



# Hands-on environment setup



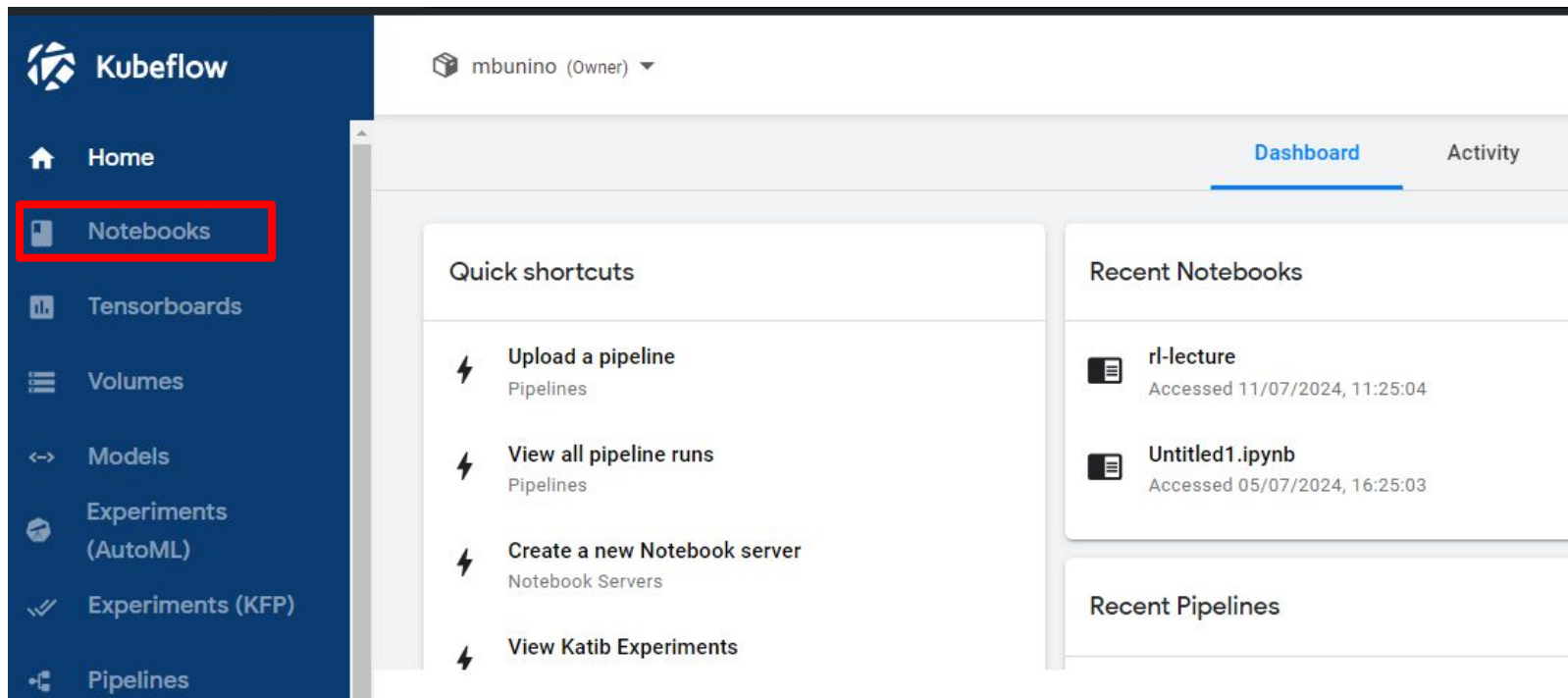
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# We will use KubeFlow instance at CERN

- Works only within CERN network
- Do not use a VPN
- Connect to [ml.cern.ch](https://ml.cern.ch) and login with your CERN credentials
- If needed, **set it up** following the instructions (it's just 2 clicks)

# Create a new notebook server

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The screenshot displays the Kubeflow dashboard interface. On the left, a dark blue sidebar contains a navigation menu with the following items: Home, Notebooks (highlighted with a red box), Tensorboards, Volumes, Models, Experiments (AutoML), Experiments (KFP), and Pipelines. The main content area is titled 'mbunino (Owner)' and features a 'Dashboard' tab. Under the 'Quick shortcuts' section, the option 'Create a new Notebook server' is visible, categorized under 'Notebook Servers'. The 'Recent Notebooks' section lists two items: 'rl-lecture' (Accessed 11/07/2024, 11:25:04) and 'Untitled1.ipynb' (Accessed 05/07/2024, 16:25:03). The 'Recent Pipelines' section is partially visible at the bottom.

# Create a new notebook server

Notebooks [+ NEW NOTEBOOK](#) **2**

Status	Name	Type	Age	Image	GPUs	CPUs	Memory	Volumes
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# Create a new notebook server

**3. Choose a name**

**4. Select custom image**

**5. Use**  
**`registry.cern.ch/mbunino/jupyterlab-gymnasium:torch-cpu-0.0.1`**

The screenshot shows a web form for creating a notebook server. It is divided into several sections:

- Name:** A section with the instruction "Specify the name of the Notebook Server and the Namespace it will belong to." It contains two input fields: "Name" with the value "rl-lecture" and "Namespace" with the value "mbunino". A red box highlights the "Name" field.
- Image:** A section with the instruction "Select a Docker Image with a baseline deployment and typical ML packages". It has a checked checkbox for "Custom Image" and a red box around it. Below the checkbox are two image selection options: "jupyterlab" and "Visual Studio Code".
- Custom Image:** A text input field containing the Docker image name: "registry.cern.ch/mbunino/jupyterlab-gymnasium:torch-cpu-0.0.1". A red box highlights this field.
- Advanced Options:** A section with a dropdown arrow and the text "Advanced Options".
- CPU / RAM:** A section with the instruction "Specify the total amount of CPU and RAM reserved by your Notebook Server. For CPU-intensive workloads, you can request more than 1 CPU (e.g. 1.5)". It contains two input fields: "Requested CPUs" with the value "1" and "Requested memory in Gi" with the value "4".

**Make sure that there are no spaces around the image name!**

# Create a new notebook server

**Configurations**

Extra layers of configurations that will be applied to the new Notebook. (e.g. Insert credentials as Secrets, set Environment Variables.) If this is your first notebook server, please DO NOT select 'Mount a Kerberos secret'. Use Kerberos mounting only after you manually create the secret. Otherwise, the notebook server will not be created. If in doubt, use default configuration settings.

Configurations

- Allow access to Kubeflow Pipelines, Mount Nvidia driver

**Miscellaneous Settings**

Other possible settings to be applied to the Notebook Server.

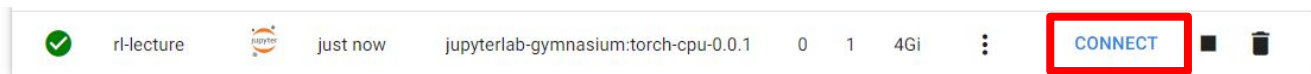
Enable Shared Memory

**LAUNCH** CANCEL

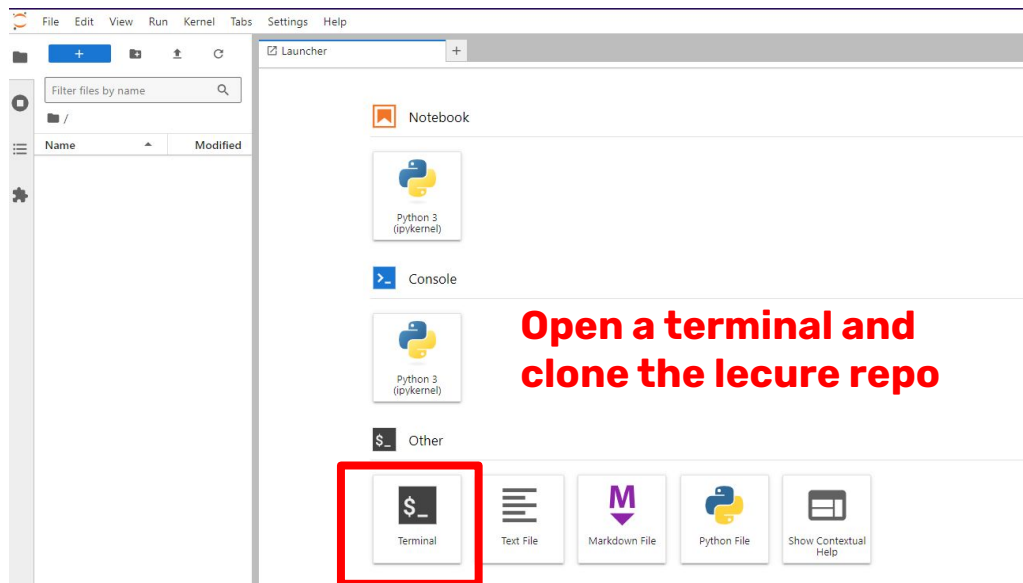
6

...and wait for the notebook server to be ready

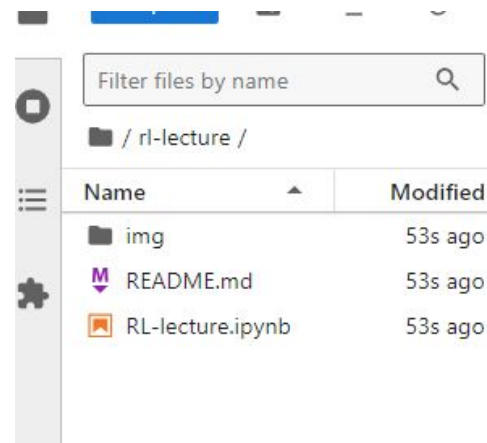
# Create a new notebook server



And...

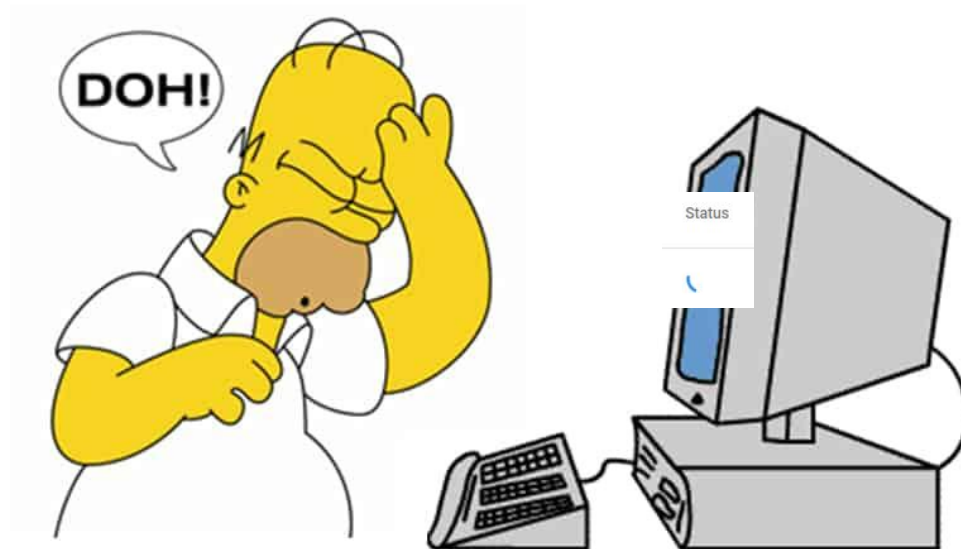


\$ git clone https://github.com/matbun/rl-lecture.git





# If you have problems with KubeFlow...

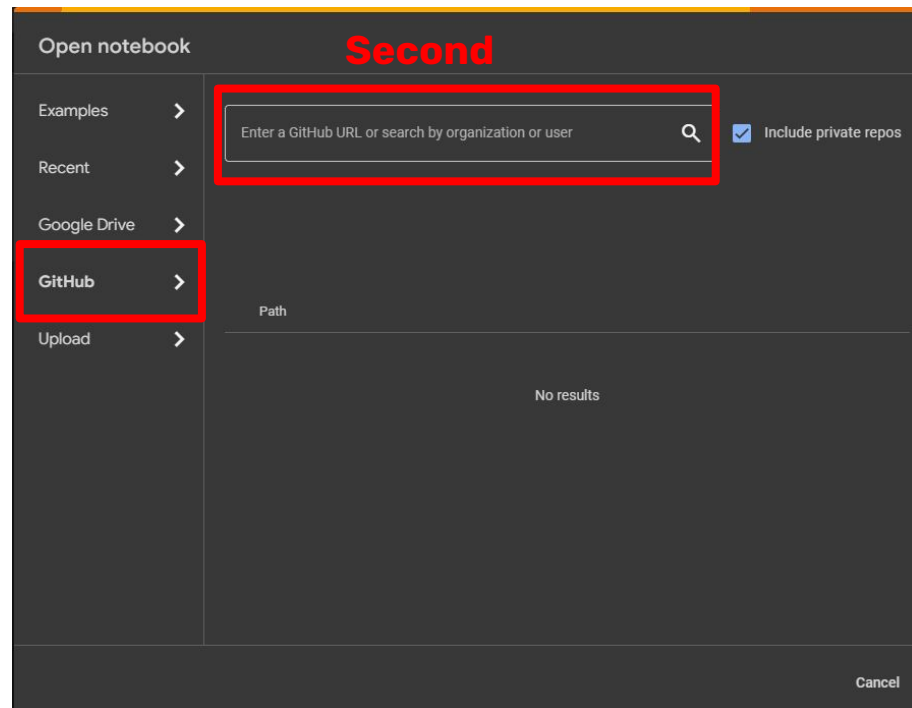


The notebook server may get stuck in pending state when too many requests are submitted... we discovered

# If you have problems with KubeFlow...

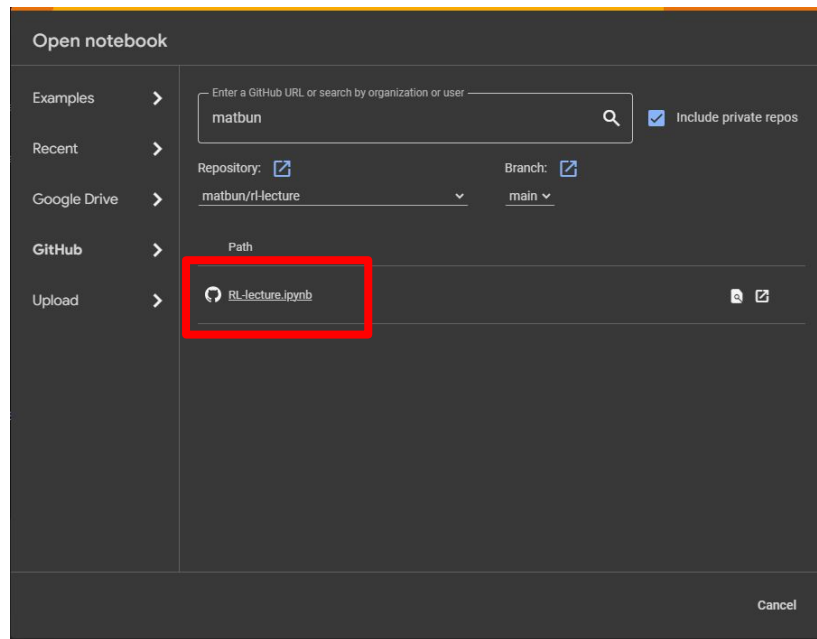
1. Use Colab: <https://colab.research.google.com/>
2. File > Open Notebook > GitHub
3. Input the notebook link:  
<https://github.com/matbun/rl-lecture/blob/main/RL-lecture.ipynb>

**First**



# If you have problems with KubeFlow...

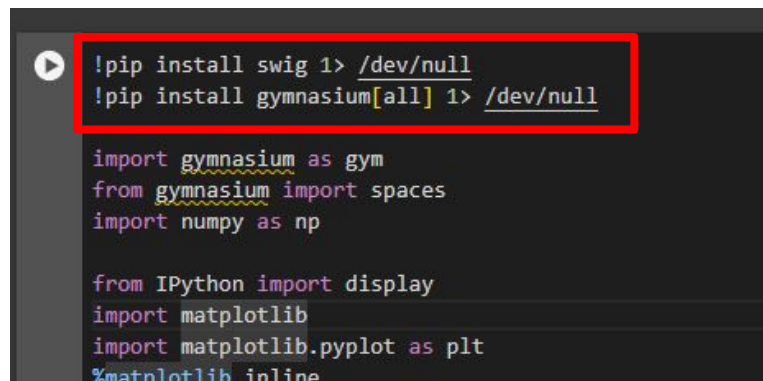
Launch the notebook



# If you have problems with KubeFlow...

Install these packages in the top cell:

```
!pip install swig 1> /dev/null  
!pip install gymnasium[all] 1> /dev/null
```



```
!pip install swig 1> /dev/null  
!pip install gymnasium[all] 1> /dev/null  
  
import gymnasium as gym  
from gymnasium import spaces  
import numpy as np  
  
from IPython import display  
import matplotlib  
import matplotlib.pyplot as plt  
%matplotlib inline
```