DESPLIEGUE DE MODELO DE ML EN AZURE

ESPECIALIZACIÓN EN ANALÍTICA – UDEA

DATA STREAMING Y SERVICIOS EN LA NUBE

POR :

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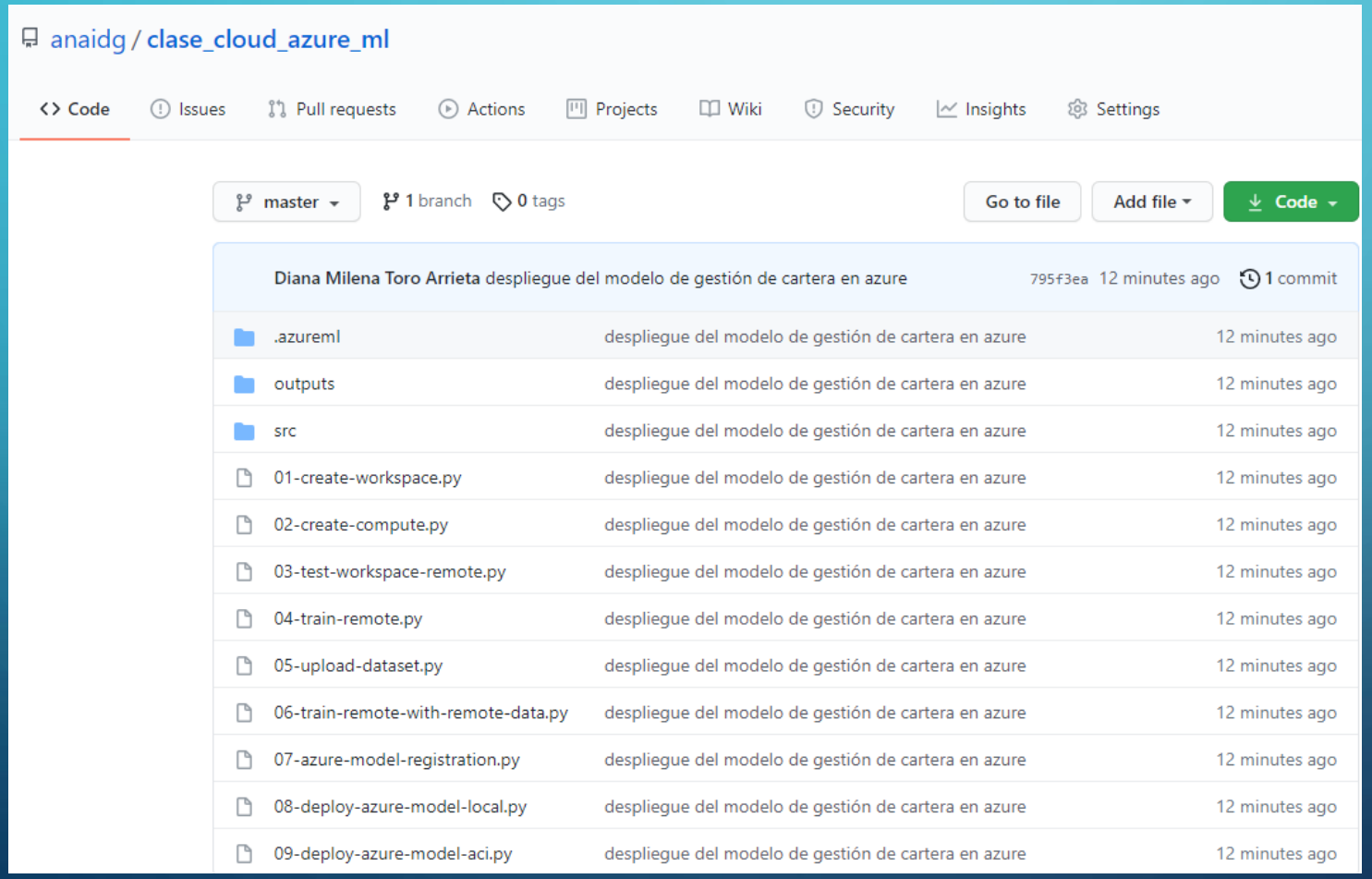
DIANA MILENA TORO ARRIETA

MODELO

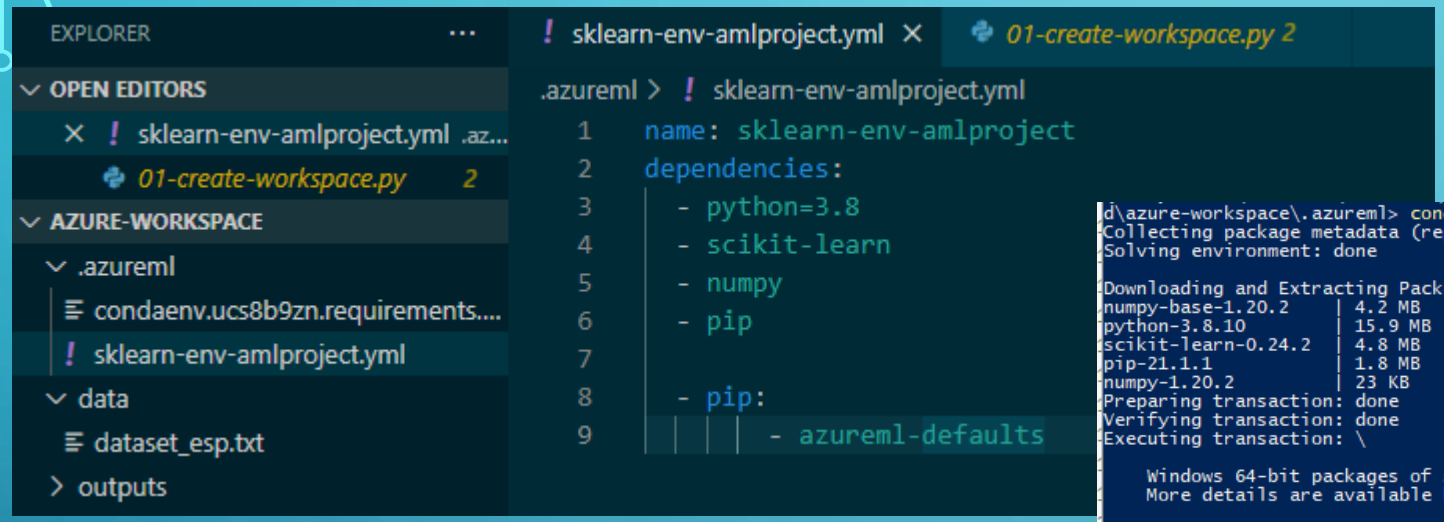
- Se hace entrenamiento de uno de los modelos usados para el proyecto de grado de la especialización en Analítica y ciencia de datos de a universidad de Antioquia. El cual consiste en predecir la probabilidad de que una empresa entre en mora el siguiente mes ejecutada la consulta.

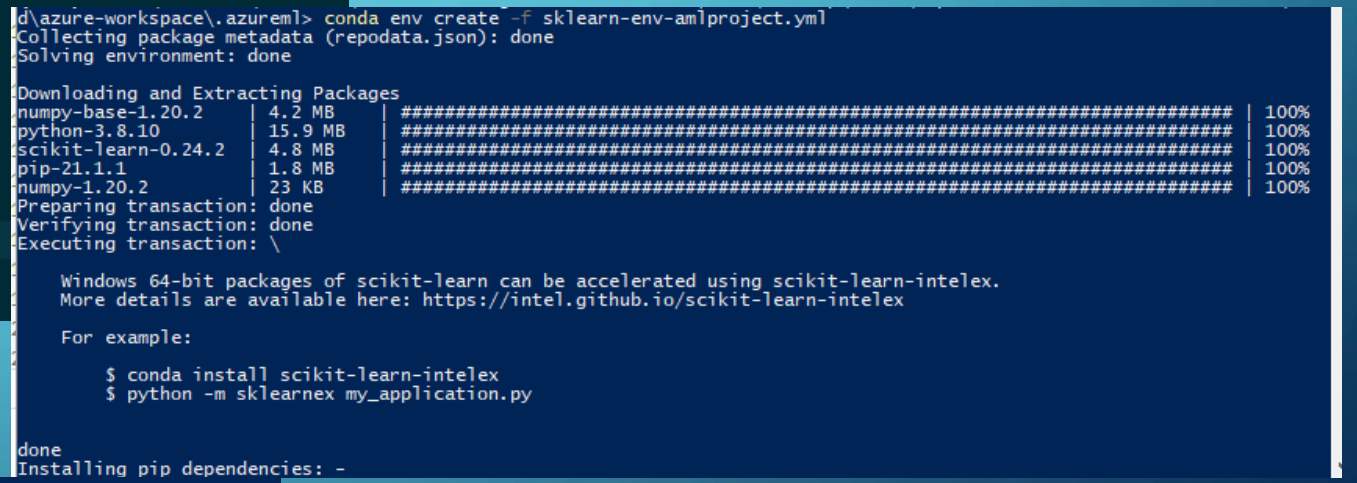
- El repositorio del código se encuentra en:

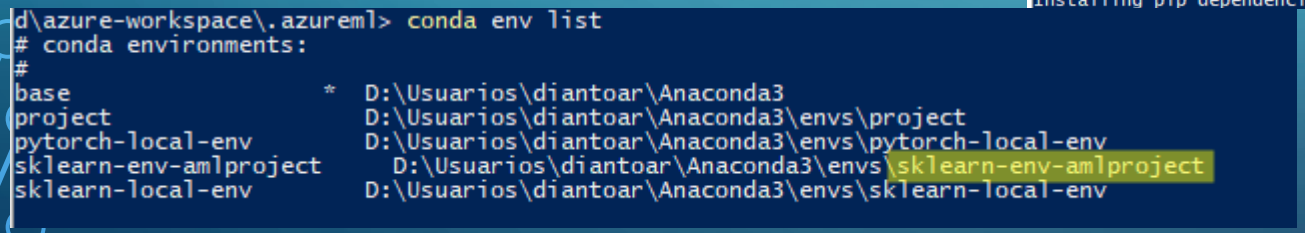
https://github.com/anaidg/clase_cloud_azure_ml.git



CREACIÓN DEL AMBIENTE DE TRABAJO EN ANACONDA DESDE UN ARCHIVO YAMEL





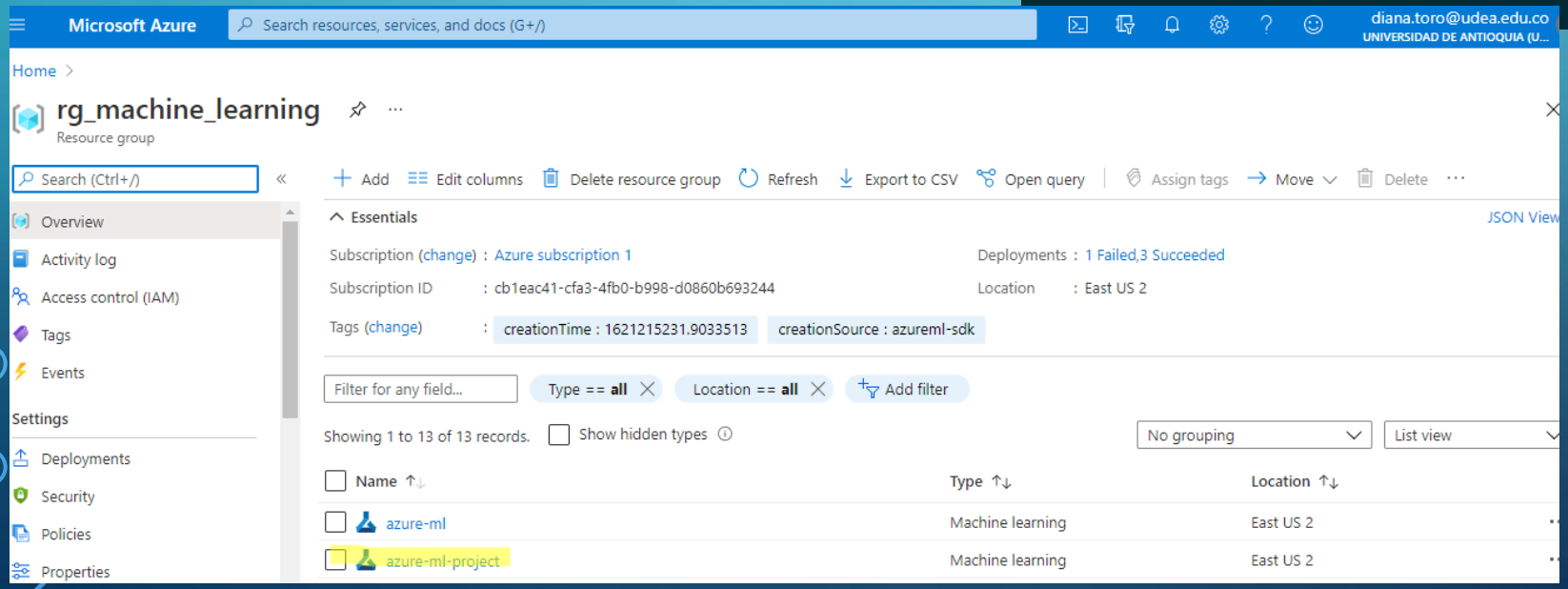


CREACIÓN DEL ESPACIO DE TRABAJO EN AZURE

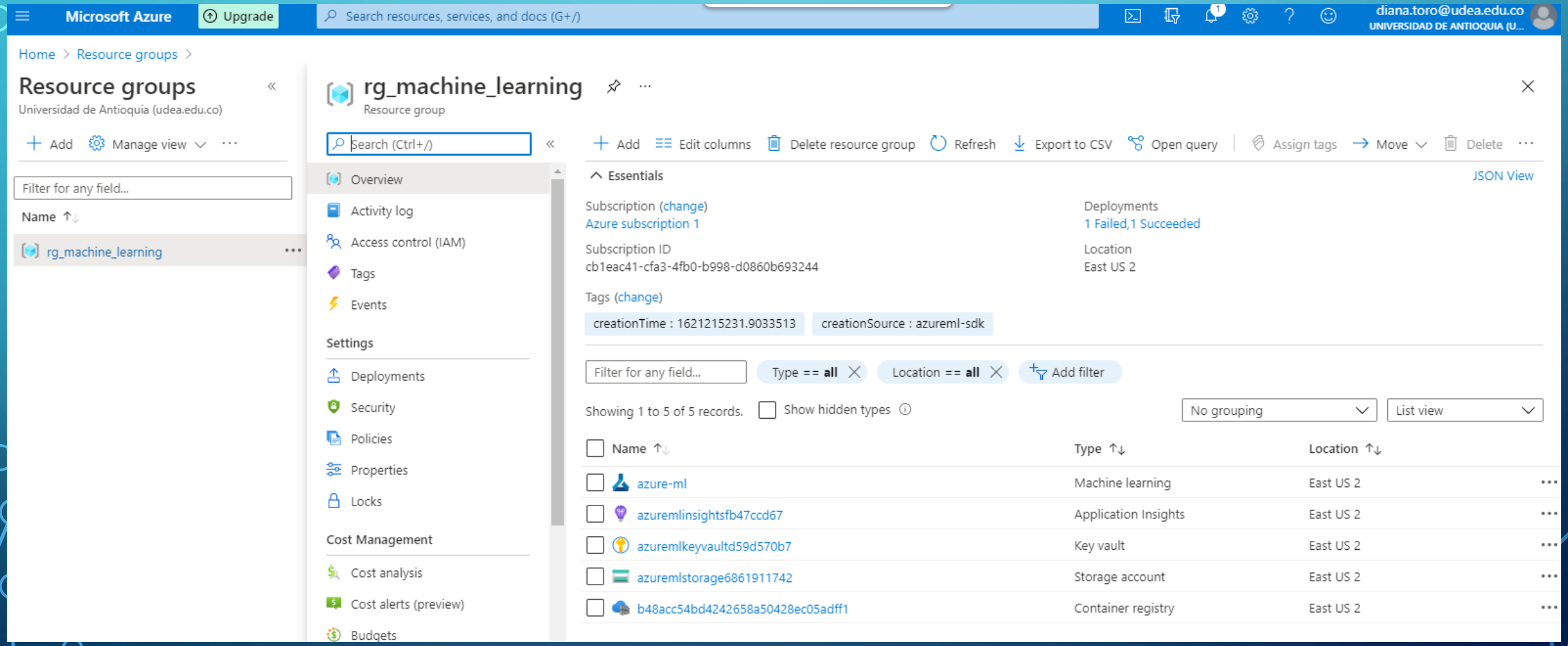
```
loud\azure-workspace> az login
The default web browser has been opened at https://login.microsoftonline.com/common/oauth2/authorize. Please continue th
e login in the web browser. If no web browser is available or if the web browser fails to open, use device code flow wit
h `az login --use-device-code`.
You have logged in. Now let us find all the subscriptions to which you have access...
[
  {
    "cloudName": "AzureCloud",
    "homeTenantId": "99e1e721-7184-498e-8aff-b2ad4e53c1c2",
    "id": "cb1eac41-cfa3-4fb0-b998-d0860b693244",
    "isDefault": true,
    "managedByTenants": [],
    "name": "Azure subscription 1",
    "state": "Enabled",
    "tenantId": "99e1e721-7184-498e-8aff-b2ad4e53c1c2",
    "user": {
      "name": "diana.toro@udea.edu.co",
      "type": "user"
    }
  }
```

01-create-workspace.py > ...

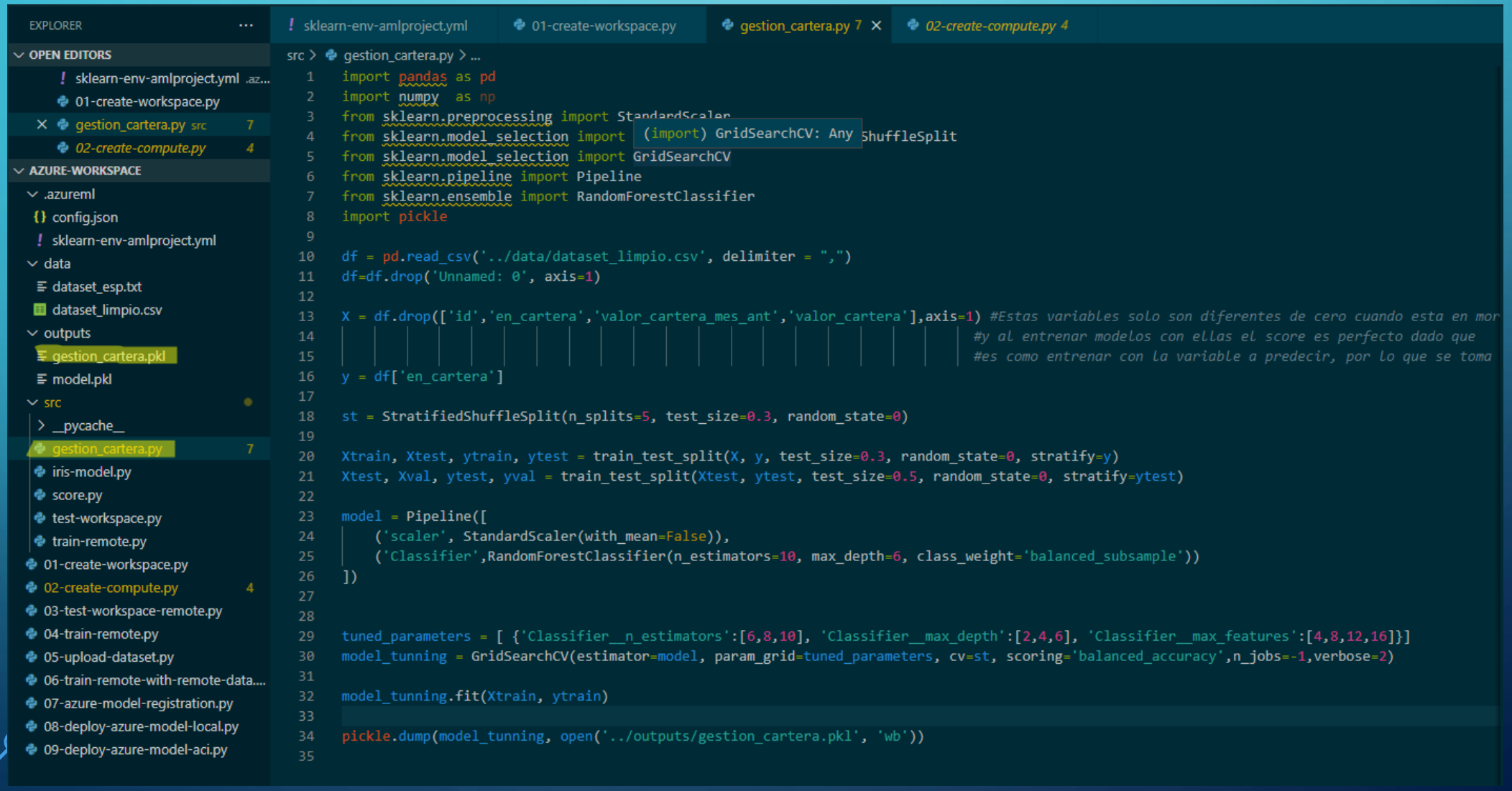
```python
# tutorial/01-create-workspace.py
from azureml.core.authentication import InteractiveLoginAuthentication
from azureml.core import Workspace

interactive_auth = InteractiveLoginAuthentication(tenant_id="99e1e721-7184-498e-8aff-b2ad4e53c1c2")
ws = Workspace.create(name='azure-ml-project',
                      subscription_id='cb1eac41-cfa3-4fb0-b998-d0860b693244',
                      resource_group='rg_machine_learning',
                      create_resource_group=False,
                      location='eastus2',
                      auth=interactive_auth
                      )

# write out the workspace details to a configuration file: .azureml/config.json
ws.write_config(path='.azureml')
```



GRUPO DE RECURSOS CREADOS EN LA CUENTA DE AZURE

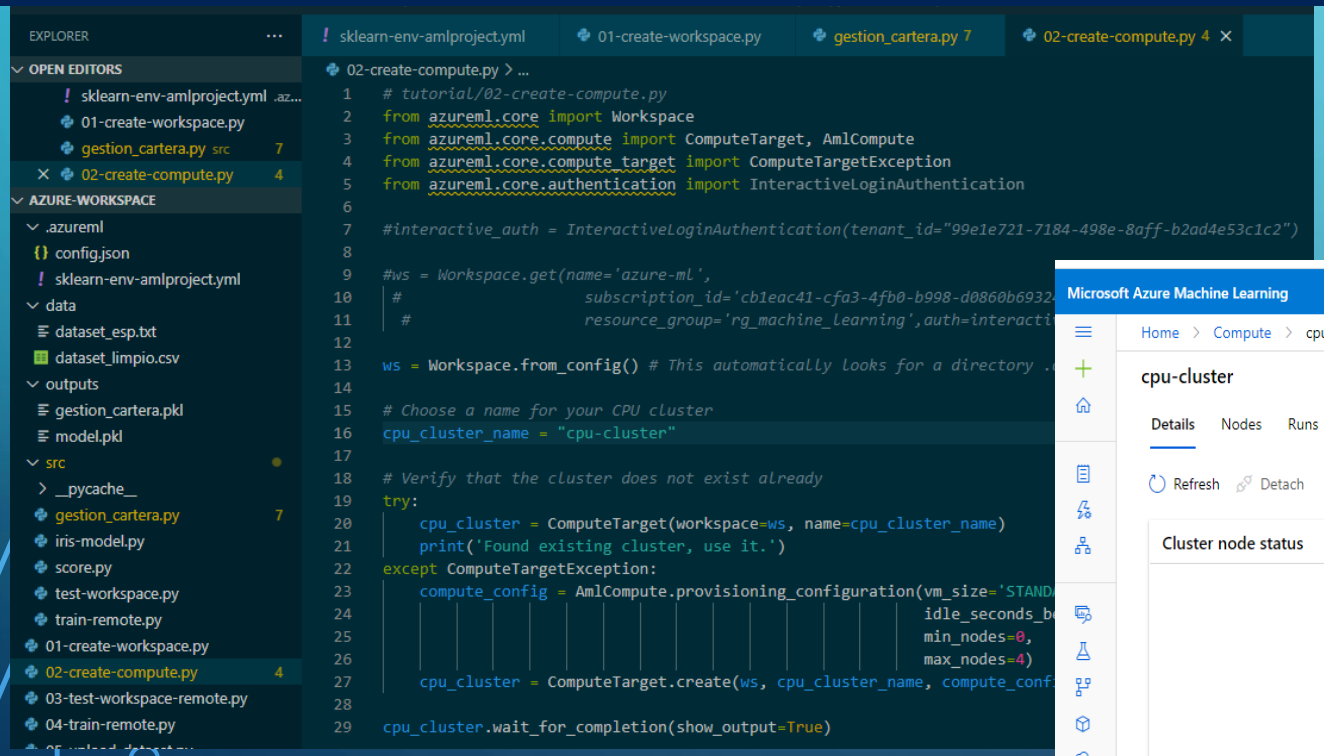


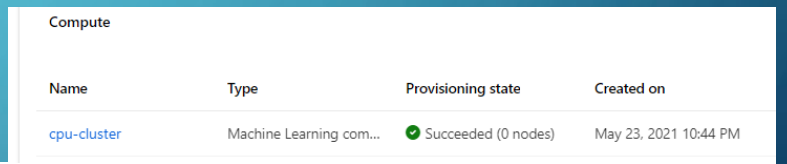
ENTRENAMIENTO DEL MODELO Y GENERACIÓN DEL ARCHIVO .PKL QUE CONTIENE EL MODELO ENTRENADO

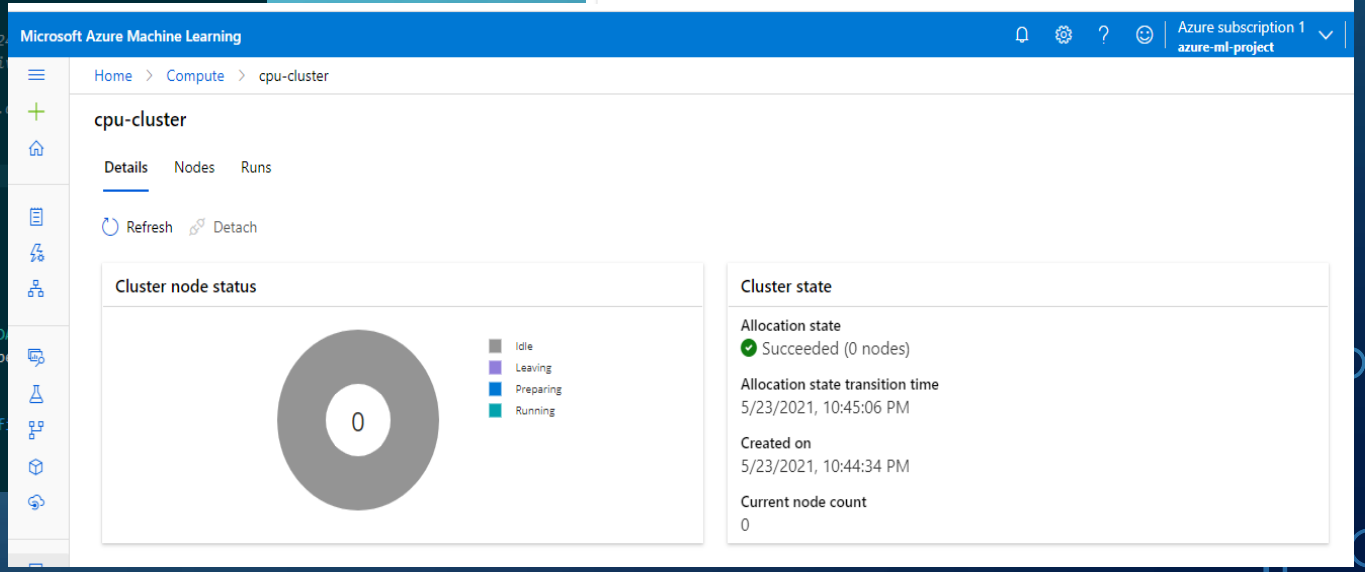


CREAMOS EL CLUSTER O MAQUINA PARA QUE CORRA EL MODELO

```
(sklearn-env-amlproject) PS D:\Usuarios\diantoar\OneDrive - Seguros Suramericana, S.A\Desktop\dtoro\especializacion Analisis de datos\cloud\azure-workspace> python 02-create-compute.py
Warning: Falling back to use azure cli login credentials.
If you run your code in unattended mode, i.e., where you can't give a user input, then we recommend to use ServicePrincipalAuthentication or MsiAuthentication.
Please refer to aka.ms/aml-notebook-auth for different authentication mechanisms in azureml-sdk.
Creating.........
SucceededProvisioning operation finished, operation "Succeeded"
Succeeded
AmlCompute wait for completion finished

Minimum number of nodes requested have been provisioned
(sklearn-env-amlproject) PS D:\Usuarios\diantoar\OneDrive - Seguros Suramericana, S.A\Desktop\dtoro\especializacion Analisis de datos\cloud\azure-workspace>
```

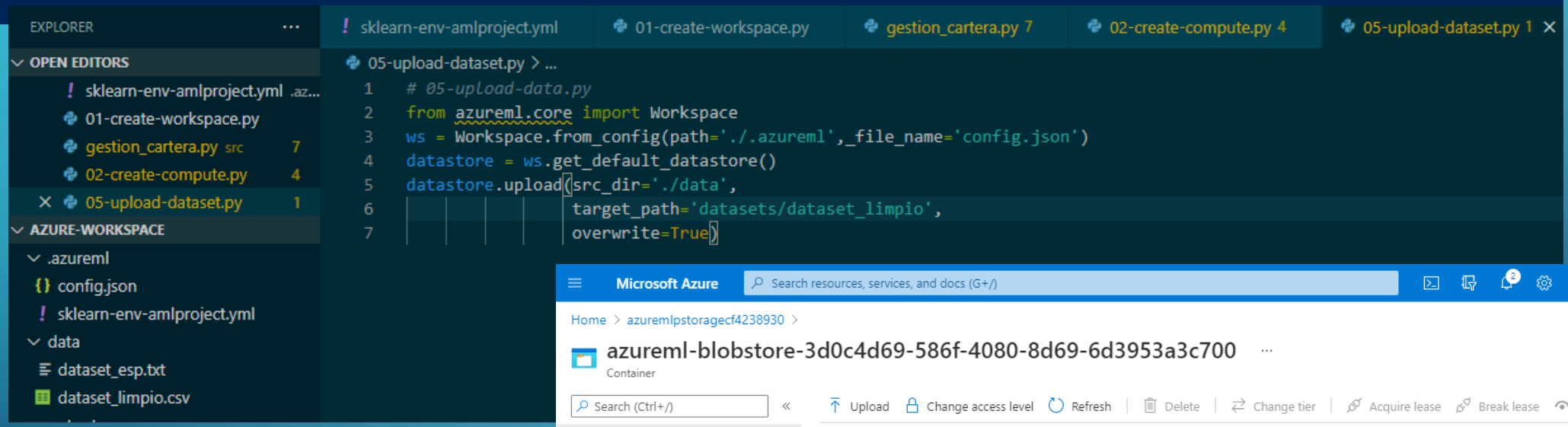


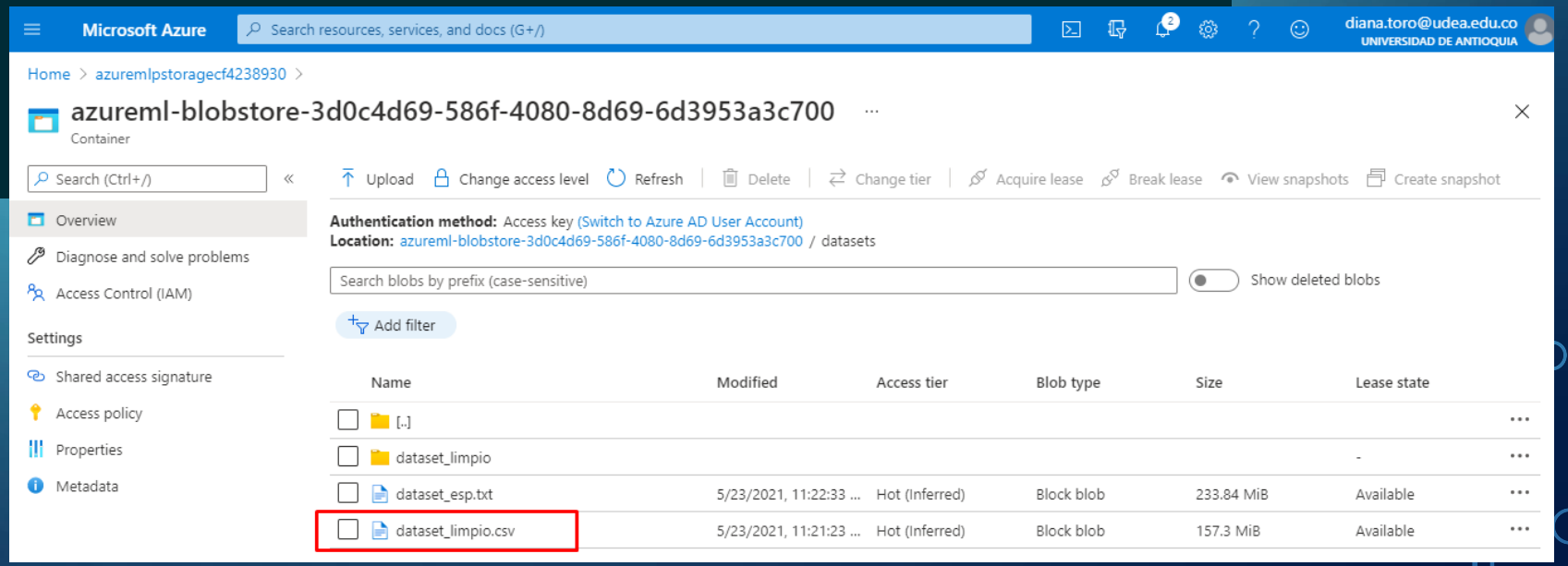




CARGA DEL DATA SET EN AZURE

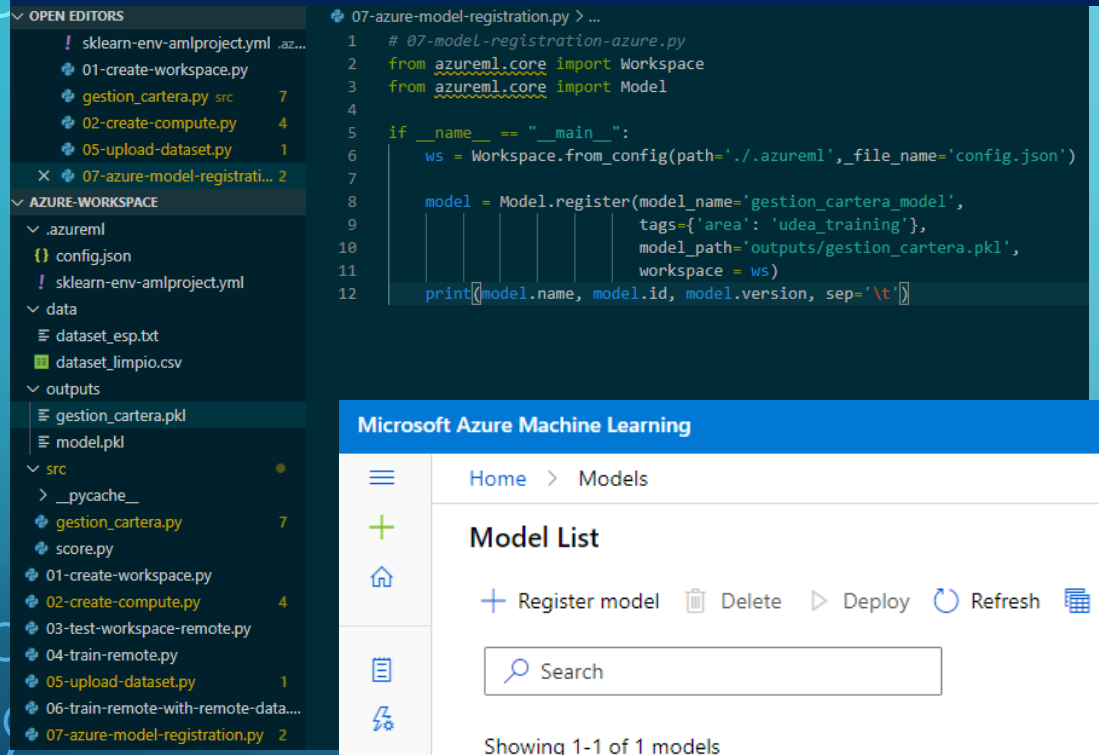
```
(sklearn-env-amlproject) PS D:\Usuarios\diantoar\OneDrive - Seguros Suramericana, S.A\Desktop\dtoro\especializacion Analisis de datos\cloud\azure-workspace> python 05-upload-dataset.py
Warning: Falling back to use azure cli login credentials.
If you run your code in unattended mode, i.e., where you can't give a user input, then we recommend to use ServicePrincipalAuthentication or MsiAuthentication.
Please refer to aka.ms/aml-notebook-auth for different authentication mechanisms in azureml-sdk.
Uploading an estimated of 2 files
Uploading ./data\dataset_limpio.csv
Uploaded ./data\dataset_limpio.csv, 1 files out of an estimated total of 2
Uploading ./data\dataset_esp.txt
Uploaded ./data\dataset_esp.txt, 2 files out of an estimated total of 2
Uploaded 2 files
(sklearn-env-amlproject) PS D:\Usuarios\diantoar\OneDrive - Seguros Suramericana, S.A\Desktop\dtoro\especializacion Analisis de datos\cloud\azure-workspace>
```



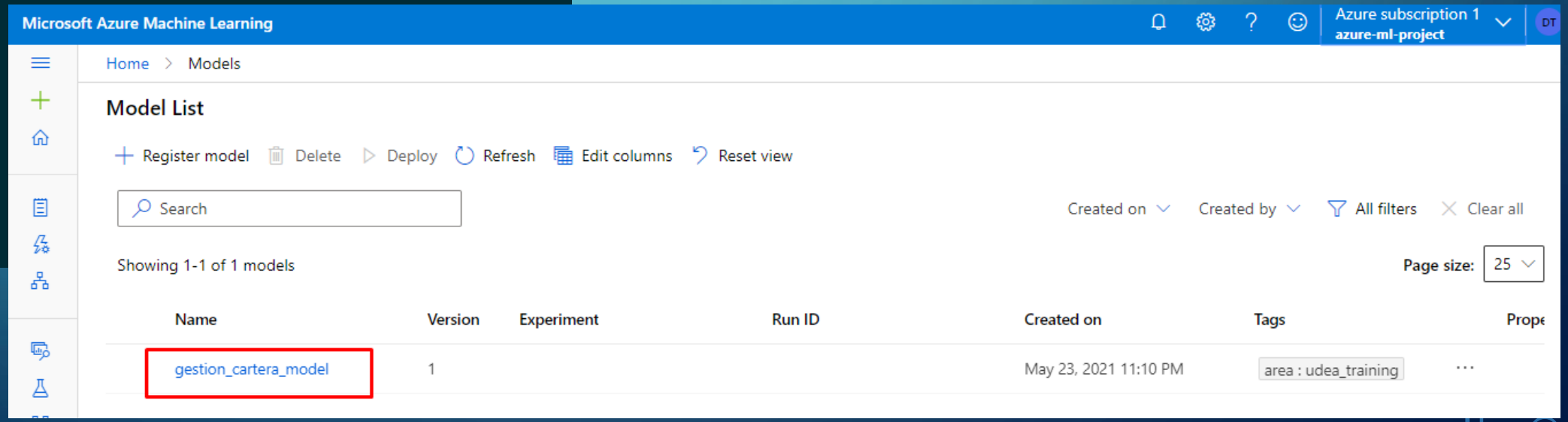


REGISTRO DEL MODELO EN AZURE

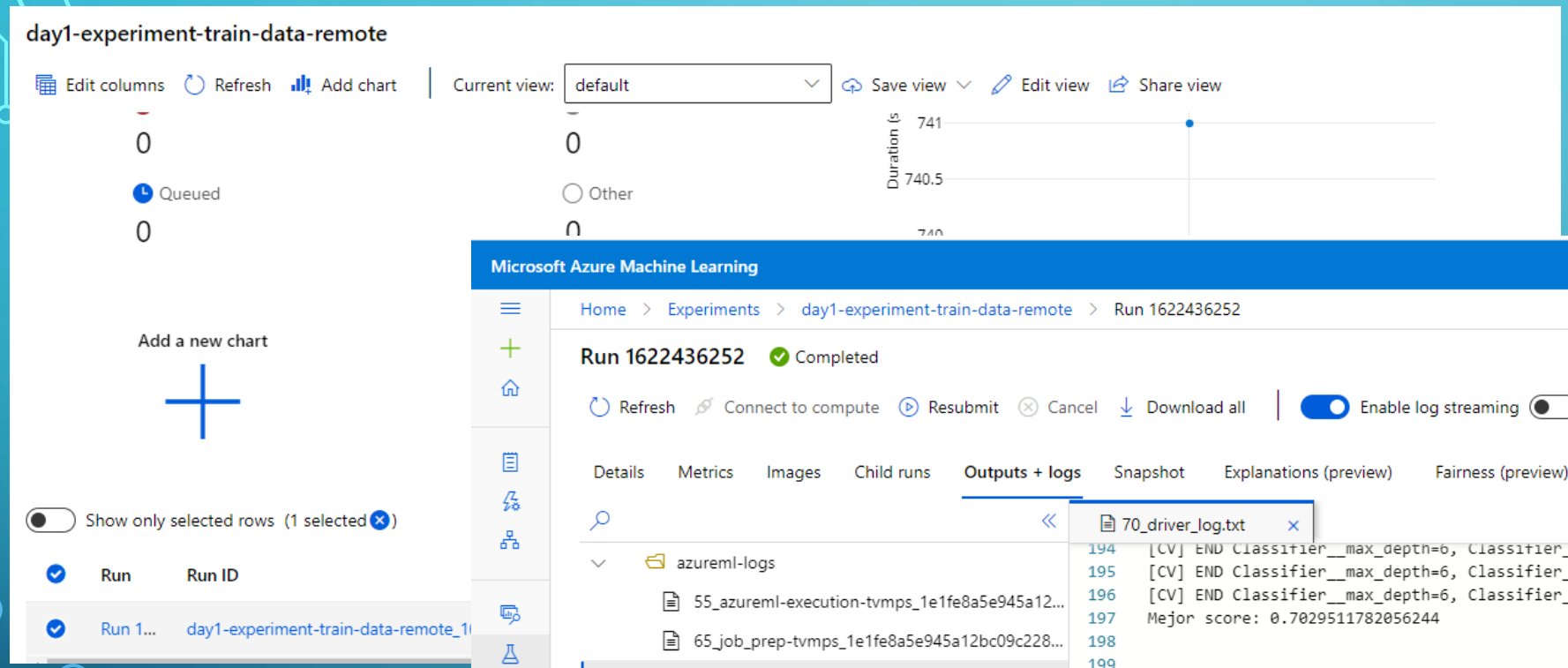
```
(sklearn-env-amlproject) PS D:\Usuarios\diantoar\OneDrive - Seguros Suramericana, S.A\Desktop\dtoro\especializacion Analisis de datos\cloud\azure-workspace> python .\07-azure-model-registration.py
Warning: Falling back to use azure cli login credentials.
If you run your code in unattended mode, i.e., where you can't give a user input, then we recommend to use ServicePrincipalAuthentication or MsiAuthentication.
Please refer to aka.ms/aml-notebook-auth for different authentication mechanisms in azureml-sdk.
Registering model gestion_cartera_model
gestion_cartera_model    gestion_cartera_model:1 1
(sklearn-env-amlproject) PS D:\Usuarios\diantoar\OneDrive - Seguros Suramericana, S.A\Desktop\dtoro\especializacion Analisis de datos\cloud\azure-workspace>
```

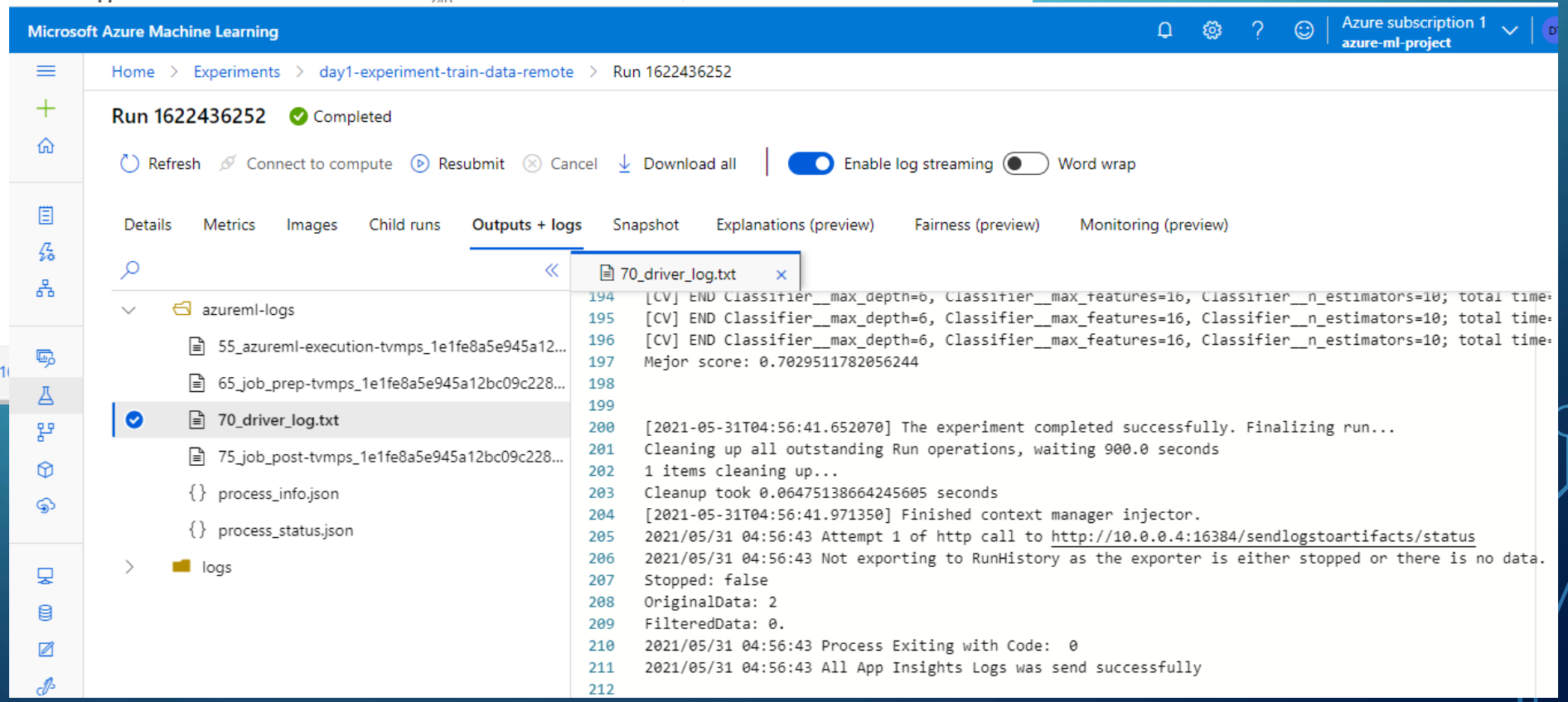



```python
# 07-model-registration-azure.py
from azureml.core import Workspace
from azureml.core import Model

if __name__ == "__main__":
    ws = Workspace.from_config(path='./.azureml',_file_name='config.json')

    model = Model.register(model_name='gestion_cartera_model',
                           tags={'area': 'udea_training'},
                           model_path='outputs/gestion_cartera.pkl',
                           workspace = ws)
    print(model.name, model.id, model.version, sep='\t')
```



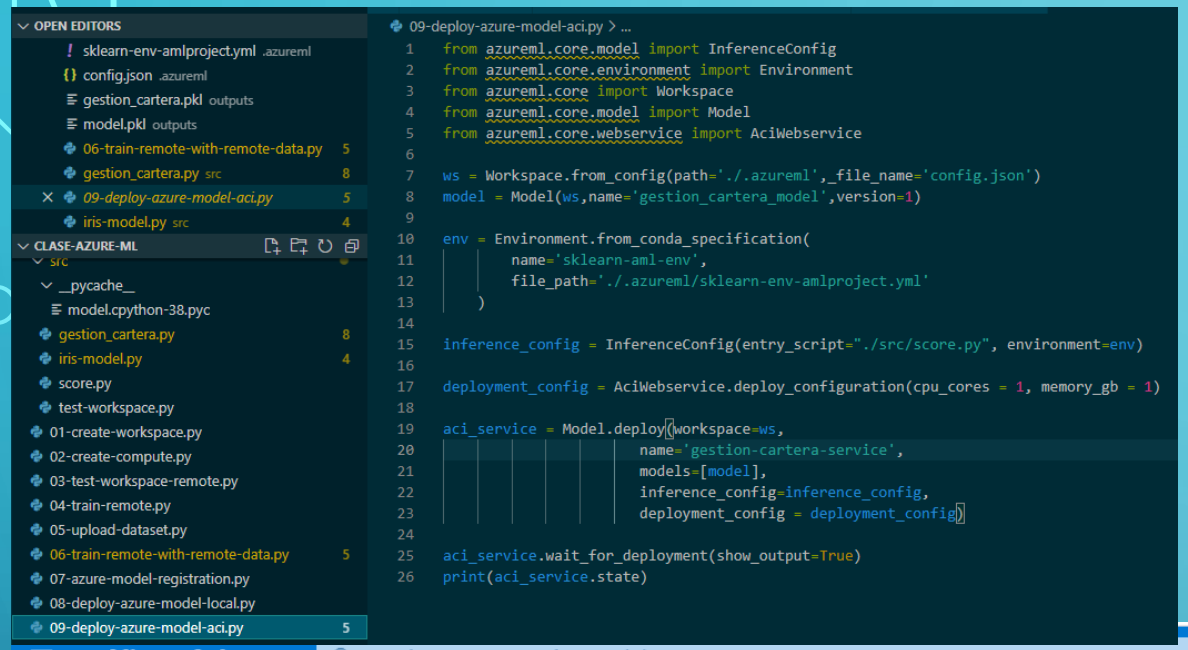
ENTRENAMIENTO DEL MODELO EN AZURE

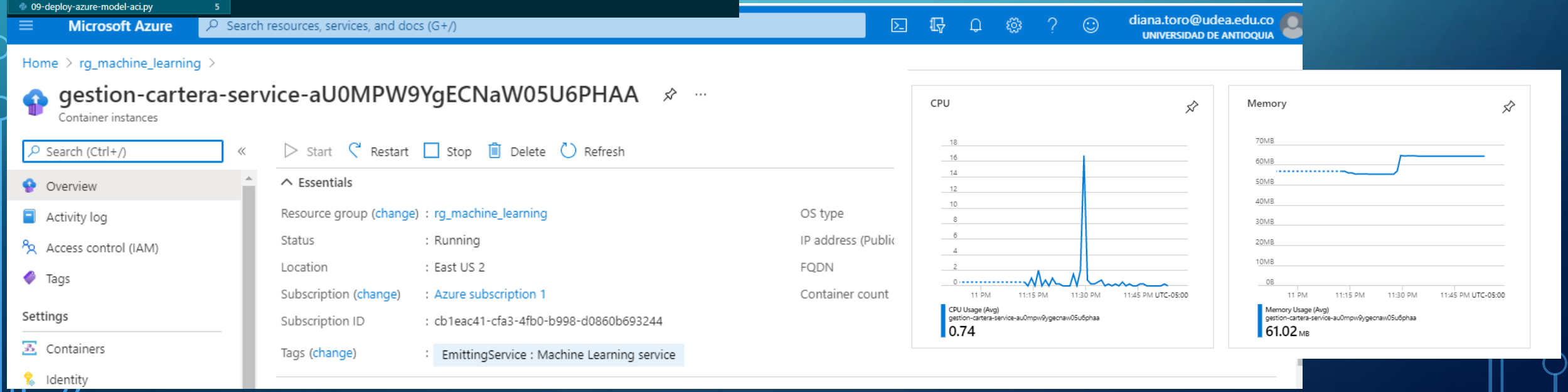




CREACIÓN DEL SERVICIO Y DESPLIEGUE EN AZURE

En este paso se crea el container y se crea el servicio





SERVICIO DESPLEGADO EN AZURE COMO SERVICIO

Endpoints

Real-time endpoints | Pipeline endpoints

+ Create (preview) | Delete | Refresh | Edit columns | Reset view

Compute type

Showing 1-1 endpoints

Name	Description	Created on	Created by	Updated on ↓	Compute type
gestion-cartera-service		May 30, 2021 11:03 PM	diana toro	May 30, 2021 11:03 PM	Container instar

gestion-cartera-service

Details | Test | Consume | Deployment logs

Attributes

Service ID
gestion-cartera-service

Description
--

Deployment state
Unhealthy

Compute type
Container instance

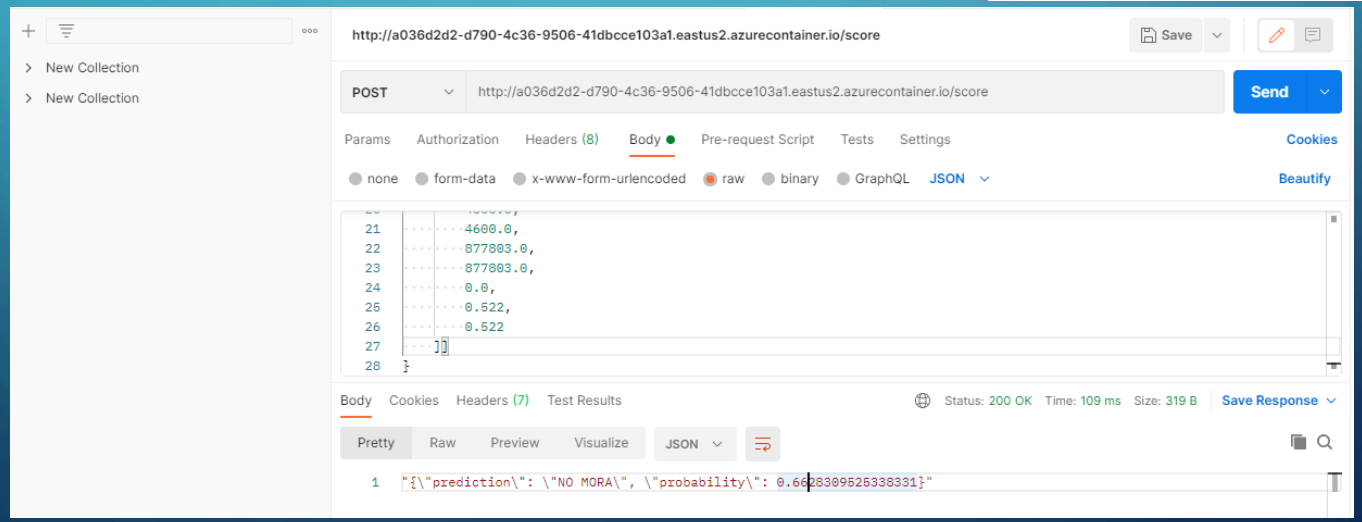
Created by
diana toro

Model ID
gestion_cartera_model:1

Created on
5/30/2021 11:03:27 PM

Last updated on
5/30/2021 11:03:27 PM

Image ID
--

REST endpoint
http://a036d2d2-d790-4c36-9506-41dbcce103a1.eastus2.azurecontainer.io/score

PRUEBA DEL SERVICIO CON POSTMAN