CMPE-258 HW Assignment 2 - AutoML-GCP
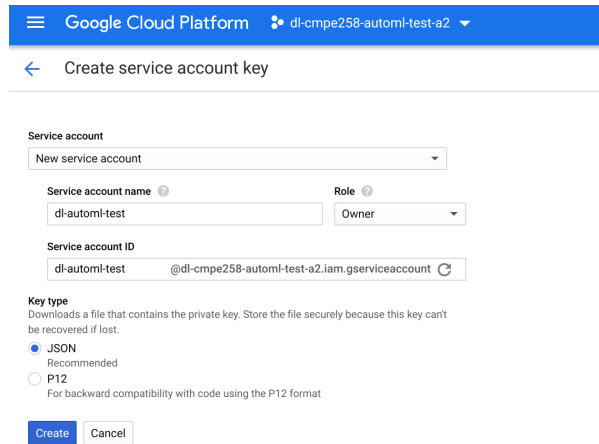
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March 10, 2021
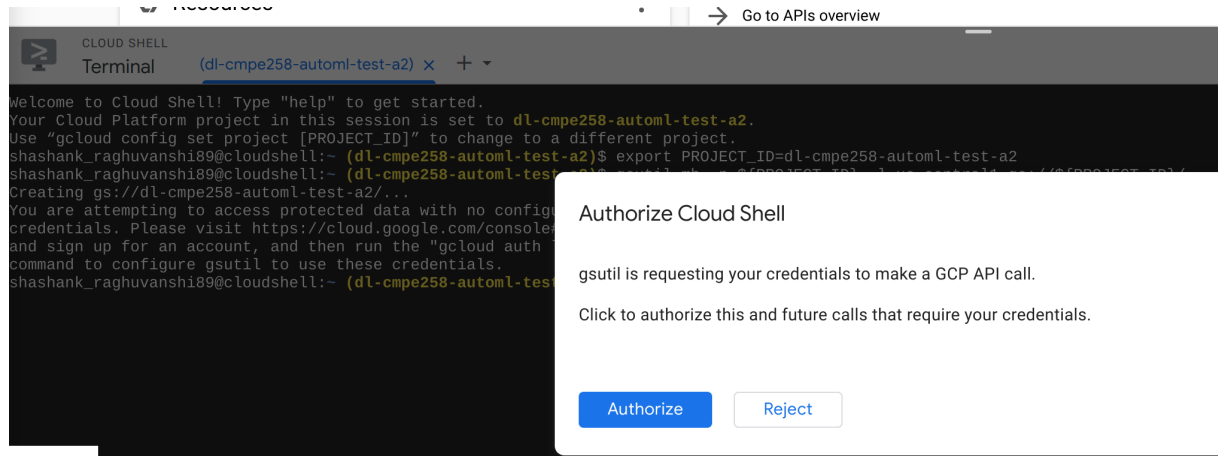
Contents

1 Basic Common Setup

1. Create project on google cloud console.

2. Enable the AI Platform (Unified) API.

3. Setup Authentication, Create Service account key (Specify account name, role and download the respective json)
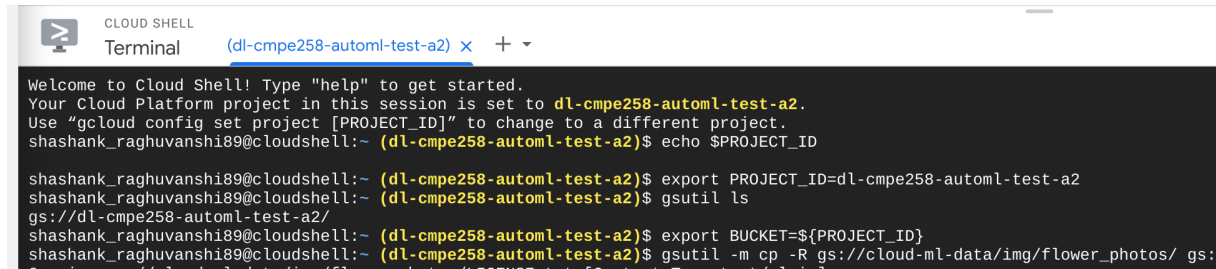

4. setup environment variable (GOOGLE_APPLICATION_CREDENTIALS) to point towards the downloaded json.

5. Start Cloud shell session

6. create a cloud storage bucket for storing the data for all of the following tutorials.

   (a) Set PROJECT_ID variable

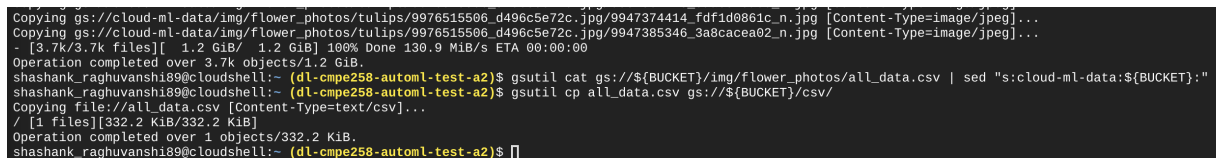(b) Use gsutil to create a bucket

(c) Set the BUCKET variable

2 Image Example

1. Copy Images of public Flower dataset to local bucket just created in previous step.

2. Create a csv file from the dataset to, change the path of images to point towards the copied images.

3. Copy the csv created in above step into the bucket.

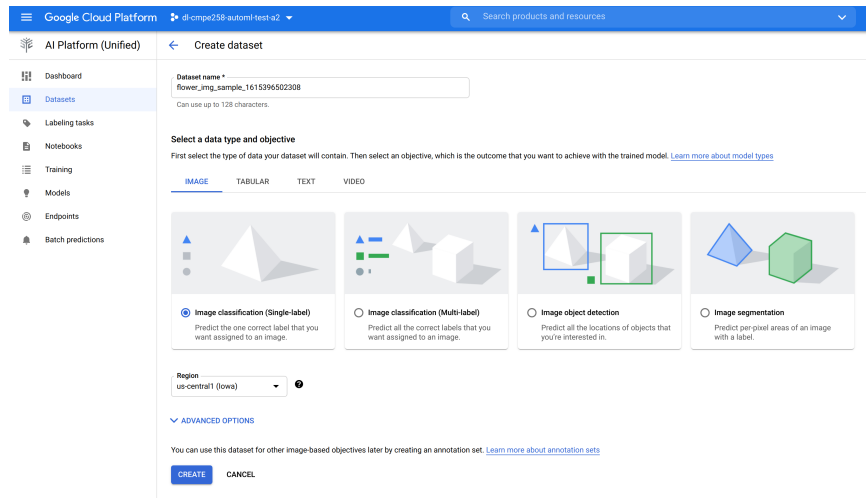
2.1 Create and Import Image Classification Dataset

Now we create a dataset from dashboard for image classification (single label).

1. Click create dataset and select region and image classification (single label) option.

2. After clicking create an empty dataset gets created, we then select the option to import the dataset from cloud bucket we just created in previous steps.
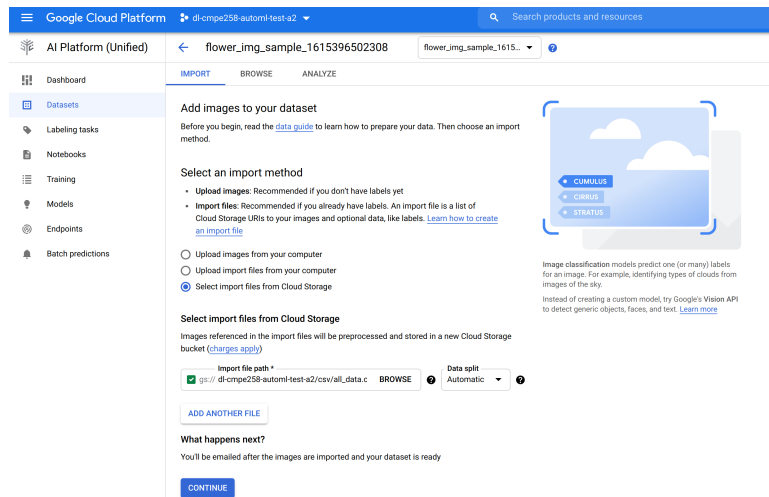
2.2   Training the automl image classification model

1. select models section and click create.

2. In Train New Model window select relevant options

3. Choose AutoML, specify node hour budget (I chose 8 hours), and then select start training.

4. After the training is finished we can select our model to see its performance metrics.
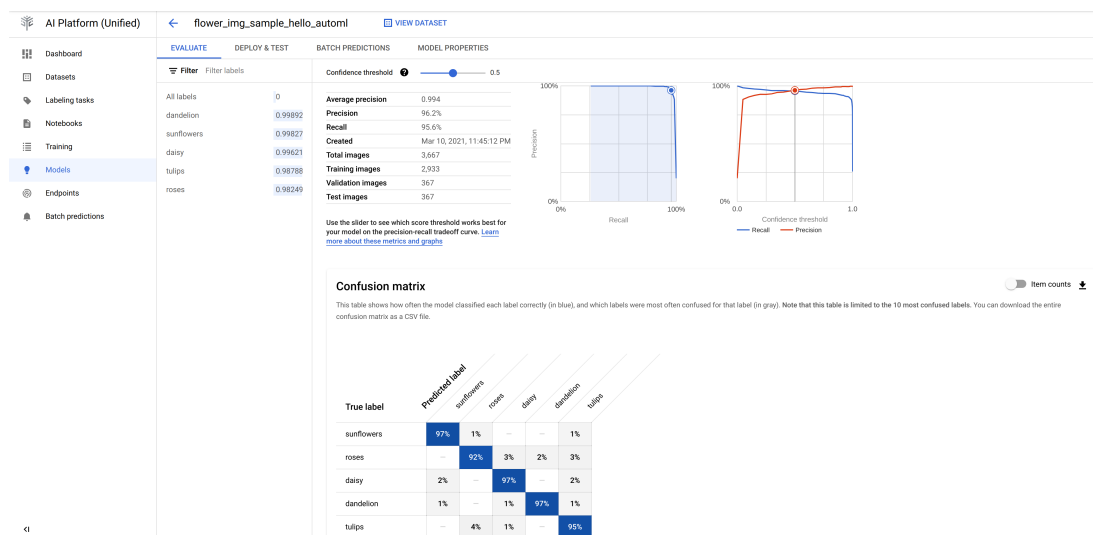
2.3 Deploy model to an endpoint and test its prediction with a new image sample

1. Choose deploy and test tab for creating an endpoint

2. Click Deploy To Endpoint, and fill in relevant details.
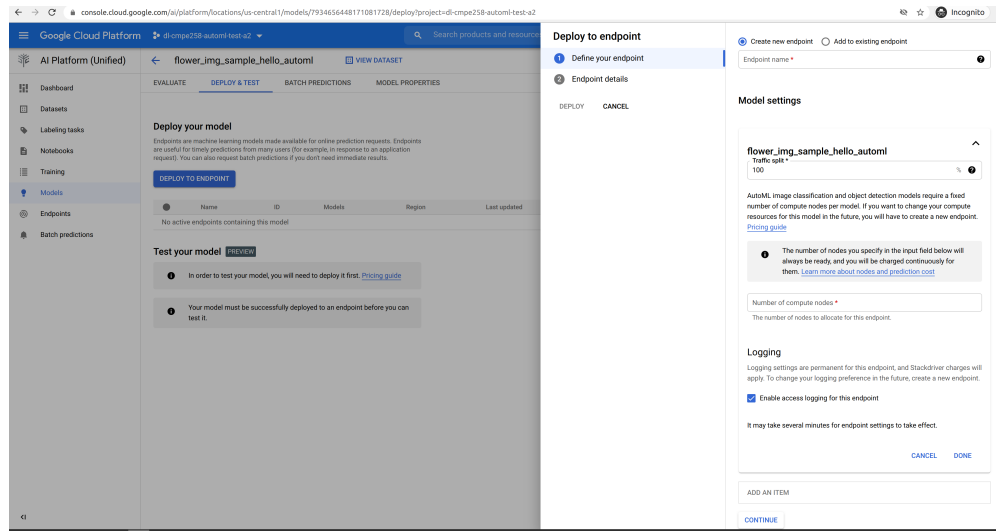
3. In the "Endpoint details" section, click Deploy to create your new endpoint.

4. Once the model is deployed we can test the model with a sample image on the dashboard itself.
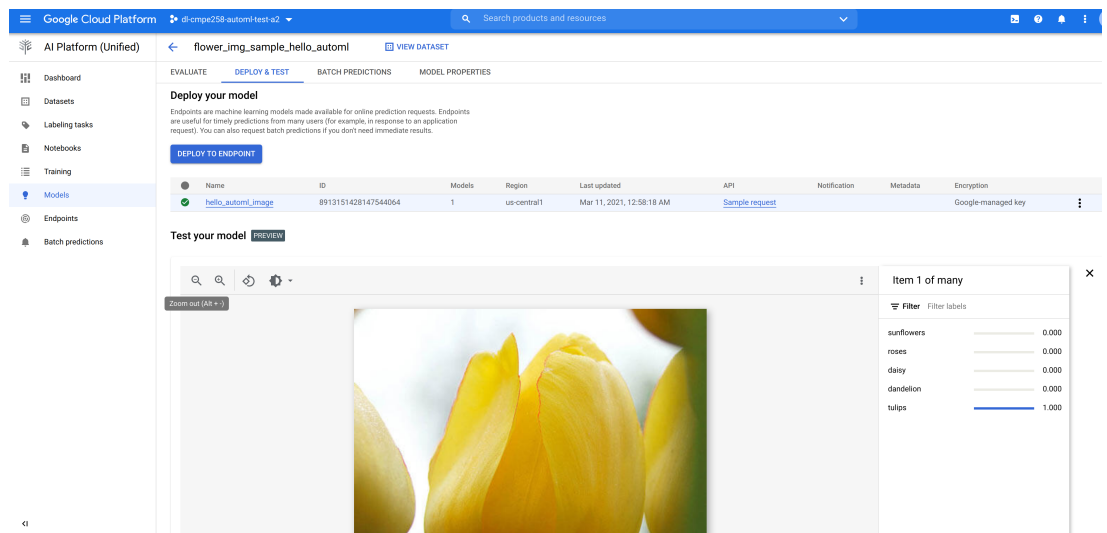
3 Text Example

1. Perform the basic setup as specified in section 1.

2. Copy the sample public text data happiness.csv to the bucket using gsutil.

```
CLOUD SHELL
Terminal        (dl-cmpe258-automl-test-a2)  ×  +  ▾                                    ✎ Open Editor

Welcome to Cloud Shell! Type "help" to get started.
Your Cloud Platform project in this session is set to dl-cmpe258-automl-test-a2.
Use "gcloud config set project [PROJECT_ID]" to change to a different project.
shashank_raghuvanshi89@cloudshell:~ (dl-cmpe258-automl-test-a2)$ echo $PROJECT_ID

shashank_raghuvanshi89@cloudshell:~ (dl-cmpe258-automl-test-a2)$ export PROJECT_ID=dl-cmpe258-automl-test-a2
shashank_raghuvanshi89@cloudshell:~ (dl-cmpe258-automl-test-a2)$ export BUCKET=${PROJECT_ID}-lcm
shashank_raghuvanshi89@cloudshell:~ (dl-cmpe258-automl-test-a2)$ gsutil ls
gs://cloud-ai-platform-2be834ad-e8c6-40ff-bd28-e6c085c75ad8/
gs://dl-cmpe258-automl-test-a2/
shashank_raghuvanshi89@cloudshell:~ (dl-cmpe258-automl-test-a2)$ export BUCKET=${PROJECT_ID}
shashank_raghuvanshi89@cloudshell:~ (dl-cmpe258-automl-test-a2)$ gsutil -m cp -R gs://cloud-ml-data/NL-classification/happiness.csv gs://${BUCKET}/text/
```