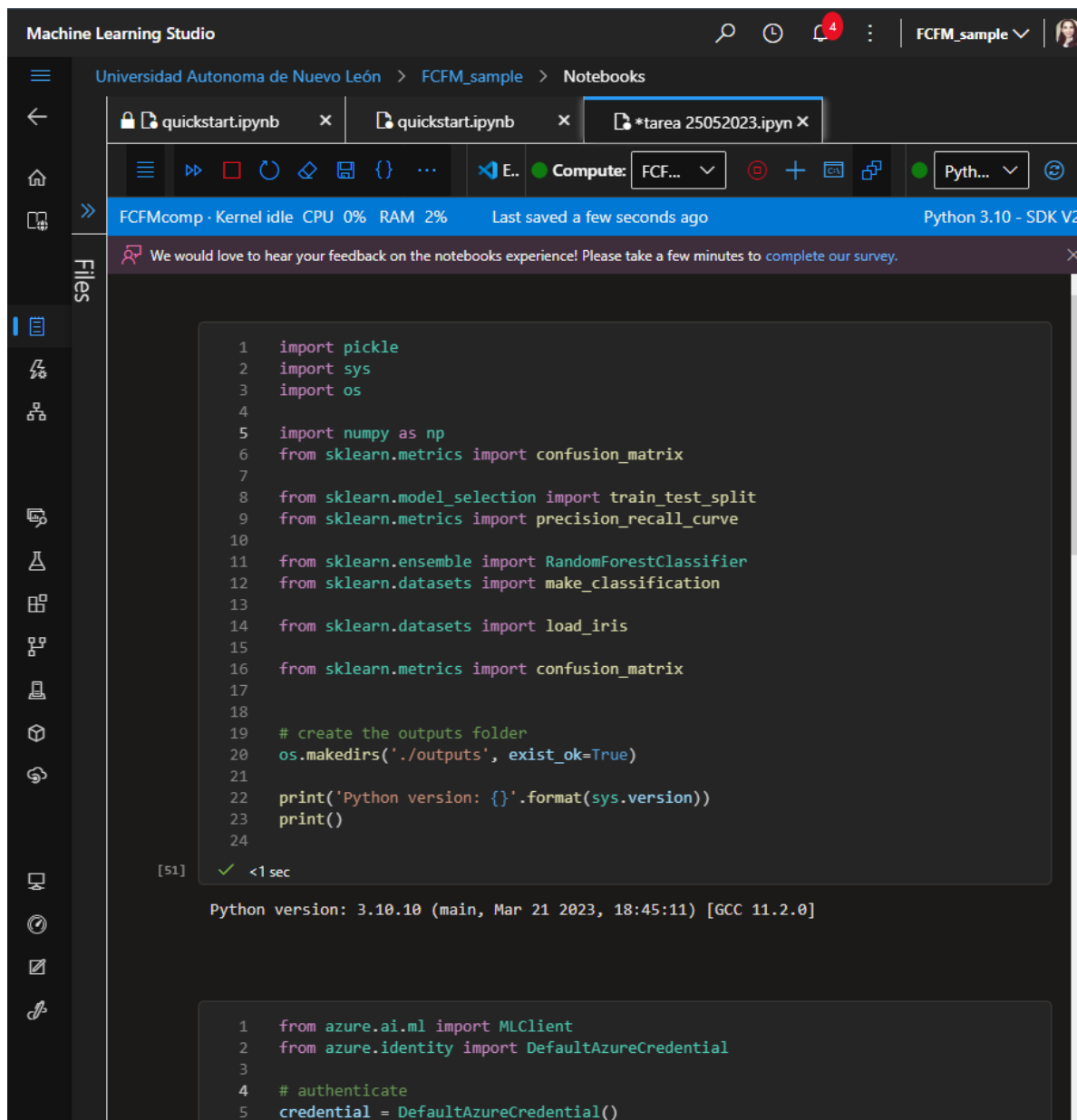


Ejemplo de un modelo de clasificación con el conjunto de iris en azure machine learning studio.



The screenshot displays the Azure Machine Learning Studio environment. The top navigation bar shows the path: Universidad Autonoma de Nuevo León > FCFM_sample > Notebooks. The notebook is titled '*tarea 25052023.ipynb'. The left sidebar contains a 'Files' panel with various icons for file management. The main area shows a Jupyter Notebook with the following Python code:

```
1 import pickle
2 import sys
3 import os
4
5 import numpy as np
6 from sklearn.metrics import confusion_matrix
7
8 from sklearn.model_selection import train_test_split
9 from sklearn.metrics import precision_recall_curve
10
11 from sklearn.ensemble import RandomForestClassifier
12 from sklearn.datasets import make_classification
13
14 from sklearn.datasets import load_iris
15
16 from sklearn.metrics import confusion_matrix
17
18
19 # create the outputs folder
20 os.makedirs('./outputs', exist_ok=True)
21
22 print('Python version: {}'.format(sys.version))
23 print()
24
```

The code is executed, and the output shows the Python version: 3.10.10 (main, Mar 21 2023, 18:45:11) [GCC 11.2.0].

```
1 from azure.ai.ml import MLClient
2 from azure.identity import DefaultAzureCredential
3
4 # authenticate
5 credential = DefaultAzureCredential()
```

Machine Learning Studio

Universidad Autonoma de Nuevo León > FCFM_sample > Notebooks

quickstart.ipynb x quickstart.ipynb x *tarea 25052023.ipyn x

FCFMcomp · Kernel idle CPU 0% RAM 2% Last saved a few seconds ago Python 3.10 - SDK V2

We would love to hear your feedback on the notebooks experience! Please take a few minutes to complete our survey.

Python version: 3.10.10 (main, Mar 21 2023, 18:45:11) [GCC 11.2.0]

```
1 from azure.ai.ml import MLClient
2 from azure.identity import DefaultAzureCredential
3
4 # authenticate
5 credential = DefaultAzureCredential()
6
7 # Get a handle to the workspace
8 ml_client = MLClient(
9     credential=credential,
10    subscription=
11    resource_group=
12    workspace_name=
13 )
```

[52] ✓ <1 sec

```
1 iris = load_iris()
2
3 X, Y = iris.data, iris.target
4
5 X_train, X_test, Y_train, Y_test = train_test_split(X, Y, test_size=0.35, random_state=42)
6
```

[53] ✓ <1 sec

```
1
2 clf = RandomForestClassifier(max_depth=2, random_state=0)
3 clf.fit(X_train, Y_train)
4 print (clf)
5
```

Machine Learning Studio

Universidad Autonoma de Nuevo León > FCFM_sample > Notebooks

quickstart.ipynb x quickstart.ipynb x *tarea 25052023.ipyn x

FCFmcomp · Kernel idle CPU 0% RAM 2% Last saved a few seconds ago Python 3.10 - SDK

We would love to hear your feedback on the notebooks experience! Please take a few minutes to complete our survey.

```
1
2 clf = RandomForestClassifier(max_depth=2, random_state=0)
3 clf.fit(X_train, Y_train)
4 print (clf)
5
6
7 accuracy = clf.score(X_test, Y_test)
8 print ("Accuracy is {}".format(accuracy))
9
10
11 y_scores = clf.predict(X_test)
12 cm = confusion_matrix(Y_test, y_scores)
13 print("confusion matrix \n", cm)
14
15
16 print("")
17 print("=====")
18 print("Serialize and deserialize using the outputs folder.")
19 print("")
20
21 print ("Export the model to model.pkl")
22 f = open('./outputs/model.pkl', 'wb')
23 pickle.dump(clf, f)
24 f.close()
25
26 print("Import the model from model.pkl")
27 f2 = open('./outputs/model.pkl', 'rb')
28 clf2 = pickle.load(f2)
29
30 X_new = [[5.5,2.4,3.8,1.1]]
31 print ('New sample: {}'.format(X_new))
32
33 print('prediction is ', clf.predict(X_new) )
```

[54] ✓ <1 sec

```
... RandomForestClassifier(max_depth=2, random_state=0)
Accuracy is 0.9433962264150944
confusion matrix
[[16 0 0]
```

Machine Learning Studio

Universidad Autonoma de Nuevo León > FCFM_sample > Notebooks

quickstart.ipynb x quickstart.ipynb x *tarea 25052023.ipyn x

FCFmcomp · Kernel idle CPU 0% RAM 2% Last saved a few seconds ago Python 3.10 - SDK V

We would love to hear your feedback on the notebooks experience! Please take a few minutes to complete our survey.

```
22 f = open('./outputs/model.pkl', 'wb')
23 pickle.dump(clf, f)
24 f.close()
25
26 print("Import the model from model.pkl")
27 f2 = open('./outputs/model.pkl', 'rb')
28 clf2 = pickle.load(f2)
29
30 X_new = [[5.5, 2.4, 3.8, 1.1]]
31 print('New sample: {}'.format(X_new))
32
33 print('prediction is ', clf.predict(X_new))
```

[54] ✓ <1 sec

```
... RandomForestClassifier(max_depth=2, random_state=0)
Accuracy is 0.9433962264150944
confusion matrix
[[16  0  0]
 [ 0 20  1]
 [ 0  2 14]]

=====
Serialize and deserialize using the outputs folder.

Export the model to model.pkl
Import the model from model.pkl
New sample: [[5.5, 2.4, 3.8, 1.1]]
prediction is [1]
```