

LAB A (Module 3.1)

The screenshot displays the JupyterLab environment. On the left, the file explorer shows the directory structure under `/en_us/`. The files listed are:

Name	Last Modified
column_2C.weka.arff	seconds ago
column_2C.dat	seconds ago
column_3C.weka.arff	seconds ago
column_3C.dat	seconds ago
PythonCheatSheet.ipynb	7 minutes ago
Untitled.ipynb	seconds ago

On the right, the code editor shows the following Python code:

```
[2]: import warnings, requests, zipfile, io
      warnings.simplefilter('ignore')
      import pandas as pd
      from scipy.io import arff

[4]: f_zip = 'http://archive.ics.uci.edu/ml/machine-learning-databases/00212/vertebral_column_data.zip'
      r = requests.get(f_zip, stream=True)
      Vertebral_zip = zipfile.ZipFile(io.BytesIO(r.content))
      Vertebral_zip.extractall()

[ ]:
```

File Edit View Run Kernel Git Tabs Settings Help

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/ en_us /

Name	Last Modified
column_2C_weka.arff	2 minutes ago
column_2C.dat	2 minutes ago
column_3C_weka.arff	2 minutes ago
column_3C.dat	2 minutes ago
PythonCheatSheet.ipynb	8 minutes ago
Untitled.ipynb	a minute ago

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Launcher

roger_linear_learner_mnist. X

Untitled.ipynb

conda_pytorch_p3

[2]:

```
import warnings, requests, zipfile, io
warnings.simplefilter('ignore')
import pandas as pd
from scipy.io import arff
```

[4]:

```
f_zip = 'http://archive.ics.uci.edu/ml/machine-learning-databases/00212/vertebral_column_data.zip'
r = requests.get(f_zip, stream=True)
Vertebral_zip = zipfile.ZipFile(io.BytesIO(r.content))
Vertebral_zip.extractall()
```

[5]:

```
data = arff.loadarff('column_2C_weka.arff')
df = pd.DataFrame(data[0])
df.head()
```

[5]:

	pelvic_incidence	pelvic_tilt	lumbar_lordosis_angle	sacral_slope	pelvic_radius	degree_spondylolisthesis	class
0	63.027817	22.552586	39.609117	40.475232	98.672917	-0.254400	b'Abnormal'
1	39.056951	10.060991	25.015378	28.995960	114.405425	4.564259	b'Abnormal'
2	68.832021	22.218482	50.092194	46.613539	105.985135	-3.530317	b'Abnormal'
3	69.297008	24.652878	44.311238	44.644130	101.868495	11.211523	b'Abnormal'
4	49.712859	9.652075	28.317406	40.060784	108.168725	7.918501	b'Abnormal'

[]:

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Name	Last Modified
column_2C.arff	2 minutes ago
column_2C.dat	2 minutes ago
column_3C.weka.arff	2 minutes ago
column_3C.dat	2 minutes ago
Python column_3C.dat y...	9 minutes ago
Untitled.ipynb	seconds ago

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Launcher

roger_linear_learner_mnist

Untitled.ipynb

column_2C.dat

column_3C.weka.arff

```
1 relation column_3C_weka
2
3 @attribute pelvic_incidence numeric
4 @attribute pelvic_tilt numeric
5 @attribute lumbar_lordosis_angle numeric
6 @attribute sacral_slope numeric
7 @attribute pelvic_radius numeric
8 @attribute degree_spondylolisthesis numeric
9
10 @attribute class {Hernia, Spondylolisthesis, Normal}
11
12 @data
13 63.0278175,22.55258597,39.60911701,40.47523153,98.67291675,-0.254399986,Hernia
14 39.05695098,10.06099147,25.01537822,28.99595951,114.4054254,4.564250645,Hernia
15 68.83202098,22.21848205,50.09219357,46.61353893,105.9851355,-3.530317314,Hernia
16 69.29700807,24.65207791,44.31123813,44.64413017,101.8684951,11.21152344,Hernia
17 49.71285934,9.652074879,28.317406,40.06078446,108.1687249,7.918500615,Hernia
18 40.25019968,13.92190658,25.1249496,26.32829311,130.3278713,2.230651729,Hernia
19 53.43292815,15.86433612,37.16593387,37.56859203,120.5675233,5.988550702,Hernia
20 45.36675362,10.75561143,29.03834896,34.61114218,117.2700675,-10.67587083,Hernia
21 43.79019026,13.5337531,42.69081398,30.25643716,125.0028927,13.28901817,Hernia
22 36.68635286,5.010884121,41.9487509,31.67546874,84.24141517,0.664437117,Hernia
23 49.70660953,13.04097405,31.33450009,36.66563548,108.6482654,-7.825985755,Hernia
24 31.23238734,17.71581923,15.5,13.51656811,120.0553988,0.499751446,Hernia
25 48.91555137,19.96455616,40.26379358,28.95099521,119.321358,8.028894629,Hernia
26 53.5721702,20.46082824,33.1,33.11134196,110.9666978,7.044802938,Hernia
27 57.30822656,24.1888846,46.99999999,33.11134196,116.8065868,5.766946943,Hernia
28 44.31890674,12.53799164,36.098763,31.78091509,124.1158358,5.415825143,Hernia
29 63.83498162,20.36250706,54.55243367,43.47247456,112.3094915,-0.622526643,Hernia
30 31.27601184,3.14466948,32.56299592,28.13134236,129.0114183,3.623020073,Hernia
31 38.69791243,13.44474904,31.25.25316339,123.1592507,1.429185758,Hernia
32 41.72996308,12.25407408,30.12258646,29.475889,116.5857056,-1.244402488,Hernia
33 43.92283983,14.17795853,37.8325467,29.7448813,134.4610156,6.451647637,Hernia
34 54.91944259,21.06233245,42.19999999,33.85711014,125.2127163,2.432561437,Hernia
35 63.07361096,24.41380271,53.99999999,38.65980825,106.4243295,15.77969683,Hernia
36 45.54078988,13.06959759,30.29832059,32.47119229,117.9808303,-4.987129618,Hernia
37 36.12568347,22.75875277,29,13.3669307,115.5771163,-3.237562489,Hernia
38 54.12492019,26.65048856,35.32974693,27.47443163,121.447011,1.571204816,Hernia
39 26.14792141,10.75945357,14,15.38846783,125.2032956,-10.09310817,Hernia
40 43.58096394,16.5088837,46.99999999,27.07208024,109.271634,8.992815727,Hernia
41 44.5510115,21.93114655,26.78591597,22.61986495,111.0729197,2.652320636,Hernia
42 66.87921138,24.89199889,49.27859673,41.9872125,113.4770183,-2.005891748,Hernia
43 50.81926781,15.40221253,42.52893886,35.41705528,112.192804,10.86956554,Hernia
44 46.39026008,11.07904664,32.13655345,35.31121344,98.77454633,6.386831648,Hernia
```