



ESCAPE

European Science Cluster of Astronomy &
Particle physics ESFRI research Infrastructures

ESCAPE school environment setup

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ESCAPE data science summer School 2021 – 07 June 2021



Who am I ?

● Enrique Garcia

- Data Scientists at LAPP/CNRS since June 2019.
- Working for
 - ESCAPE
 - Technical implementation of the OSSR.
 - CTA/LST consortiums
 - Helping in the development and deployment of different data chain analyses.
- 2008 – 2014 : Physics degree and Master on Astrophysics.
- 2014 – 2017: PhD candidate on sub-mm astronomy at IPAG (Grenoble).
- 2018 – 2019: Data Scientist at ALTRAN (consulting company).



- How to set up the ESCAPE school environment from scratch



You should have already installed it

- Thanks for your attention.
- Questions and doubts ?



Install Conda

Conda

- Open source package management system.
- Anaconda is the user friendly but 'heavy' version of conda (aprox 3Gb)
 - GUI, IDE, lot of packages, R utils...

Miniconda installation

- Go to this [link](#).
- Choose and download your OS installer.
- Open a terminal and run

```
$ bash Miniconda3-latest-Linux-x86_64.sh
```
- Follow the instructions

Windows installers

Python version	Name	Size	SHA256 hash
Python 3.9	Miniconda3 Windows 64-bit		45d875df602b31ae71b9e0c3fec2b8
	Miniconda3 Windows 32-bit		1a8739c1a56038ccb0258f233ad646
Python 3.8	Miniconda3 Windows 64-bit		a99f5331c8120099ae1d803f627c61
	Miniconda3 Windows 32-bit		b8a4b3f90a2a511fea681ce7ebc661
Python 2.7	Miniconda2 Windows 64-bit		80eed4707bb51baa8fdba4bf326c
	Miniconda2 Windows 32-bit		a13f4a6b218e64641504437b2617b

MacOSX installers

Python version	Name	Size	SHA256 hash
Python 3.9	Miniconda3 MacOSX 64-bit bash	42.2 MiB	b3bf77cbb81ee235ec6858146a2a84d20f8ecdeb614678030c39baacb5acbed1
	Miniconda3 MacOSX 64-bit pkg	49.7 MiB	298ff80803817921a98e21d81d60f93b44afce76a8ae492d289b13741bcffe
Python 3.8	Miniconda3 MacOSX 64-bit bash	54.5 MiB	a9ea0afba55bd872e01323d495b649eac8ff4ce2ea098fb4c357b6139fe6478
	Miniconda3 MacOSX 64-bit pkg	62.0 MiB	b06f3bf3cfa9b53695c9c3b8da05bf583bc7047d45b0d74492f154d85e317fa
Python 2.7	Miniconda2 MacOSX 64-bit bash	40.3 MiB	0e2961e20a2239c140766456388beba6630f0c869020d2bd1870c3d040980b45
	Miniconda2 MacOSX 64-bit pkg	48.4 MiB	9ca4313e8162a939c7a5a4f48d657722594f8db9a98472803d63c3a7f66fa1da

Linux installers

Python version	Name	Size	SHA256 hash
Python 3.9	Miniconda3 Linux 64-bit	58.6 MiB	536817d1b14cb1ada88900f5be51ce0a5e042bae178b5550e62f61e223dea7c
	Miniconda3 Linux-aarch64 64-bit	76.2 MiB	45c5246f3e60dfce4d5ab0cd00c5d01cf39c8e59cefa1f053397f37fb13f4410
	Miniconda3 Linux-ppc64le 64-bit	60.3 MiB	64616e57a8d86bd5bbd14c1e5c60e2dc83c3e9b11a2815a1811394484534ab
	Miniconda2 Linux x86_64 bit	47.0 MiB	755477a1e0e1a86e6d575b12e0f12390f03306d120f0733e



Install Git

- Git – version control system
 - See Max talk !

- How to install it ?
 - Ubuntu (Debian based distribution)

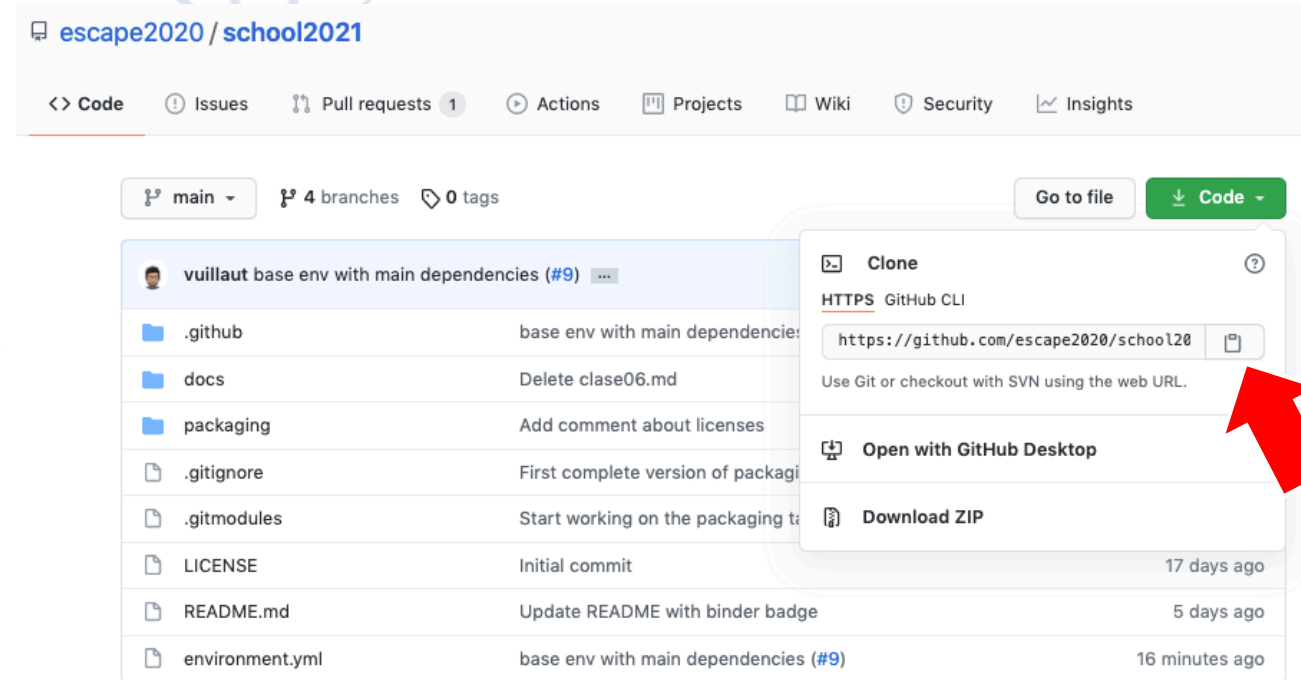
```
$ sudo apt install git-all
```
 - Fedora, CentOS (RPM based distribution)

```
$ sudo dnf install git-all
```
 - MacOS
 - Various ways. Try this [link](#).
 - Windows
 - Try this [link](#).



Clone the school repository

- Go to the GitHub school project
 - <https://github.com/escape2020/school2021>
 - Click on Code → HTTPS and copy the link



escape2020 / school2021

<> Code Issues Pull requests 1 Actions Projects Wiki Security Insights

main 4 branches 0 tags

Go to file Code

Clone
HTTPS GitHub CLI
`https://github.com/escape2020/school2021`
Use Git or checkout with SVN using the web URL.

Open with GitHub Desktop

Download ZIP

vuillaut	base env with main dependencies (#9)	...	
.github	base env with main dependencies		
docs	Delete clase06.md		
packaging	Add comment about licenses		
.gitignore	First complete version of packagi		
.gitmodules	Start working on the packaging t		
LICENSE	Initial commit		17 days ago
README.md	Update README with binder badge		5 days ago
environment.yml	base env with main dependencies (#9)		16 minutes ago

- Open a terminal
 - Go to the directory where you want to save the project
 - ```
$ git clone https://github.com/escape2020/school2021.git
```



# Setup the conda environment

- Create a new environment

```
$ cd school2021
```

- Option 1

```
$ conda install mamba -n base -c conda-forge
```

```
$ mamba env create -f environment.yml
```

- Option 2 – It will take a longer, though

```
$ conda env create -f environment.yml
```

```
$ conda activate eschool2021
```

- If you have already created an eschool2021 env

```
$ conda activate eschool2021
```

```
$ conda env update -f environment.yml
```





# Conda useful commands

- Cheat sheet: [conda-cheatsheet.pdf](https://conda-forge.github.io/conda-cheatsheet.pdf)
- Create a new environment with a fixed python version

```
$ conda create -n env_name python=3.7
```
- Install or update a package

```
$ conda install PACKAGE
$ conda update PACKAGE
```
- List all the installed packages in the environment

```
$ conda list
```
- Clone an environment

```
$ conda clone --clone my_env --name new_env
```
- Update an env with an environment.yml file

```
$ conda env update --file environment.yml
```

● pip can be used to install packages in the environment too.

- Conflicts might appear, use carefully.

```
$ conda list numpy
```

| Version | Build          | Channel     |
|---------|----------------|-------------|
| 1.18.1  | py36hdc5ca10_1 | conda-forge |

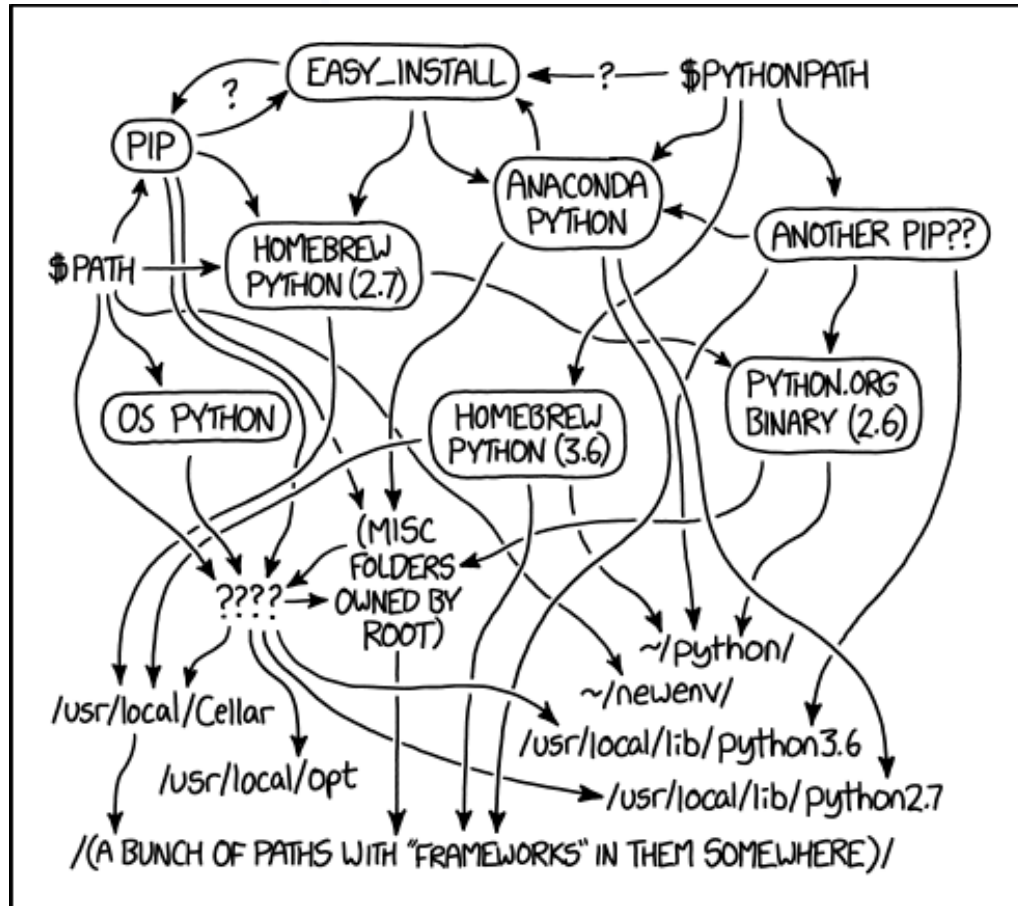
```
$ conda remove numpy
```

```
$ pip install numpy==1.20.1
```

```
$ pip list | grep numpy
```



# Thanks for your attention



MY PYTHON ENVIRONMENT HAS BECOME SO DEGRADED THAT MY LAPTOP HAS BEEN DECLARED A SUPERFUND SITE.

- Do not hesitate to contact me (or any tutor) in case of problems during the env installation
  - Before posting any problem please check the [GitHub Issues](#), in case your problem was solved here.
  - Please use the the corresponding slack channel #d01-mon07-environment-setup
- If after the env installation, in a terminal;
 

```
$ which python
.../miniconda3/envs/eschool2021
```

 your env seems to be correctly installed. Congrats !



# Thanks for your attention

## ● Links:

- Install miniconda (slide 4): <https://docs.conda.io/en/latest/miniconda.html>
- Install git Mac (slide 5): <https://git-scm.com/download/mac>
- Install git Windows (slide 5): <https://git-scm.com/download/win>
- Conda cheat sheet (slide 9):  
[https://docs.conda.io/projects/conda/en/4.6.0/\\_downloads/52a95608c49671267e40c689e0bc00ca/conda-cheatsheet.pdf](https://docs.conda.io/projects/conda/en/4.6.0/_downloads/52a95608c49671267e40c689e0bc00ca/conda-cheatsheet.pdf)
- GitHub Issues (slide 10): <https://github.com/escape2020/school2021/issues>

