

Getting the Session Jupyter Notebook Running on Delta



Key URLs

- Delta Open On Demand portal: <https://openondemand.delta.ncsa.illinois.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 Delta Open OnDemand portal

Get access to the Delta Open OnDemand (OOD) portal by clicking [here](#). You would need to log in first.

Provide your NCSA credentials (including 2FA). Prior to this, you should have received over email the info on your NCSA username and instructions on how to set up your password and 2FA.

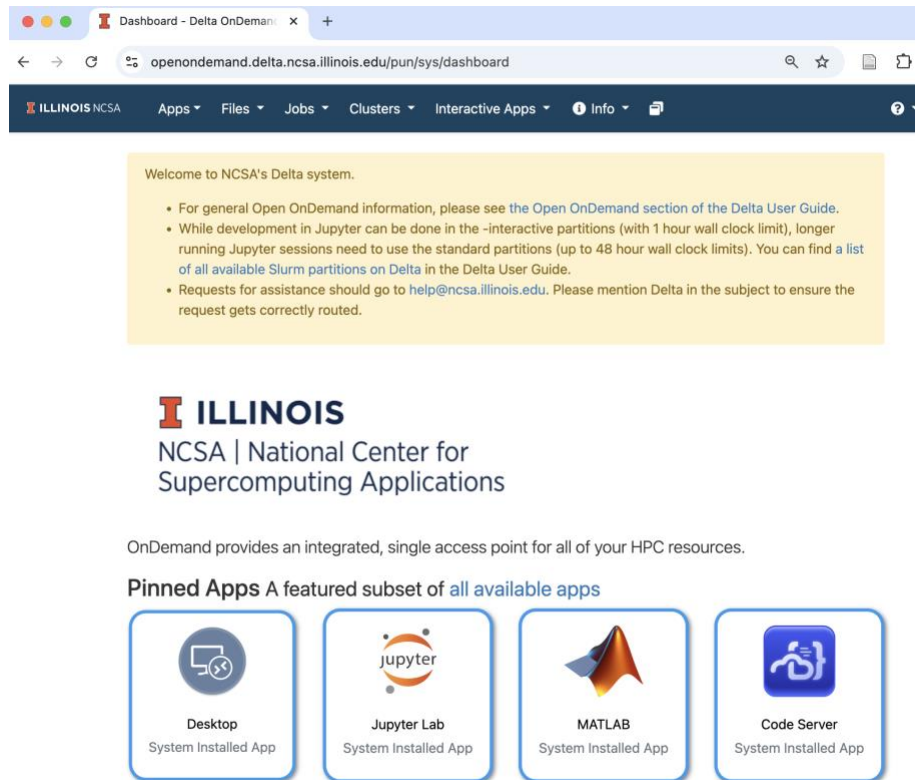
A screenshot of a web browser window showing the NCSA Web Login Service. The browser's address bar displays the URL: idp.ncsa.illinois.edu/idp/profile/SAML2/Redirect/SSO?execution=e5s1. The page header includes the NCSA logo and the text "NATIONAL CENTER FOR SUPERCOMPUTING APPLICATIONS UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN". Below this is a section titled "NCSA Web Authentication". On the left, there is a login form with fields for "NCSA Username" (containing "paola17") and "NCSA Kerberos Password" (masked with asterisks), and a "Login" button. To the right of the form is the "CILogon" logo and a description: "CILogon facilitates secure access to CyberInfrastructure (CI)". Below this description is a list of links: "Enroll In Duo", "Forgot Your Username?", "Forgot Your Password?", and "Send Email To Get Help".



NAIRR AI Unlocked Workshop 2025
Track 2 – Intermediate to Advance
**Deep Learning vs. Machine Learning
Session**

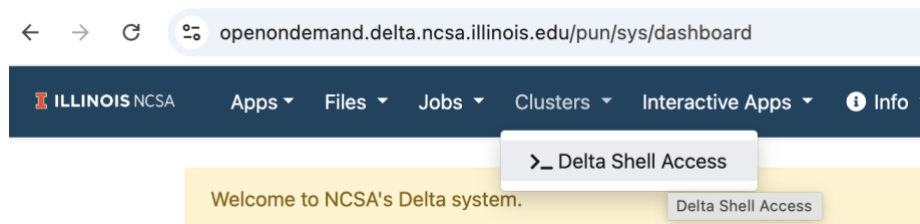
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Once you log in, you would gain access to the Delta OOD portal dashboard.



Step 2 – Get a Delta copy of the workshop Github repository

Let's clone the AI Unlocked 2025 workshop github repository. In the “Delta OOD portal dashboard”, go to the upper menu and click on “Clusters” and then on “>_ Delta Shell Access”.



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

```
Dashboard - Delta OnDemand x paola17@dt-login04:~ x +
openondemand.delta.ncsa.illinois.edu/pun/sys/shell/ssh/dt-login

Host: dt-login

NCSA Delta System

Login with NCSA Kerberos + NCSA Duo multi-factor.

DUO Documentation: https://go.ncsa.illinois.edu/2fa

dt-login04.delta.ncsa.illinois.edu (141.142.140.205)
OS: RedHat 8.8 HW: HPE CPU: 128x 2.45 GHz RAM: 252 GB

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User Guide: https://go.ncsa.illinois.edu/deltauserdoc

Last login: Tue Apr 1 22:00:42 2025 from 141.142.140.200
[paola17@dt-login04 ~]$
```

Type (or copy paste) the following command to clone the Github repository with all the workshop materials and press the “return” key.

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

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

```
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User Guide: https://go.ncsa.illinois.edu/deltauserdoc

Last login: Wed Apr 2 05:23:10 2025 from 141.142.140.200
[paola17@dt-login04 ~]$ 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.

```

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User Guide: https://go.ncsa.illinois.edu/deltauserdoc

Last login: Wed Apr 2 05:23:10 2025 from 141.142.140.200
[paola17@dt-login04 ~]$ 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 | 58.16 MiB/s, done.
Resolving deltas: 100% (172/172), done.
Updating files: 100% (100/100), done.
[paola17@dt-login04 ~]$
```

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

```
[paola17@dt-login04 ~]$ cd AI-Unlocked-Workshop-2025/
[paola17@dt-login04 AI-Unlocked-Workshop-2025]$
```

B) Update your Delta copy of the repo.

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

```
git pull
```

```
[paola17@dt-login04 ~]$ cd AI-Unlocked-Workshop-2025/
[paola17@dt-login04 AI-Unlocked-Workshop-2025]$ git pull
Already up to date.
[paola17@dt-login04 AI-Unlocked-Workshop-2025]$
```

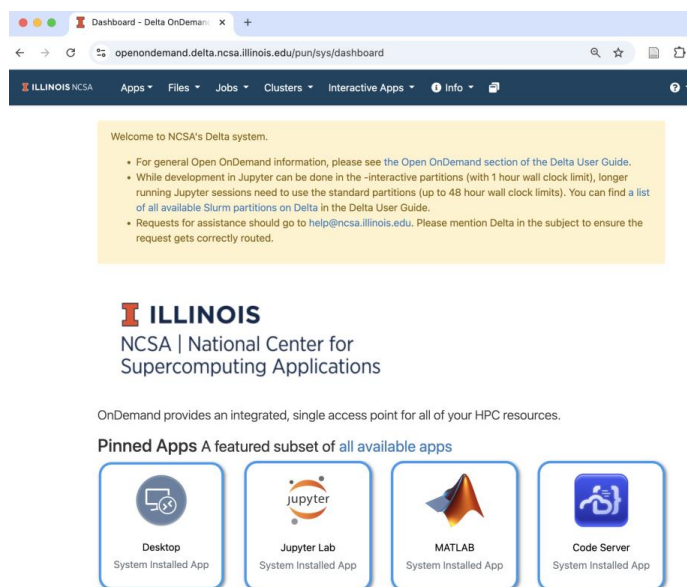
You might get a confirmation that your Delta copy of repo is up to date or, if it is not up to date, this command will pull the latest version of the workshop remote repo and describe the changes.

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 Delta!

Go back to the Delta portal dashboard: <https://openondemand.delta.ncsa.illinois.edu/>.

You can click on this URL or open the appropriate tab.



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



You will be redirected to a form that looks like the following:



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Session

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ILLINOIS NCSA

AppsFilesJobsClustersInteractive AppsInfo

Welcome to NCSA's Delta system.

- For general Open OnDemand information, please see the [Open OnDemand section of the Delta User Guide](#).
- While development in Jupyter can be done in the -interactive partitions (with 1 hour wall clock limit), longer running Jupyter sessions need to use the standard partitions (up to 48 hour wall clock limits). You can find [a list of all available Slurm partitions on Delta](#) in the Delta User Guide.
- Requests for assistance should go to help@ncsa.illinois.edu. Please mention Delta in the subject to ensure the request gets correctly routed.

Home / My Interactive Sessions / Jupyter Lab

Interactive Apps

Jupyter

Jupyter Lab

MATLAB

MATLAB

Servers

Code Server

Visualization

TensorBoard

Desktop

Jupyter Lab

This app will launch a Jupyter Lab server on one compute node.

Name of account

beeh-delta-gpu

Chargeable account of the form abcd-delta-cpu or abcd-delta-gpu. Replace abcd with your allocation code.

Partition

gpuA40x4-interactive

Interactive partitions are limited to one hour.

Duration of job

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

Field	Value
Name of account	beeh-delta-gpu
Partition	gpuA100x4-interactive or gpuA40x4-interactive
Duration of job	1:00:00
Name of reservation (leave empty if none)	Leave blank
Number of CPUs	16
Amount of RAM	4GB
Number of GPUs	1
Working Directory	Leave blank

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

Working Directory

Select your project directory; defaults to \$HOME

Select Path

Launch

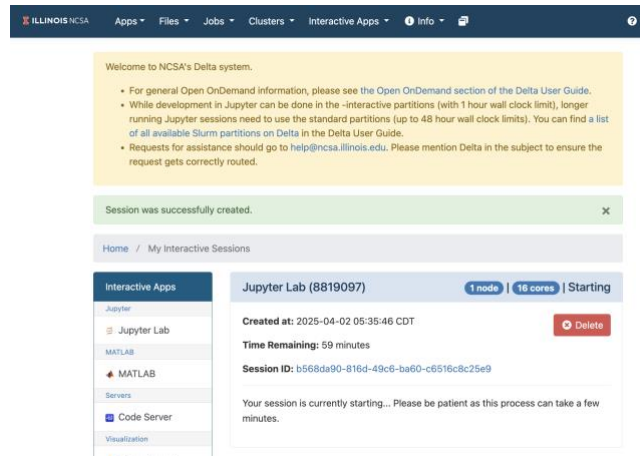
* The Jupyter Lab session data for this session can be accessed under the [data root directory](#).



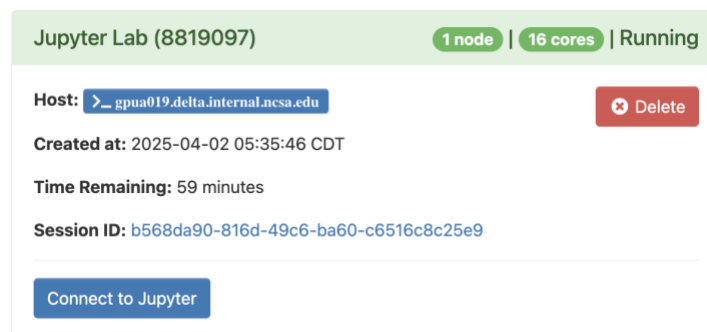
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You should get a confirmation message indicating the session was successfully created. A list of cards with the one card on top representing your most recent Jupyter session will also be available on the right side of the screen.



It may take some time to get the session going. Once the session is ready, your card will change to “Running” status. Click on the “Connect to Jupyter” button in the card.

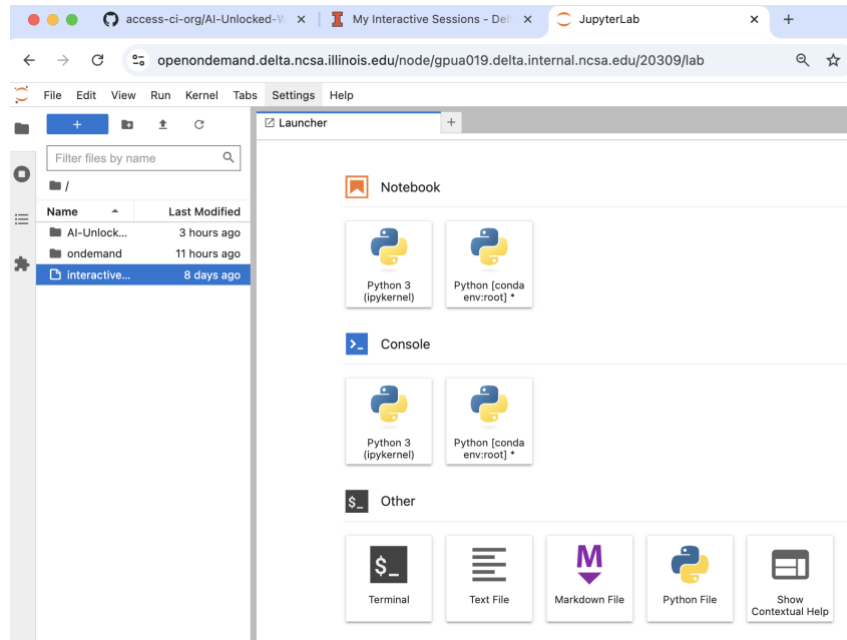


A new tab will pop up with your JupyterLab session. You are now ready to navigate to the session subfolder and get access to the Jupyter notebook we will be using.



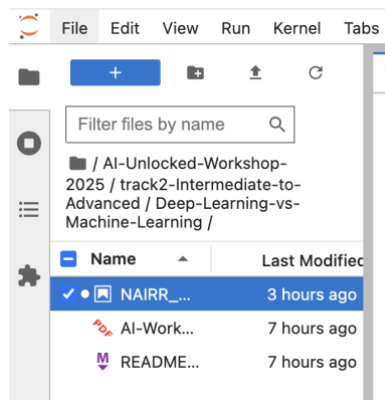
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By clicking in the corresponding folders on the file browser on the upper left of the screen, navigate to:

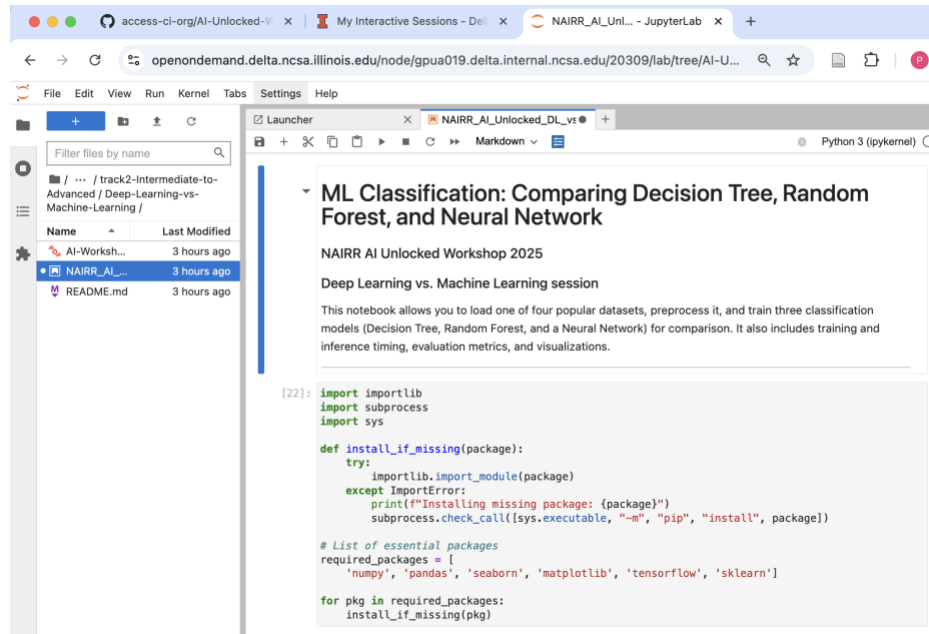
AI-Unlocked-Workshop-2025 > track2-Intermediate-to-Advanced > Deep-Learning-vs-Machine-Learning



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.

NAIRR AI Unlocked Workshop 2025 Track 2 – Intermediate to Advance **Deep Learning vs. Machine Learning Session**

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Congratulations! We have now:

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

Great job!