

Formation IA

Installation of the requirements

The LIAD Taskforce

Useful information and instructions

The **training course** on AI has been developed by the LIAD¹ at CEA. It lasts one week overall and spans several subjects such as an introduction to probability and statistics, supervised and unsupervised machine learning, and modern AI. The format chosen for the coursework is that of **frontal teaching**, accompanied by extended **hands-on sessions**.

Participants can join the sessions either using local desktop PCs in the training room and their own machines. While classroom lectures do not require any particular adjustment, exercise sessions need some manual intervention. In particular, participants may need to **install the required libraries** for coding².

Installation of the requirements

Before the beginning of the lectures, participants will be provided with a text file containing all **requirements**. For the hands-on sessions any modern version of **Python** (e.g. starting from 3.9) should work out-of-the-box³. Participants can then proceed as indicated in the following sections.

Solution 1: Python's virtual environments

The following example uses the default version of the language, though you can replace **python** with any specific (installed) version to gain more control.

Participants can proceed as follows:

1. Open a terminal emulator on your machine,
2. Create a local directory (folder) to hold all coursework materials. For Windows system, you can directly use the Windows Explorer. For Linux and macOS systems:

```
1 mkdir formationIA && cd formationIA
2
```

3. Download the **requirements.txt** file and move it in the directory. For Windows system, you can directly use the Windows Explorer. For Linux and macOS systems:

```
1 mv /path/to/requirements.txt .
2
```

4. Create a **virtual environment**:

```
1 python -m venv .venv # creates a hidden directory ".venv"
2
```

5. Activate the **virtual environment**:

- Linux and macOS systems:

¹Laboratoire d'Intelligence Artificielle et science des Données.

²All hands-on sessions use the Python programming language.

³If in doubt, install version 3.10.

```
1 source .venv/bin/activate
2
```

- Windows systems:

```
1 .venv\bin\activate
2
```

6. Install the requirements:

```
1 python -m pip install -r requirements.txt
2
```

7. Launch the *Jupyter* notebook (you can replace `notebook` with `lab` for the new interface):

```
1 jupyter notebook # or `jupyter lab`
2
```

Solution 2: conda-forge

The following instructions concern the use of `conda-forge`⁴.

Participants can proceed as follows:

1. Install `conda-forge` (follow the instructions at <https://conda-forge.org/>),
2. Open a terminal emulator on your machine,
3. Create a local directory (folder) to hold all coursework materials. For Windows system, you can directly use the Windows Explorer. For Linux and macOS systems:

```
1 mkdir formationIA && cd formationIA
2
```

4. Download the `requirements.txt` file and move it in the directory. For Windows system, you can directly use the Windows Explorer. For Linux and macOS systems:

```
1 mv /path/to/requirements.txt .
2
```

5. Create a **virtual environment** and activate it:

```
1 conda create -y -n "formationIA" python"==3.10"
2 conda activate formationIA
3
```

6. Install the requirements:

```
1 python -m pip install -r requirements.txt
2
```

7. Launch the *Jupyter* notebook (you can replace `notebook` with `lab` for the new interface):

```
1 jupyter notebook # or `jupyter lab`
2
```

N.B.: should the `conda` command not be available after installation, try the following:

```
1 cd /path/to/conda/install/directory/ # you specified this during installation
2 ./condabin/conda init
```

Then, close and reopen the terminal emulator.

⁴Differently from the widely-known *Anaconda* distribution, `conda-forge` is an open-source package manager for Python, free for use.