9976515506_d496c5e72c.jpg/9870557734_88eb3b9e3b_n.jpg#1613846
725236152...
Removing gs://cmpe258-assignment2-arpitha/img/flower_photos/tulips/9976515506_d496c5e72c.jpg/9947374414_fdf1d0861c_n.jpg#1613846
725217906...
Removing gs://cmpe258-assignment2-arpitha/img/flower_photos/tulips/9976515506_d496c5e72c.jpg/9947385346_3a8cacea02_n.jpg#1613846
725214646...
/ [3.7k/3.7k objects] 100% Done 171.61 objects/s ETA 00:00:00
Operation completed over 3.7k objects.
Removing gs://cmpe258-assignment2-arpitha/...
arpitha_gurumurthy@cloudshell:~ (cmpe258-assignment2) $
```