

# Prepare your Saturn Cloud space

by

Hoai-Thu NGUYEN

Université de Lyon, CREATIS

June 2022



Montreal, July 4–8

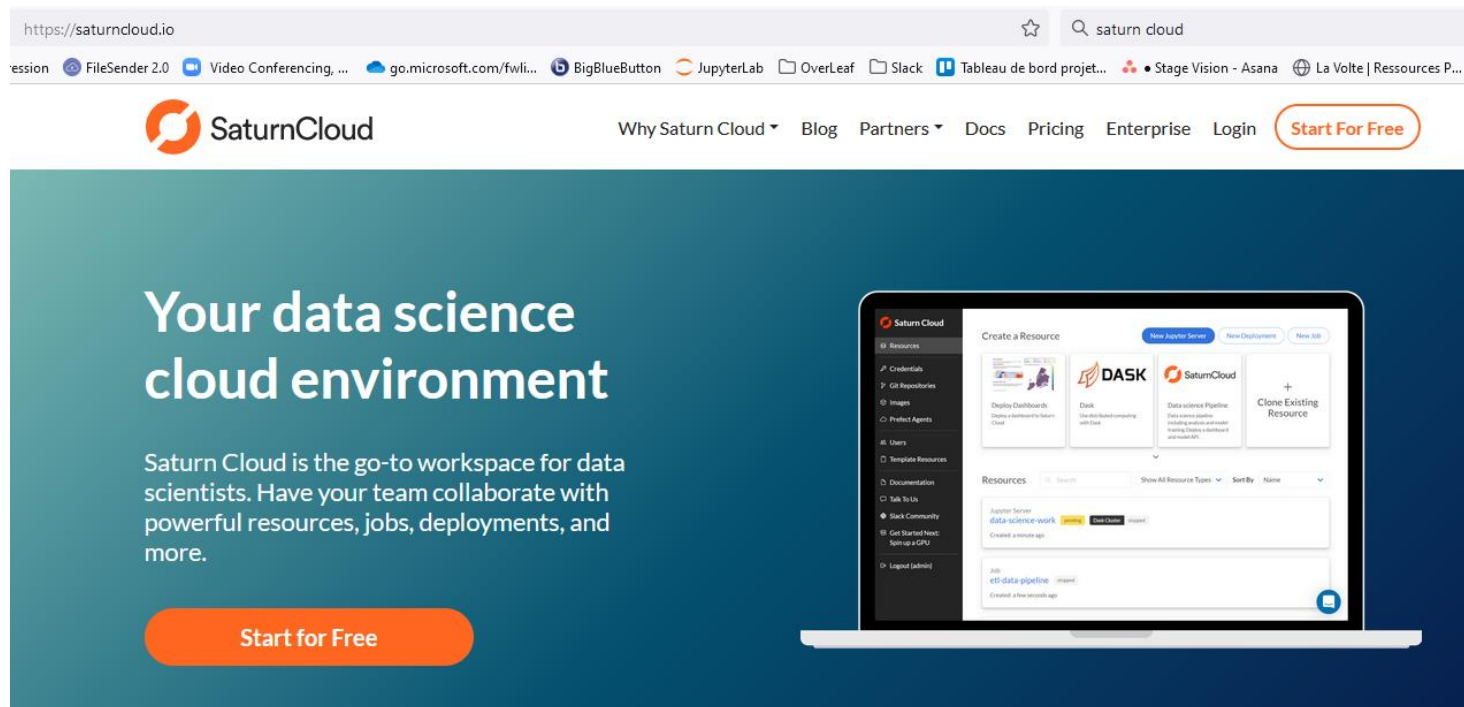
# DLM2022

# Steps required

1. Create an account on a cloud platform (Saturn Cloud)
2. Create a jupyter server and parametrize it on this cloud
3. Start the jupyter server
4. Launch the Jupyter lab environment

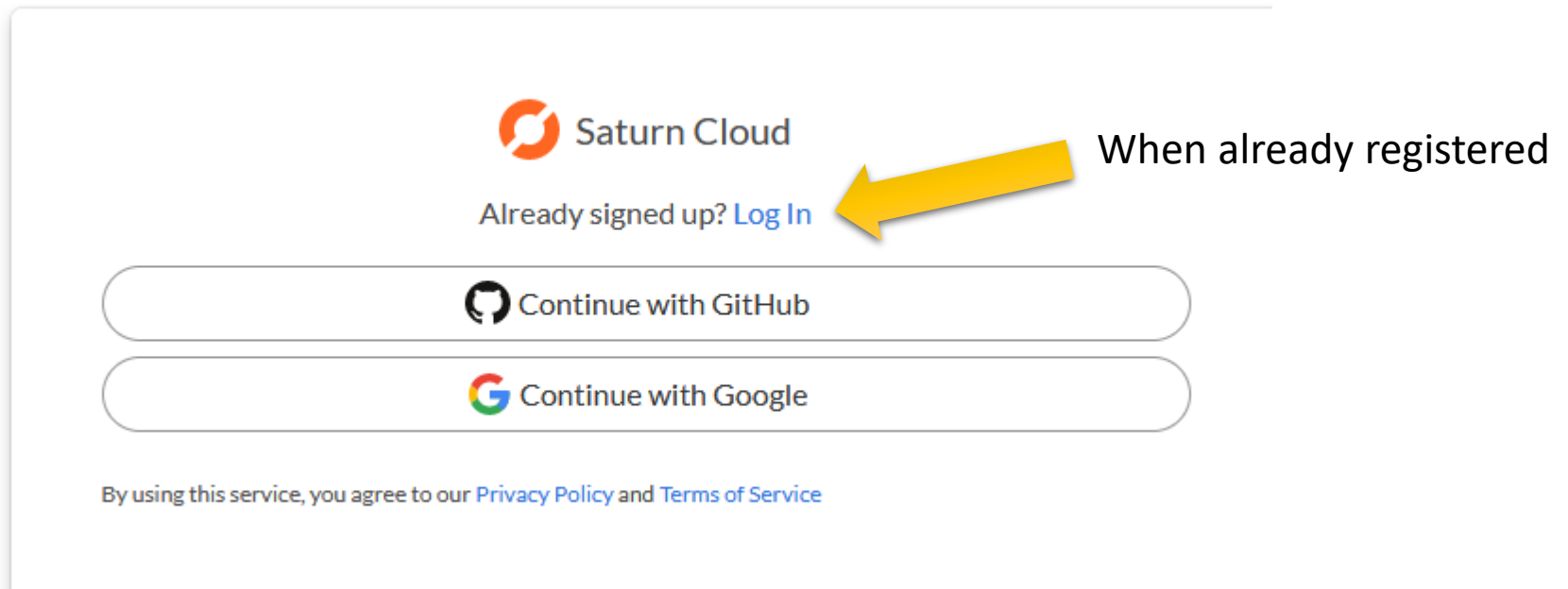
# 1- Create an account

- It's free, « just » need an email adress
- Connect on <https://saturncloud.io> and clic on « Start for Free »



# 1- Create an account

- You can use one of your GitHub or Google account
- Optionnaly, you can create a Saturn Cloud account



## 2- Create your jupyter server

- Hands-on are Jupyter notebooks, so create first a server on Saturn Cloud

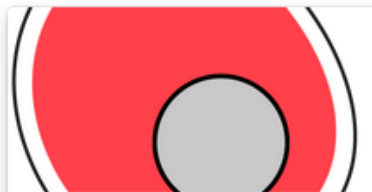


Create a Resource

New Jupyter Server

New Deployment

New Job



NeurIPS Openbio  
Multimodal Single-Cell Data  
Integration - A NeurIPS  
Competition (2021)

**RAPIDS**

RAPIDS  
Use GPUs for data science and  
machine learning with this  
platform by NVIDIA



Deploy Dashboards  
Deploy a dashboard to Saturn  
Cloud. Read more about  
deployments at: <https://scl.io/docs/deployments>.



Snowflake  
Connect to a Snowflake  
database from either a single  
machine or distributed cluster



Prefect  
Scheduled jobs with Prefect  
and Prefect Cloud

+

Clone Existing  
Resource



## 2- Server Parameters 1/4

Give a name



The screenshot shows the 'Overview' tab of a JupyterLab server configuration interface. A yellow arrow points to the 'Name' input field. The 'Owner' is listed as 'thomasgre' and the 'Name' is 'ML-HandsOn-2'. Below this is a 'Description' text area with a character count of 255/255.

Overview [Hide Advanced Options](#)

Owner / Name


thomasgre / ML-HandsOn-2

Description

Briefly describe this Jupyter server. (Characters left: 255/255)

## 2- Server Parameters 2/4


- Select GPU resources

 **Hardware**  
The hardware your Jupyter server will run on. [Hide Advanced Options](#)

**Disk Space**  
10Gi  
The Free plan is limited to 100GiB of disk space. Upgrade to Pro for unlimited resources.

**Hardware**

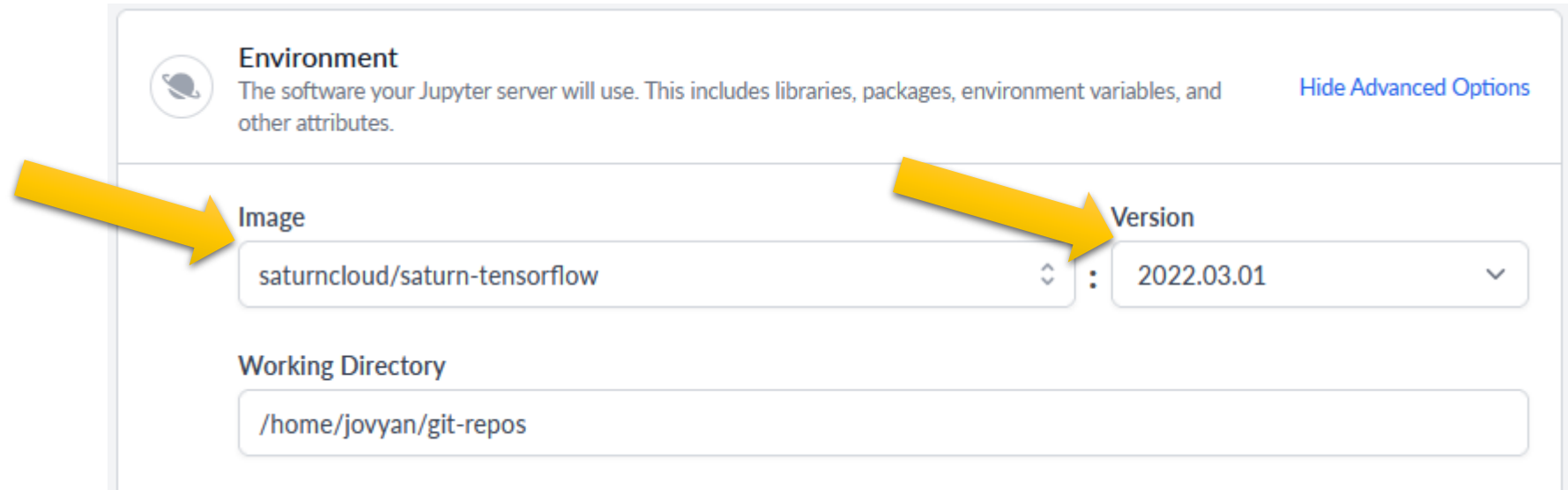
**CPU**  
An instance with only CPU processors.

**GPU** ✓  
An instance with both CPU and GPU processors.

**Size**  
T4-XLarge - 4 cores - 16 GB RAM - 1 GPU  
Disabled options are not supported due to your account limit. To increase the limit, please contact your administrator.

## 2- Server Parameters 3/4

- Select the desired image : saturncloud/saturn-tensorflow
- For version, use the 2022.03.01 or, if not available, the newest



**Environment**  
The software your Jupyter server will use. This includes libraries, packages, environment variables, and other attributes. [Hide Advanced Options](#)

**Image**  
saturncloud/saturn-tensorflow

**Version**  
2022.03.01

**Working Directory**  
/home/jovyan/git-repos



## 2- Server Parameters 4/4



### ATTENTION

→ **Apt Packages** add the following  
htop zip unzip python3-opencv

→ **Pip Install**, add the following  
opencv-python

**Both must be done**

**Extra Packages**  
Extra packages are installed every time the resource starts up - right before the start script. Use spaces to separate packages. If you find yourself adding the same packages to lots of resources, you may want to permanently add packages to a custom image instead. (?)

☐ Conda Install ☐ Pip Install ☒ Apt Packages

htop zip unzip python3-opencv

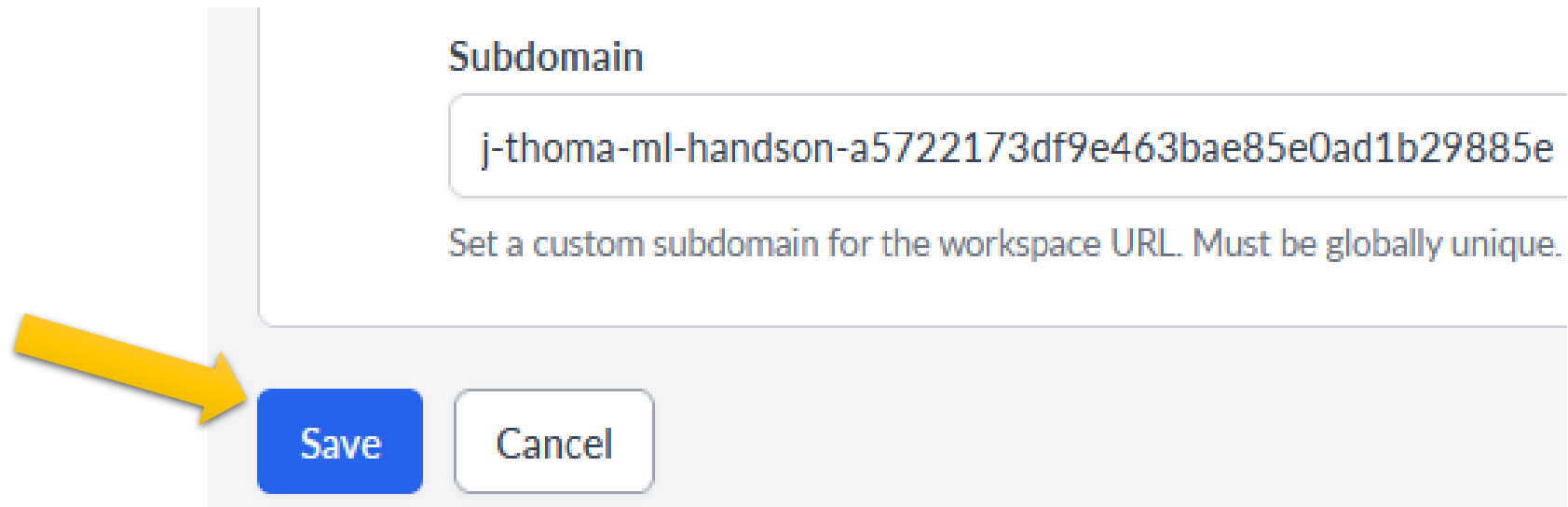
The packages together will run the following script:

```
apt-get install htop zip unzip python3-opencv
pip install opencv-python
```

**Environment Variables**

name = value

## 2- Server Parameters : save



The image shows a web form for setting a subdomain. The form has a title 'Subdomain' and a text input field containing the value 'j-thoma-ml-handson-a5722173df9e463bae85e0ad1b29885e'. Below the input field is a descriptive text: 'Set a custom subdomain for the workspace URL. Must be globally unique.' At the bottom of the form are two buttons: 'Save' (a blue button) and 'Cancel' (a white button with a grey border). A large yellow arrow points from the left towards the 'Save' button.

Subdomain

j-thoma-ml-handson-a5722173df9e463bae85e0ad1b29885e

Set a custom subdomain for the workspace URL. Must be globally unique.

Save Cancel

### 3- Start the jupyter server (few minutes)

Jupyter Server  
thomasgre / ML-HandsOn

Edit Delete

Logs

Image: saturncloud/saturn-tensorflow:2021.07.26-2  
Working Directory: /home/jovyan/git-repos  
Extra Packages:  

```
apt-get install htop python3-opencv  
pip install opencv-python
```

Resource Details

Jupyter Server

T4-XLarge - 4 cores - 16 GB RAM - 1 GPU - 10Gi Disk

Metrics  
Auto Shutoff: 1 hour  
SSH URL: (not enabled) (?)

Jupyter Lab

stopped

Start

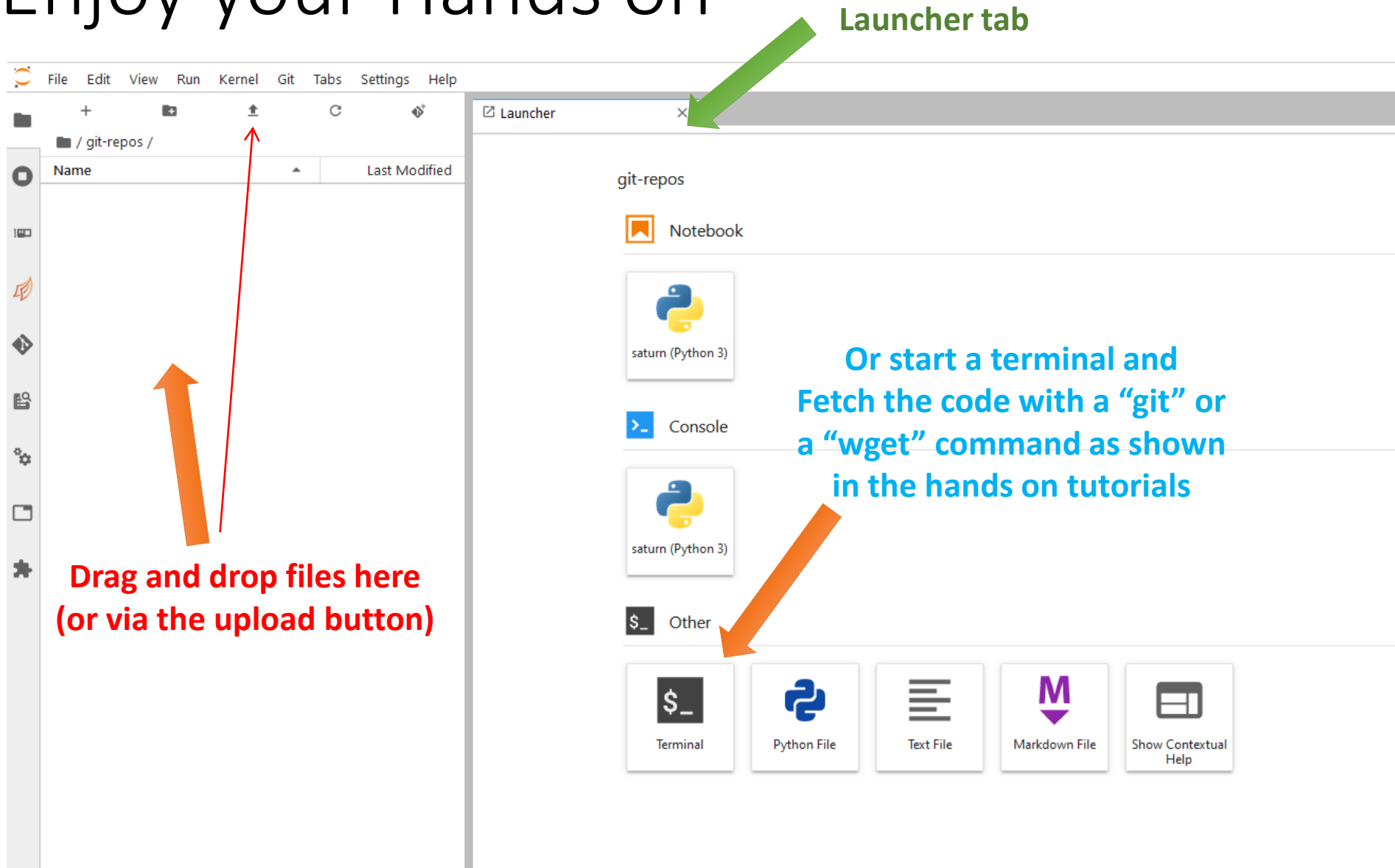
New Dask Cluster

## 4- Launch the Jupyter lab environnement

- First, wait until the server is started 😊



# 5- Enjoy your Hands on



The image shows the JupyterLab Launcher interface. On the left is a sidebar with a file browser showing the directory `/git-repos/`. It includes a table with columns `Name` and `Last Modified`. Above the table is an upload icon (a square with an upward arrow). A red arrow points from the text **Drag and drop files here (or via the upload button)** to this upload icon. The main area is titled `git-repos` and contains several sections: **Notebook** with two `saturn (Python 3)` icons; **Console** with one `saturn (Python 3)` icon; and **Other** with five icons: `Terminal` (a terminal window icon), `Python File` (a Python logo), `Text File` (a document icon), `Markdown File` (an 'M' icon), and `Show Contextual Help` (a help icon). A green arrow points from the text **Launcher tab** to the `Launcher` tab in the top bar. A blue text box with an orange arrow pointing to the `Terminal` icon contains the text: **Or start a terminal and Fetch the code with a “git” or a “wget” command as shown in the hands on tutorials**.

**Launcher tab**

**Drag and drop files here (or via the upload button)**

**Or start a terminal and Fetch the code with a “git” or a “wget” command as shown in the hands on tutorials**

# Hands-on 1 and 2, download files :

Classification:

[https://gitlab.in2p3.fr/thomas.grenier/tp1ss\\_classification/-/raw/master/TP\\_Classification.zip](https://gitlab.in2p3.fr/thomas.grenier/tp1ss_classification/-/raw/master/TP_Classification.zip)

Segmentation:

[https://gitlab.in2p3.fr/thomas.grenier/tp4ss\\_segmentation/-/raw/master/TP\\_Segmentation\\_v2.zip](https://gitlab.in2p3.fr/thomas.grenier/tp4ss_segmentation/-/raw/master/TP_Segmentation_v2.zip)

Also available on the following website:

<https://info.usherbrooke.ca/pmjodoin/dlmi2022/handson/>