INSA INSTITUT NATIONAL DES SCIENCES APPLIQUÉES TOULOUSE

Python script

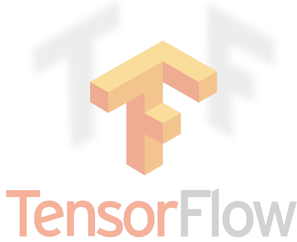
IA Frameworks

Brendan Guillouet - 16/11/2020

Institut National des Sciences Appliquées de Toulouse

Python IDE

ML Python Libraries



Python Environment

Viz' Python Libraries

Framework & Tool

Why using script ?

Jupyter limits:

- It's an exploration tool.
  - *Cloud machine are accounted on an hourly base.*
- Non-linear workflow.
  - *Easy to write messy code.*
- Not designed to handle large-scale experiment.
- Not designed for production.
  - *Can't be run from terminal, no test procedure.*

Exploration work:

Jupyter

Large-scale or production work:

Python script

Script execution

File *script.py*

```
a=5
b=3
c=a+b
print("The answer is %d" %c)
```

Terminal

```
bguillou $> python script.py
bguillou $> The answer is 8
```

TP - First Part

Write two scripts:

- **learning.py:** learn a model, save it in the *model* directory, save *results* in the results directory.
- **prediction.py:** to generate prediction and save it in the *results* directory.

On **CatsVsDogs** data.

Good practice:

- Ensure that **complete workflow** is **working locally** and on **small data**.

Librairie Argparse

File *script.py*

```python
import argparse

parser = argparse.ArgumentParser()
parser.add_argument('--a', type=int, default=5)
parser.add_argument('--b', type=int, default=3)

args = parser.parse_args()

c= args.a + args.b
print("The answer is %d" %c)
```

Terminal

```
bguillou $> python script.py
bguillou $> The answer is 8
bguillou $> python script.py –a 4
bguillou $> The answer is 7
bguillou $> python script.py –a 4 –b 2
bguillou $> The answer is 6
```

Librairie Pickle

File *learning.py*

```
import pickle
...
results = {"learning_time" : lt, "accuracy" : acc}
pickle.dump(results, open("/User/bguillouet/data/results.pkl","wb"))
```

File *explore_results.py*

```
import pickle
results = pickle.load(open("/User/bguillouet/data/results.pkl","rb"))
print(results)
```

Terminal

```
bguillou $> ls data/
bguillou $>
bguillou $> python learning.py
bguillou $> ls data/
bguillou $> results.pkl
bguillou $> python explore_results.py
bguillou $> { ”learning_time” : lt , ”accuracy” : acc}
```