

Getting the Session Jupyter Notebook Running on Expanse



Key URLs

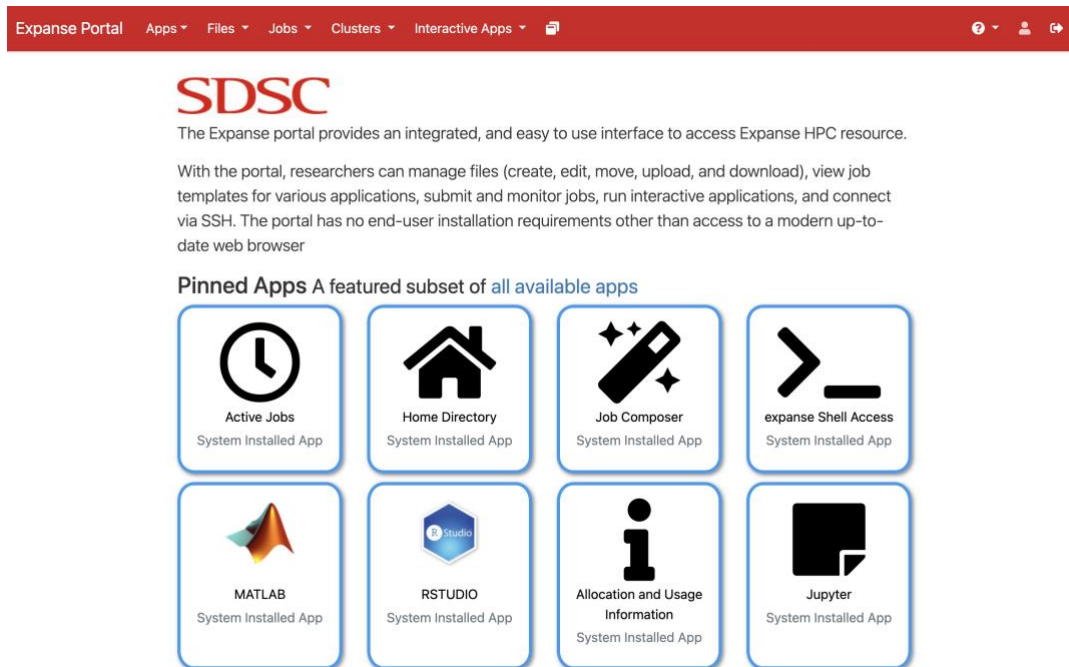
- Expanse Open On Demand portal: <https://portal.expanse.sdsc.edu/>
- Workshop Github repository: <https://github.com/access-ci-org/AI-Unlocked-Workshop-2025>
- Workshop Shared folder: [Public attendees main folder](#)

Step 1 – Get access to the Expanse Open OnDemand portal

Get access to the Expanse portal by clicking [here](#). You would need to log in first. Select your organization and proceed to log in.

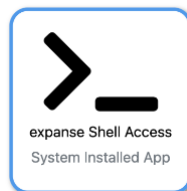
A screenshot of a web browser showing the Globus authentication page. The browser's address bar shows "auth.globus.org". The page has a blue header with the Globus logo. The main content area is white and contains the text "Log in to use SDSC Expanse Portal OIDC Authentication". Below this, it says "Use your existing organizational login" with examples "e.g., university, national lab, facility, project". There is a dropdown menu labeled "Look-up your organization...". Below the dropdown, it states "By selecting Continue, you agree to Globus terms of service and privacy policy." and there is a blue "Continue" button. Below this, there is a horizontal line with "OR" in the center. Underneath, there are three buttons: "Sign in with GitHub" (with the GitHub logo), "Sign in with Google" (with the Google logo), and "Sign in with ORCID iD" (with the ORCID logo). At the bottom, there is a link that says "Didn't find your organization? Then use Globus ID to sign in. (What's this?)"

Once you successfully log in, you should get to the “Expanse portal dashboard”.



Step 2 – Get an Expanse copy of the workshop Github repository

Let's clone the AI Unlocked 2025 workshop github repository. In the “Expanse portal dashboard”, click on the “expance Shell Access” app icon.



A new tab that looks like the image below will pop up. Ignore warning or error messages at this point.

```
← → ↻ portal.expense.sdsc.edu/pun/sys/shell/ssh/login.expense.sdsc.edu

Host: login.expense.sdsc.edu
Last login: Wed Apr 2 01:23:58 2025 from 132.249.233.139
Lmod has detected the following error: These module(s) or
extension(s) exist but cannot be loaded as requested: "gcc"
Try: "module spider gcc" to see how to load the module(s).

[paola17@login02 ~]$
```

Type (or copy paste) the following command to clone the Github repository with all the workshop materials.

```
git clone https://github.com/access-ci-org/AI-Unlocked-Workshop-2025.git
```

It should look like this before you hit the “return” key.

```
← → ↻ portal.expense.sdsc.edu/pun/sys/shell/ssh/login.expense.sdsc.edu 🔍 ☆ 📄

Host: login.expense.sdsc.edu
Last login: Wed Apr 2 01:23:58 2025 from 132.249.233.139
Lmod has detected the following error: These module(s) or
extension(s) exist but cannot be loaded as requested: "gcc"
Try: "module spider gcc" to see how to load the module(s).

[paola17@login02 ~]$ git clone https://github.com/access-ci-org/AI-Unlocked-Workshop-2025.git
```

Press the return key. You should get confirmation that the repo has been successfully cloned.

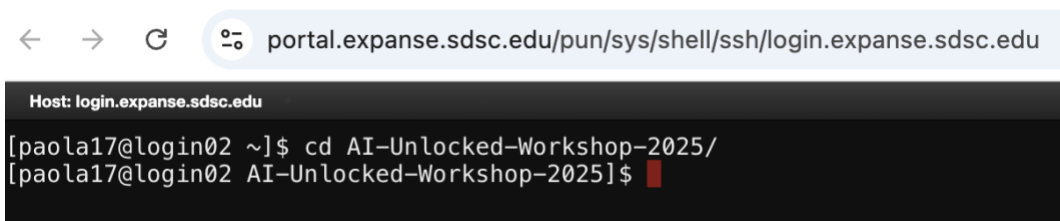
```
[paola17@login02 temp]$ git clone https://github.com/access-ci-org/AI-Unlocked-Workshop-2025.git
Cloning into 'AI-Unlocked-Workshop-2025'...
remote: Enumerating objects: 417, done.
remote: Counting objects: 100% (134/134), done.
remote: Compressing objects: 100% (96/96), done.
remote: Total 417 (delta 94), reused 45 (delta 37), pack-reused 283 (from 2)
Receiving objects: 100% (417/417), 133.99 MiB | 56.58 MiB/s, done.
Resolving deltas: 100% (172/172), done.
Updating files: 100% (100/100), done.
[paola17@login02 temp]$
```

Good job! In case you had cloned the repo before on Expanse and want to confirm you have the latest version available you can A) go to the repo folder and B) update your Expanse copy of the repo.

A) Go to the repo folder

Type the following command in your shell and press the “return” key.

```
cd AI-Unlocked-Workshop-2025/
```



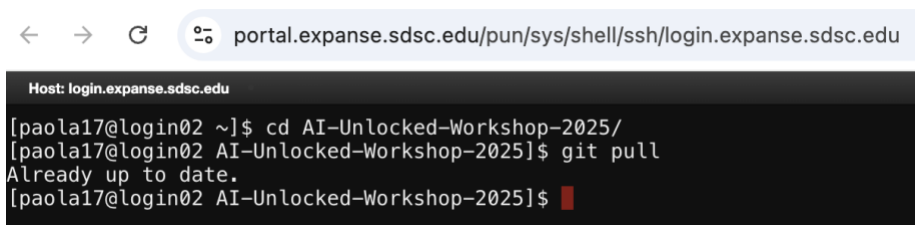
The screenshot shows a web browser window with the address bar displaying 'portal.expanse.sdsc.edu/pun/sys/shell/ssh/login.expanse.sdsc.edu'. Below the browser window is a terminal window with the following text:

```
Host: login.expanse.sdsc.edu
[paola17@login02 ~]$ cd AI-Unlocked-Workshop-2025/
[paola17@login02 AI-Unlocked-Workshop-2025]$
```

B) Update your Expanse copy of the repo.

Type the following command in your shell and press the “return” key.

```
git pull
```



The screenshot shows a web browser window with the address bar displaying 'portal.expanse.sdsc.edu/pun/sys/shell/ssh/login.expanse.sdsc.edu'. Below the browser window is a terminal window with the following text:

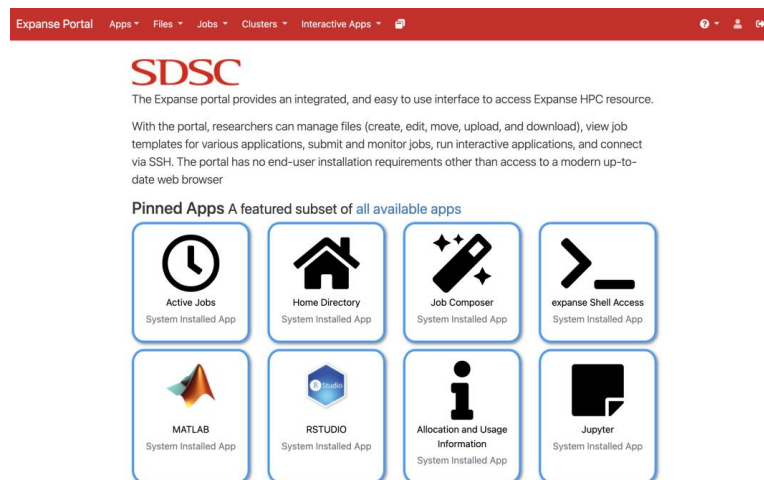
```
Host: login.expanse.sdsc.edu
[paola17@login02 ~]$ cd AI-Unlocked-Workshop-2025/
[paola17@login02 AI-Unlocked-Workshop-2025]$ git pull
Already up to date.
[paola17@login02 AI-Unlocked-Workshop-2025]$
```

You might get a confirmation that your Expanse copy of repo is up to date or, if it is not up to date, this command will pull the latest version of the workshop remote repo and describe the changes.

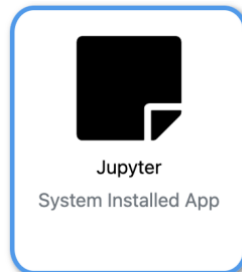
You now have the latest version of the repo ready to be used!

Step 3 - Get a Jupyter Lab or a Notebook instance running on Expanse!

Go back to <https://portal.expanse.sdsc.edu/>. You can click on this URL or open the appropriate tab.



Once, there, click on the “Jupyter” app box.



A new tab will pop up with a form that looks like the following:



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Session**

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portal.expense.sdsc.edu/pun/sys/sdsc_jupyter

Open OnDemand / Jupyter Session

Jupyter Session

Account:

Partition (Please choose the gpu, gpu-shared, or gpu-preempt as the partition if using gpus):

shared

Time limit (min):

30

Number of cores:

1

Memory required per node (GB):

2

GPUs (optional):

0

Singularity Image File Location: (Use your own or to include from existing container library at /cm/shared/apps/container e.g., /cm/shared/apps/containers/singularity/pytorch/pytorch-latest.sif)

Environment modules to be loaded (E.g., to use latest version of system Anaconda3 include cpu,gcc,anaconda3):

Use the following values to fill the form and press “submit” button at the end of the page.

Field	Value
Account:	ukl119 (or TG-CIS250186)
Partition (Please choose the gpu, gpu-shared, or gpu-preempt as the partition if using gpus):	gpu-shared
Time limit (min):	60
Number of cores:	1
Memory required per node (GB):	4
GPUs (optional):	1
Singularity Image File Location: (Use your own or to include from existing container library at /cm/shared/apps/container e.g., /cm/shared/apps/containers/singularity/pytorch/pytorch-latest.sif)	/cm/shared/apps/containers/singularity/tensorflow/tensorflow-latest.sif
Environment modules to be loaded (E.g., to use latest version of system Anaconda3 include cpu,gcc,anaconda3):	singularitypro
Conda Environment (Enter your own conda environment if any):	Leave blank
Conda Init (Provide path to conda initialization scripts)	Leave blank



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Conda Yaml (Upload a yaml file to build the conda environment at runtime)	Leave blank
Turn on use of mamba for speeding up conda-yml installs	Leave unchecked
Enable use of new caching mechanism that will store and reuse conda-yml created environments using conda-pack !!!!!	Leave unchecked
Reservation:	nairrworkshop <- (encouraged but optional!)
QoS:	gpu-shared-eot
Working directory:	Leave blank
Type:	JupyterLab

After providing this info in the form, hit “submit”.

Working directory:

Type:

JupyterLab

Submit

You should get a list of recent Jupyter sessions.

Jupyter Session

portal.expense.sdsc.edu/...

New Chrome available

Open OnDemand / Jupyter Session

Jupyter Session

2025-04-01
21:53:57 -0700

https://compacto-saint-phrase.expense-user-content.sdsc.edu/?token=9f83e4abb2cdcbf4cb2e47f57e77ba12

2025-04-01
21:55:23 -0700

https://uninvited-eligibly-during.expense-user-content.sdsc.edu/?token=2fcceeb4309f90841c774fdb7f445e8f

2025-04-01
22:08:15 -0700

https://unfounded-iphone-batboy.expense-user-content.sdsc.edu/?token=43a44aaa8dc0d6080b3b9ae1ac50bd0f

2025-04-01
22:08:51 -0700

https://crayfish-nucleus-ranking.expense-user-content.sdsc.edu/?token=92447ff8d7dbcf8c89e2968732d42a2



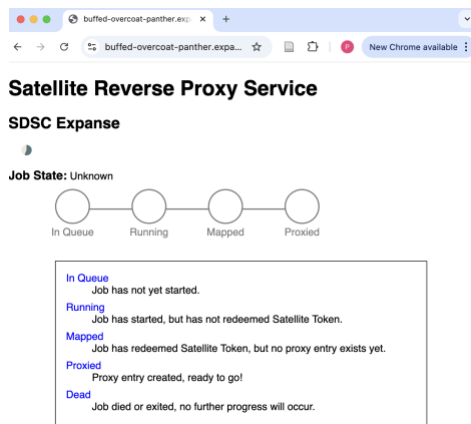
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The last one entry in the list, would correspond to the one you just requested. You can click on the URL on the right to get to the session.

It may take some time (minutes if Expanse is not overloaded) to get the session going.

When clicking of the session URL, if the session is still in the process of getting resources, you might see a screen like the following one.

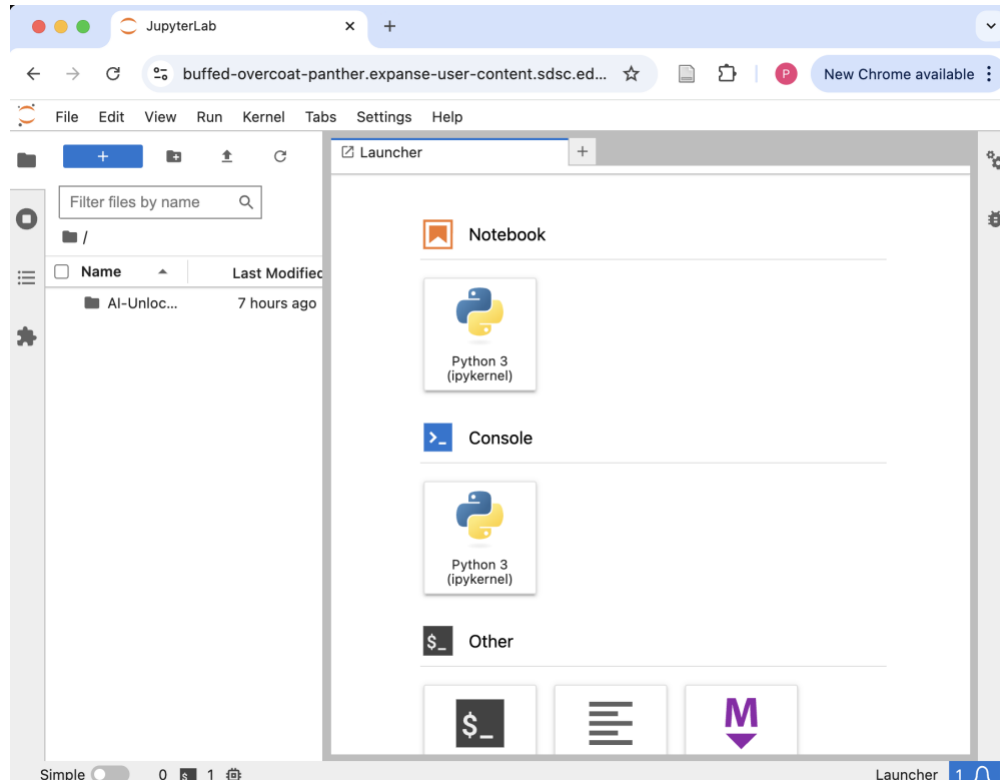


Eventually, the session will be allocated resource and the screen will automatically change to the following. You are now ready to navigate to the session subfolder and get access to the Jupyter notebook we will be using.



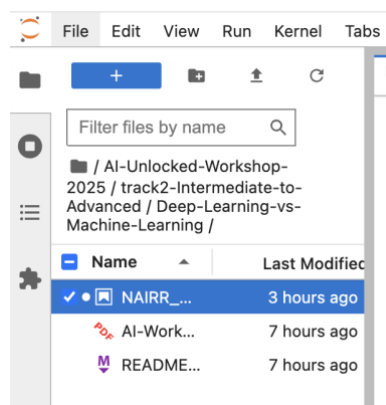
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By clicking in the corresponding folders on the file browser on the upper left of the screen, navigate to:

AI-Unlocked-Workshop-2025 > track2-Intermediate-to-Advanced > Deep-Learning-vs-Machine-Learning

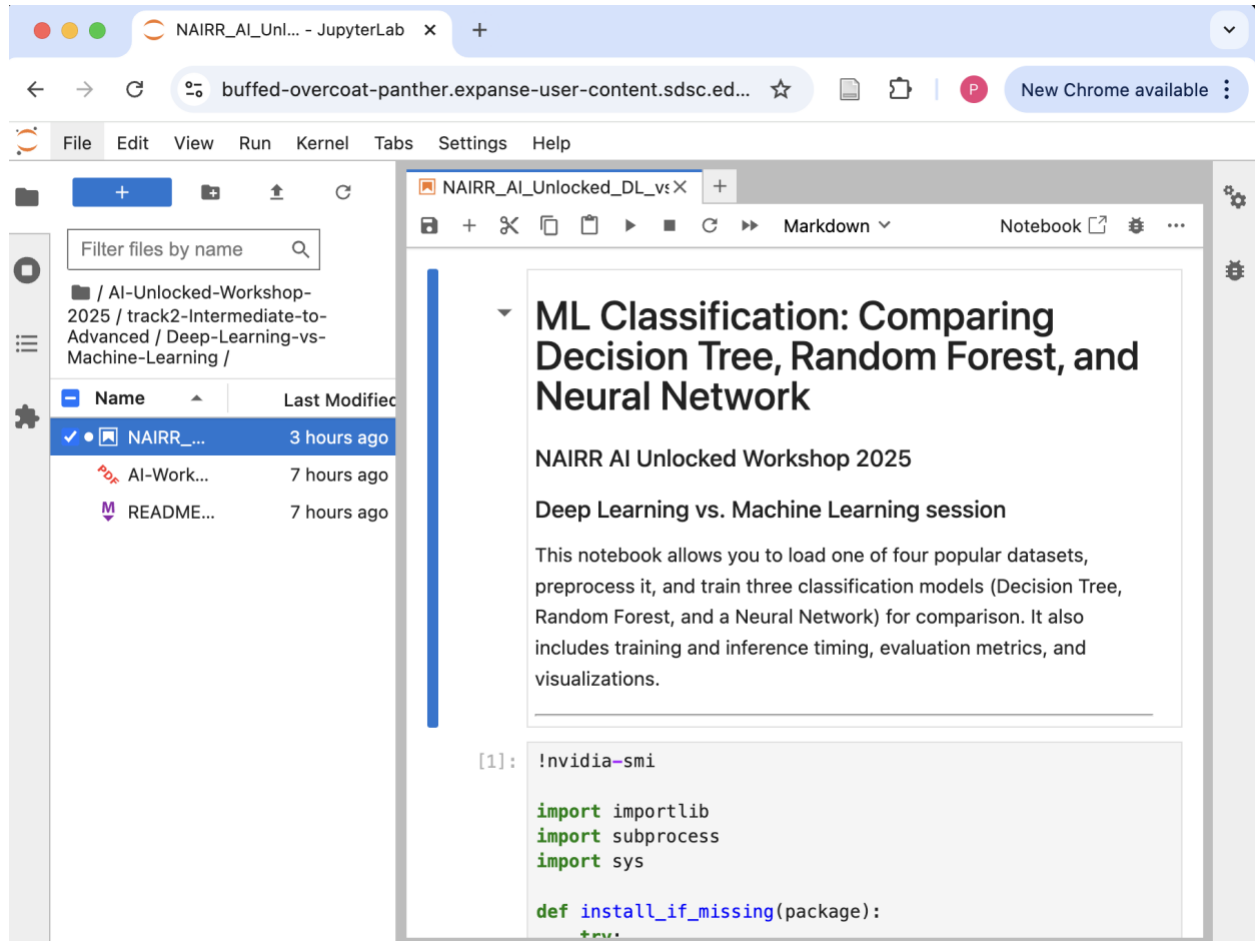


Once you reach the “Deep-Learning-vs-Machine-Learning” folder, double click on the “NAIRR_AI_Unlocked_DL_vs_ML_model_comparison_training.ipynb” file.



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Congratulations! We have now:

- Gained access to the Expanse Open OnDemand instance!
- Cloned or pulled the latest version of the workshop repository!
- Created a JupyterLab instance on Expanse!
- Gotten access to the Jupyter notebook of the session!

Great job!