

Atelier-Azure ML-DevOps

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MOHAMED VI POLYTECHNIC UNIVERSITY

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University
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Polytechnic

Compilation

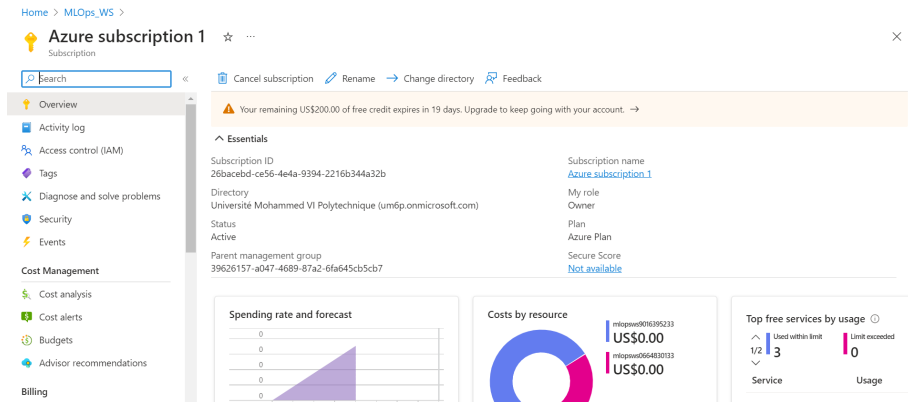


Figure: Azure Subscription

Compute

Azure AI | Machine Learning Studio

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Compute

The "Kubernetes clusters" tab is now where you can access previous versions of "inference clusters" (also known as "AKS clusters") and "attached Kubernetes" compute types along with any previously created compute targets using those types. [Learn more](#) about Kubernetes clusters.

Compute instances Compute clusters Kubernetes clusters Attached computes

Choose from a selection of CPU or GPU instances preconfigured with popular tools such as VS Code, JupyterLab, Jupyter, and RStudio, ML packages, deep learning frameworks, and GPU drivers. [Learn more about compute instances](#)

+ New Refresh Start Stop Restart Schedule and idle shutdown Delete View c View quota

Search Filter Columns

Name	☆	State	Idle shutdown	Applications ⓘ
AITHAMZA-Azure		Running ⓘ	1 hour	JupyterLab Jupyter VS Code (Web) PREVIEW ...

Figure: Compute

Compute

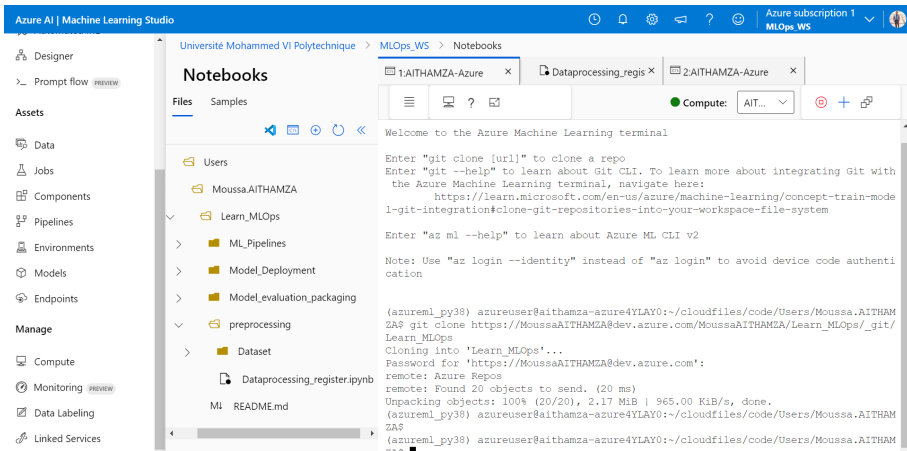


Figure: Cloning on compute

Clone

The screenshot displays the Azure DevOps web interface. On the left, a sidebar shows navigation options: Overview, Boards, Repos (selected), Files, Commits, Pushes, Branches, Tags, Pull requests, Advanced Security, and Pipelines. The main area is divided into two panes. The left pane shows the 'Learn_MLOps' repository structure with folders: ML_Pipelines, Model_Deployment, Model_evaluation_packaging, and preprocessing, and a file: README.md. The right pane shows the 'Files' view for the 'master' branch, with a search bar and a 'Set up build' button. Below the search bar, there's a 'Contents' tab selected, showing a table of files and their commit history. A 'Clone' button is visible in the top right of the file view area.

Name ↑	Last change	Commits
ML_Pipelines	Nov 21, 2021	698a4f91 done fahd kallo...
Model_Deployment	Nov 25, 2021	723aaec1 Add files via up...
Model_evaluation_packaging	Nov 21, 2021	698a4f91 done fahd kallo...
preprocessing	Nov 21, 2021	698a4f91 done fahd kallo...
README.md	Nov 25, 2021	1b1dcb50 Create README...

MLOps_SDAD
MLOps Course

Figure: Clone

Data

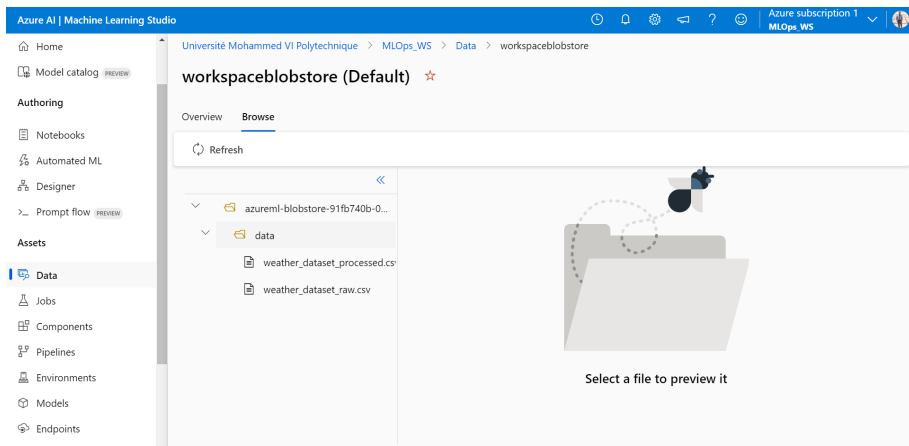


Figure: Data

Data

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Data

Data assets Dastores Dataset monitors PREVIEW

Data assets are immutable references to your data that can be created from datastores, local files, public URLs, or Open Datasets. Data assets created with AzureML v2 APIs cannot be deleted, but you can up-version or archive them for easy referencing and reuse in machine learning tasks. Deleting data assets created with v1 APIs will permanently delete the data asset and all metadata. [Learn more about data assets](#)

+ Create Refresh Archive View options Show latest version only Include archived

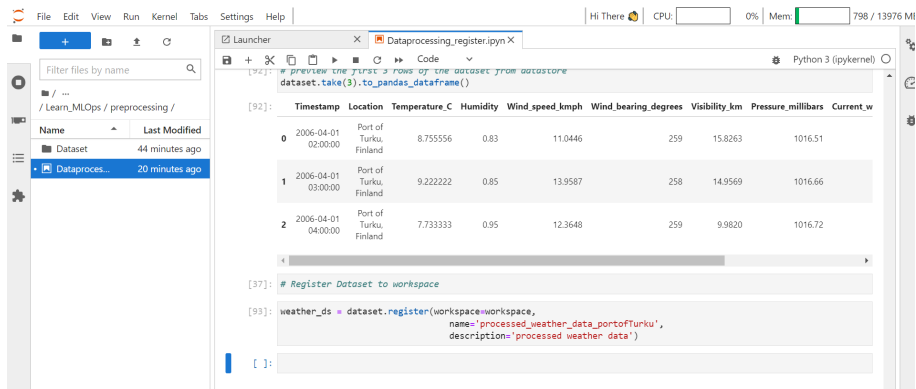
Search Filter Columns

Name	☆	Source	Version	Created on ↓	Modified on	Type
processed_weather_data_portofl		This workspace	1	Nov 10, 2023 12:35 AM	Nov 10, 2023 12:35 AM	Table

< Prev Next > 25/Page

Figure: Data

Compilation



The screenshot shows a JupyterLab environment. On the left is a file browser with a search bar and a list of files. The main area displays a code cell with a dataset preview and two code snippets.

File browser contents:

- Filter files by name
- / ...
- / Learn_MLOps / preprocessing /
- Name | Last Modified
- Dataset | 44 minutes ago
- Dataproces... | 20 minutes ago

Code cell output:

```
[92]: # preview the first 3 rows of the dataset from datastore
dataset.take(3).to_pandas_dataframe()
```

	Timestamp	Location	Temperature_C	Humidity	Wind_speed_kmph	Wind_bearing_degrees	Visibility_km	Pressure_millibars	Current_w
0	2006-04-01 02:00:00	Port of Turku, Finland	8.755556	0.83	11.0446	259	15.8263	1016.51	
1	2006-04-01 03:00:00	Port of Turku, Finland	9.222222	0.85	13.9587	258	14.9569	1016.66	
2	2006-04-01 04:00:00	Port of Turku, Finland	7.733333	0.95	12.3648	259	9.9820	1016.72	

Code cell input:

```
[37]: # Register Dataset to workspace
```

```
[93]: weather_ds = dataset.register(workspace=workspace,
                                name='processed_weather_data_portofTurku',
                                description='processed weather data')
```

Figure: Compilation

Compilation

■ / ...
/ Learn_MLOps / Model_evaluation_pac

Name	Last Modified
model_eval...	3 minutes ago
scaler.pkl	5 minutes ago
svc.onnx	6 minutes ago

Load files

```
[4]: with open('scaler.pkl', 'rb') as file:  
     scaler = pickle.load(file)
```

```
[5]: # Compute the prediction with ONNX Runtime  
     import onnxruntime as rf  
     import numpy  
     sess = rf.InferenceSession("svc.onnx")
```

```
[6]: input_name = sess.get_inputs()[0].name  
     label_name = sess.get_outputs()[0].name
```

inference on test data

```
[18]: test_data = np.array([34.927778, 0.24, 7.3899, 83, 16.1000, 1, 100])
```

```
[19]: # Scale data  
     test_data = scaler.fit_transform(test_data.reshape(1, 7))
```

```
[20]: pred_onx = sess.run([label_name], {input_name: test_data.astype(numpy.float32)})[0]
```

```
[21]: pred_onx[0]
```

Figure: Compilation

Thank you!