

Introduction to Copernicus Dataspace

JupyterLab and Copernicus Browser

CS-E407519 - Special Course in Machine Learning, Data Science and Artificial Intelligence: **Machine Learning for Climate Action**

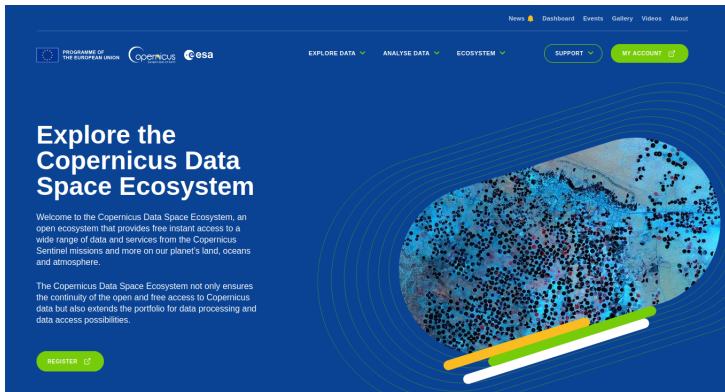
Copernicus Dataspace

An important part of the course will take place in the Jupyterlab environment from Copernicus Data Space Ecosystem:

<https://dataspace.copernicus.eu/>.

You need to register to access two of the main tools we will use:

Copernicus JupyterLab environment and **Copernicus Browser**



The screenshot shows the homepage of the Copernicus Data Space Ecosystem. The header includes the logos for the Programme of the European Union, Copernicus, and ESA. Navigation links include 'EXPLORE DATA', 'ANALYSE DATA', 'ECOSYSTEM', 'SUPPORT', and 'MY ACCOUNT'. The main content area features the heading 'Explore the Copernicus Data Space Ecosystem' and a welcome message: 'Welcome to the Copernicus Data Space Ecosystem, an open ecosystem that provides free instant access to a wide range of data and services from the Copernicus Sentinel missions and more on our planet's land, oceans and atmosphere.' Below this is a paragraph: 'The Copernicus Data Space Ecosystem not only ensures the continuity of the open and free access to Copernicus data but also extends the portfolio for data processing and data access possibilities.' A 'REGISTER' button is located at the bottom left. On the right side, there is a large satellite image of a coastal area with a grid overlay and a stylized graphic of three overlapping bars in orange, green, and white.

Copernicus Dataspace: JupyterLab and Github

Once you are registered you get access to a wide range of Earth observation data from the Copernicus Sentinel missions, and different tools to work with these data. Feel free to explore on your own.

You can access to JupyterLab in the ANALYSE DATA section.

PROGRAMME OF THE EUROPEAN UNION

Copernicus

ESA

News Dashboard Events Gallery Videos About

EXPLORE DATA ANALYSE DATA ECOSYSTEM SUPPORT MY ACCOUNT

APIs
Data Workspace
Traceability
JupyterLab
openEO
Sentinel Hub

DECEMBER 19, 2023

Rovaniemi, the official hometown of Santa Claus

Did you know that during the winter months, land masses in the far north of the northern hemisphere are not imaged by Sentinel-2 due to the lack of sunlight? Therefore, the only satellite imagery available is available from Sentinel-1 which doesn't...

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Copernicus Dataspace: JupyterLab

When you connect to JupyterLab you have 3 server options, you can go with the small one as default option and change to bigger options if your kernel crashes or your run out of memory while doing the exercises.

In JupyterLab, all users have access to two folders: `/samples` and `/mystorage`.

- ▶ In `/samples` you have access to different examples of Jupyter notebooks that make use of satellite data and special Python libraries to work with these data. You can run these notebooks but cannot save any changes to them.
- ▶ In `/mystorage` you can store your own files. This is where you can fetch the course weekly homework from GitHub ¹.

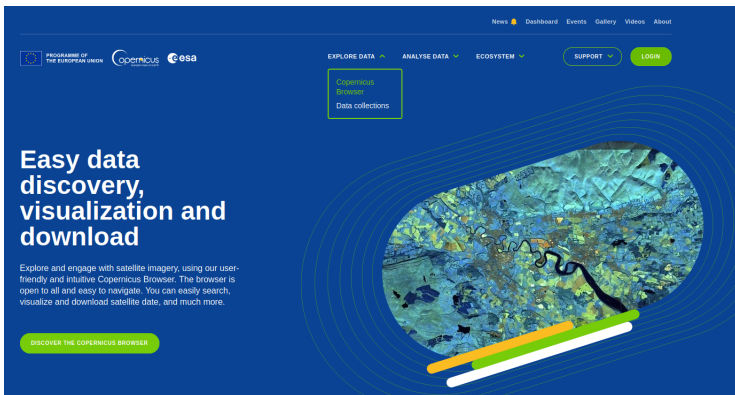
Homework will be made available during the course on GitHub in the form of GitHub repositories. Each repository will contain a Jupyter notebook with the exercises for the corresponding week, and these are prepared to be done in Copernicus JupyterLab.

¹You need to create a GitHub account. Read separate instructions regarding Github in MyCourses

Copernicus Dataspace: Copernicus Browser

In the Copernicus Browser

<https://dataspace.copernicus.eu/browser/> you can explore satellite imagery from a range of satellites using their browser.



The screenshot shows the Copernicus Browser website interface. At the top, there is a navigation bar with links for News, Dashboard, Events, Gallery, Videos, and About. Below this, the logos for the Programme of the European Union, Copernicus, and ESA are displayed. The main navigation menu includes 'EXPLORE DATA', 'ANALYSE DATA', 'ECOSYSTEM', 'SUPPORT', and 'LOGIN'. A dropdown menu for 'EXPLORE DATA' is open, showing 'Copernicus Browser' and 'Data collections'. The main content area features a large, stylized satellite image of a landscape with a winding road, overlaid with concentric blue circles. To the left of the image, the text reads 'Easy data discovery, visualization and download'. Below this text, a paragraph describes the browser's capabilities: 'Explore and engage with satellite imagery, using our user-friendly and intuitive Copernicus Browser. The browser is open to all and easy to navigate. You can easily search, visualize and download satellite data, and much more.' A green button labeled 'DISCOVER THE COPERNICUS BROWSER' is positioned below the text.

Copernicus Dataspace: Copernicus Browser

You can navigate through different dates and different satellite missions and see the corresponding satellite data directly on the browser.

