



ESCAPE

European Science Cluster of Astronomy &
Particle physics ESFRI research Infrastructures

ESCAPE data science school coding environment

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Who am I ?

● Enrique Garcia

- Computer Scientist / Software developer at LAPP/CNRS since June 2019.
- Working for
 - ESCAPE + EOSC Future
 - WP3: Technical implementation of the OSSR
 - VRE: Collaborative open source platform that connects all the ESCAPE WPs outputs
 - CTA/LST consortiums
 - Helping in the development and deployment of different data chain analyses
 - IstMCpipe: LST-1 MC data processing pipeline
 - SAG-RECO: Real time analysis data reconstruction packages
- 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).



Overview

- Set up the ESCAPE data science school environment from scratch



Install Git

- Git – version control system

- See Max talk !

- How do I install it ?

- Ubuntu (Debian based distribution)

- \$ sudo apt install git-all

- Fedora, CentOS (RPM based distribution)

- \$ sudo dnf install git-all

- MacOS

- Various ways. Suggestion: visit <https://git-scm.com/download/mac>

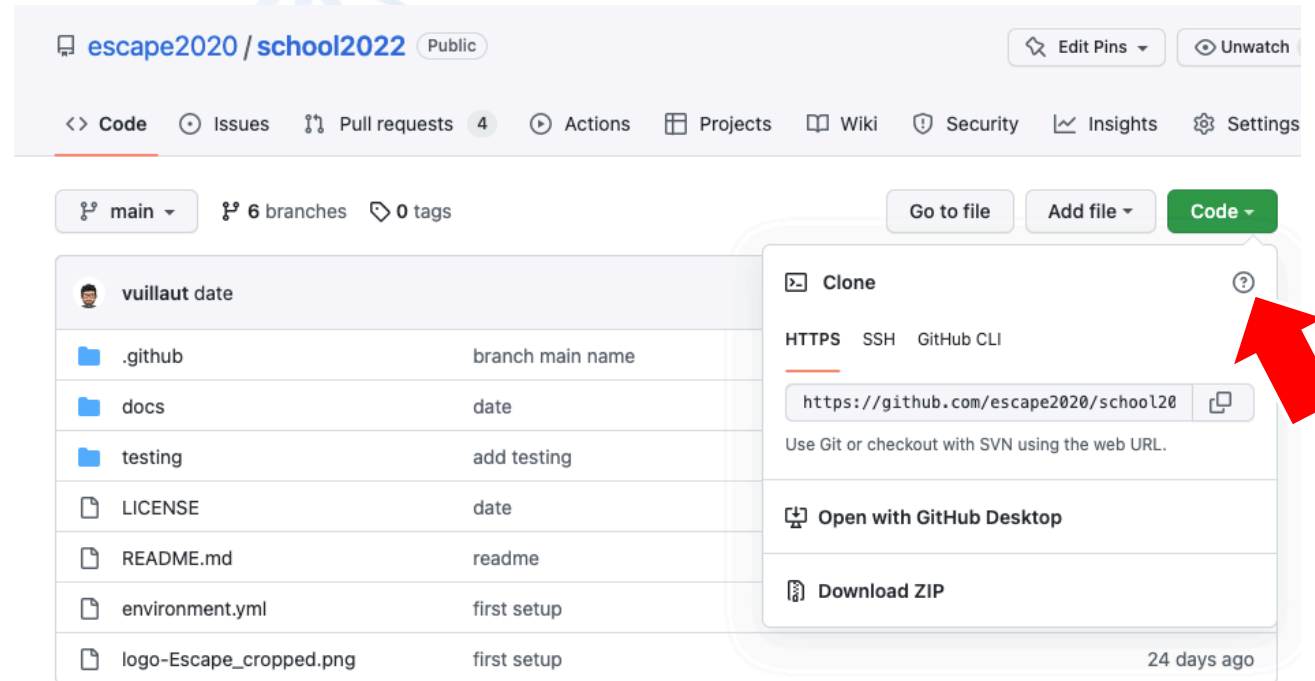
- Windows

- Visit <https://git-scm.com/download/win>



Clone the school repository

- Go to the GitHub school project
 - <https://github.com/escape2020/school2022>
 - Click on Code → HTTPS and copy the link
 - Same procedure with the SSH link if you know how to create a SSH key pair and add it to your GitHub account
 - Otherwise:
 - See Max talk
 - Follow this tutorial (link on last slide)
 - Open a terminal
 - Go to the directory where you want to save the project
- ```
$ git clone --recursive https://github.com/escape2020/school2022.git
```



The screenshot shows the GitHub repository page for 'escape2020/school2022'. The 'Code' dropdown menu is open, displaying options to clone the repository using HTTPS, SSH, or GitHub CLI. The HTTPS URL is highlighted, and a red arrow points to the copy icon next to it. Below the clone options, there are links to 'Open with GitHub Desktop' and 'Download ZIP'. The repository's file tree is visible in the background, showing folders like '.github', 'docs', and 'testing', and files like 'LICENSE', 'README.md', and 'environment.yml'.



# Setup the conda environment

- Create a new environment

```
$ cd school2022
```

- 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 eschool2022
```

- If you have already created an eschool2022 env

```
$ conda activate eschool2022
```

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



# conda useful commands

- Cheat sheet: (link on last slide)
- Create a new environment with a fixed python version

```
$ conda create -n env_name python=3.9
```
- 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
```







## ● Links:

- (Slide 7) Generate a new SSH key and add it to your git profile:  
<https://docs.github.com/en/authentication/connecting-to-github-with-ssh/generating-a-new-ssh-key-and-adding-it-to-the-ssh-agent>
- (slide 9) conda cheat sheet:  
[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)

