

Renku

An open source
platform for
collaborative research

Elisabet Capon Garcia

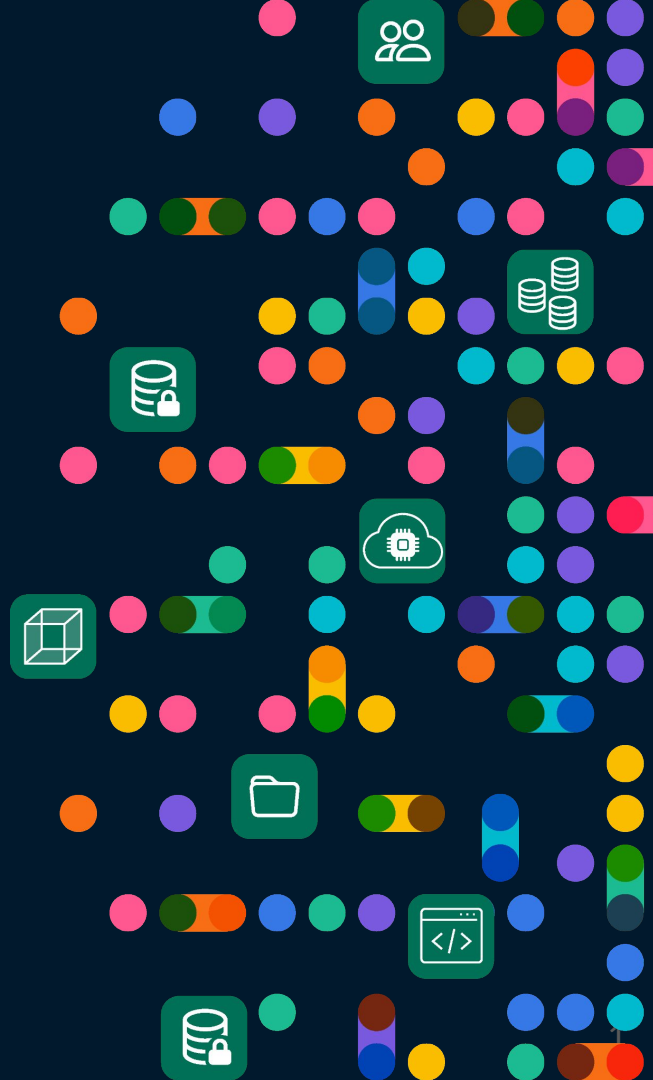
<elisabet.capon@sdsc.ethz.ch>

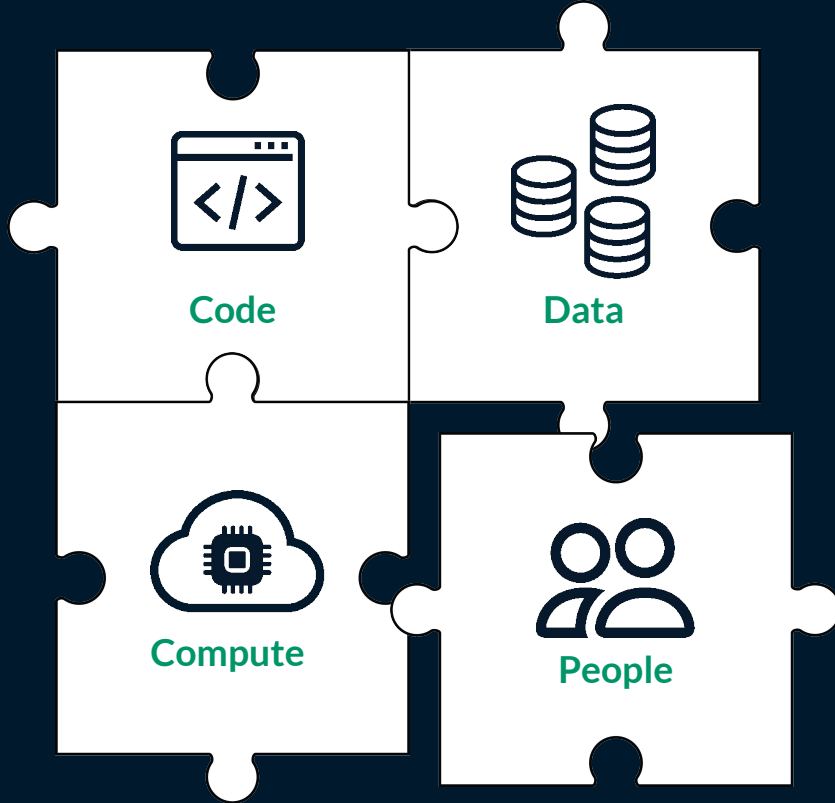
3 March 2026



ETH zürich

EPFL

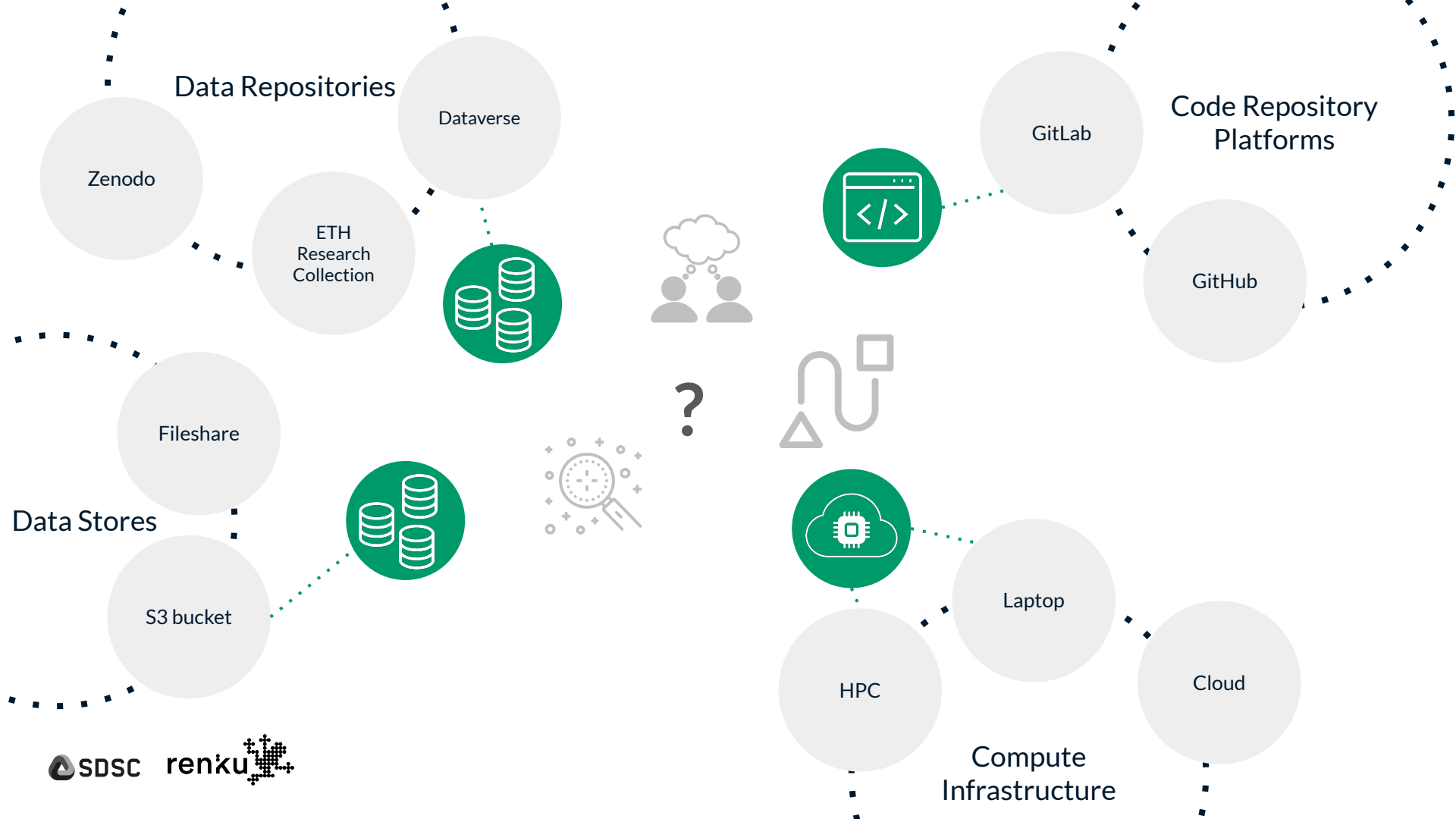


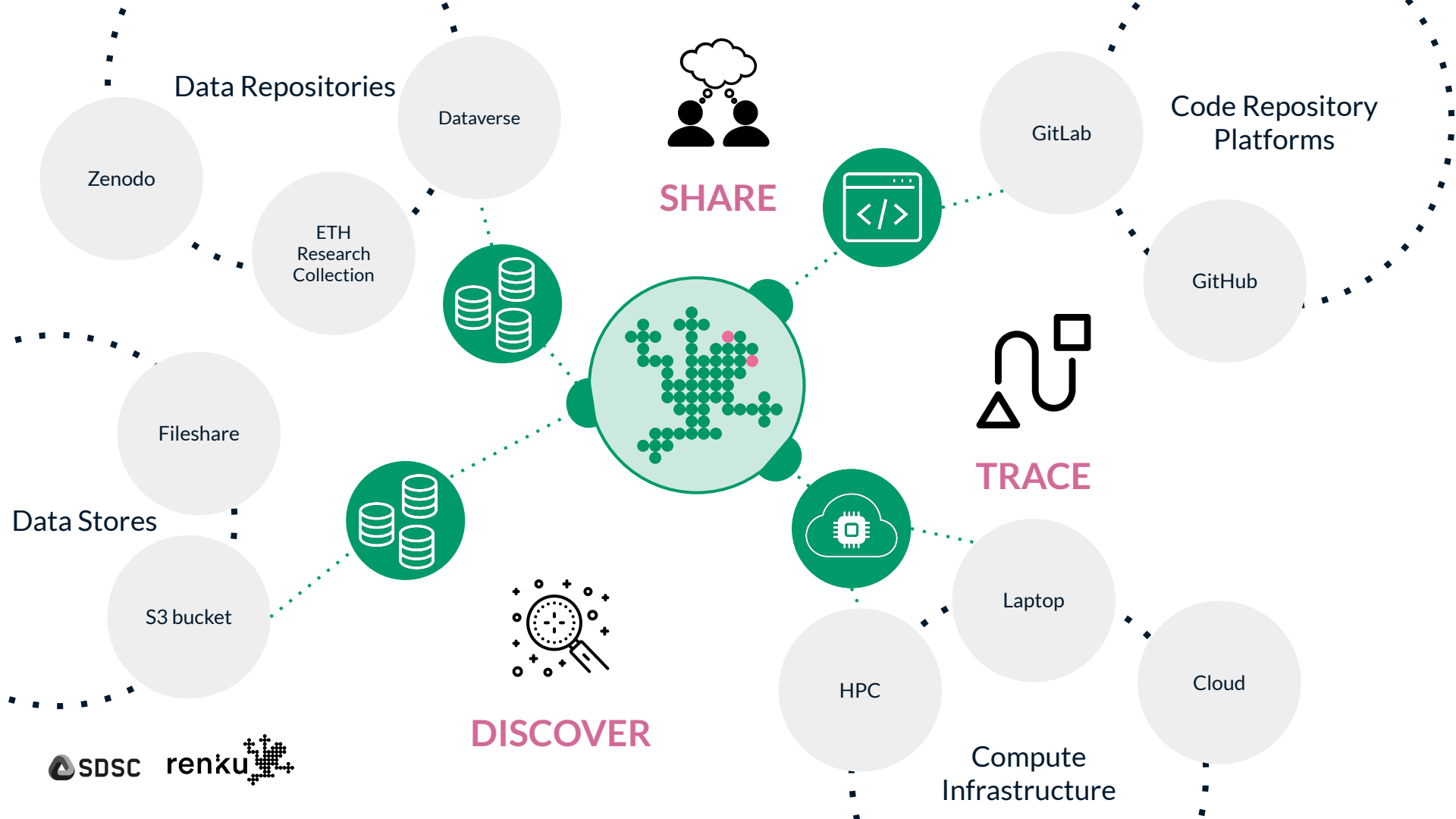


OUR VISION

Renku is an open-source platform that **connects the ecosystem of data, code, and compute** to empower researchers to build **collaborative communities**.







Data



Search Dashboard + ? Login

Alpine Climate Analysis

Analysis and visualization of micro-climate changes in the Swiss alps from 1900 to today.

[Overview](#) [Settings](#)

Sessions 2

Session launchers are available to everyone who can see the project. Running sessions are only accessible to you.

Session Launcher Custom image environment

Shiny App Launch

Session Launcher Custom image environment

RStudio Launch

Session

My running session Deleted 7 minutes ago Open

Data 1

Climate-Manipulation
RT: renku-team
Public
Created 7 months ago

Code Repositories 2

alpine-climate-analysis Pull only

TimeFRAME Pull only

Documentation

Info

Namespace: [Renku team](#)

Visibility: Public

Created: 11 months ago

Members 3
[Laura Kinkead](#)
[Rok Roskar](#)
[Elisabet Capon](#)

Keywords 0

Compute

Code



Who is Renku for?

RESEARCHERS



Unified Research

Connect your entire research workflow in one place. Collaborate across specialties without technical barriers.

[Learn more](#)

EDUCATORS



Computing Courses made easy

Help your students focus on the material, not getting lost during setup. Ideal for project-based coursework and time-sensitive workshops.

[Learn more](#)

EVENT ORGANIZERS

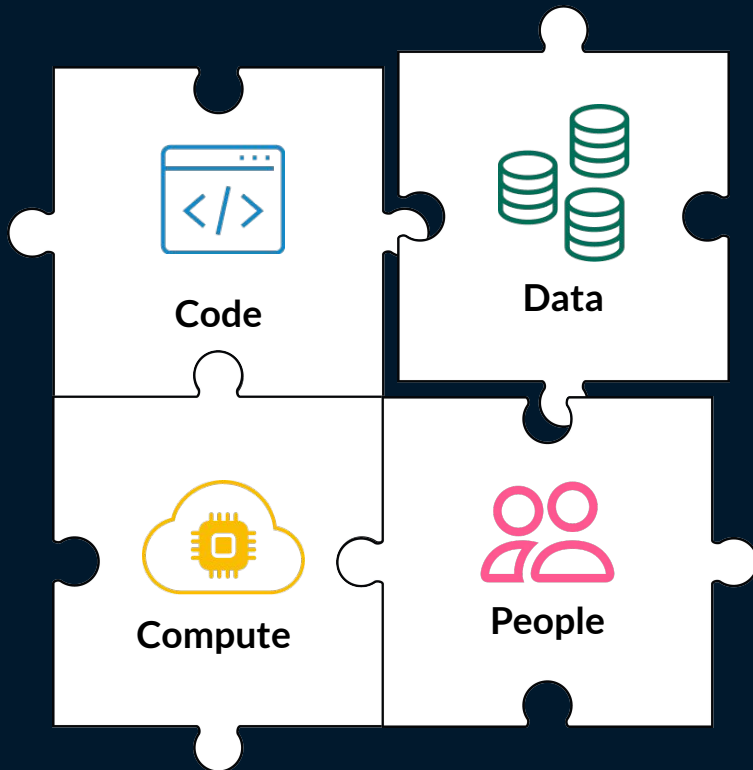


Seamless Events

Focus on innovation, not setup and infrastructure. Provide a consistent environment for all teams, and get participants coding and collaborating right away.

[Learn more](#)

Main Features



DATA

- Flexible support for attaching remote storage to groups, projects, and sessions
- Sharing of data connectors between groups and projects
- User-based credentials management
- Import/export to data repositories

Connection to ...

Data repositories



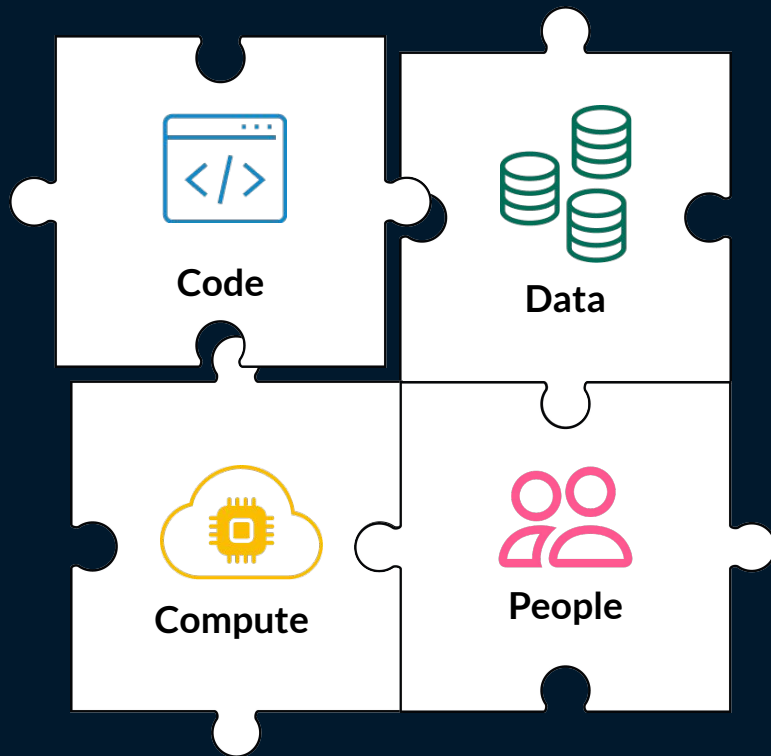
See our [docs](#) for
more information

Cloud storage systems



* available in next release

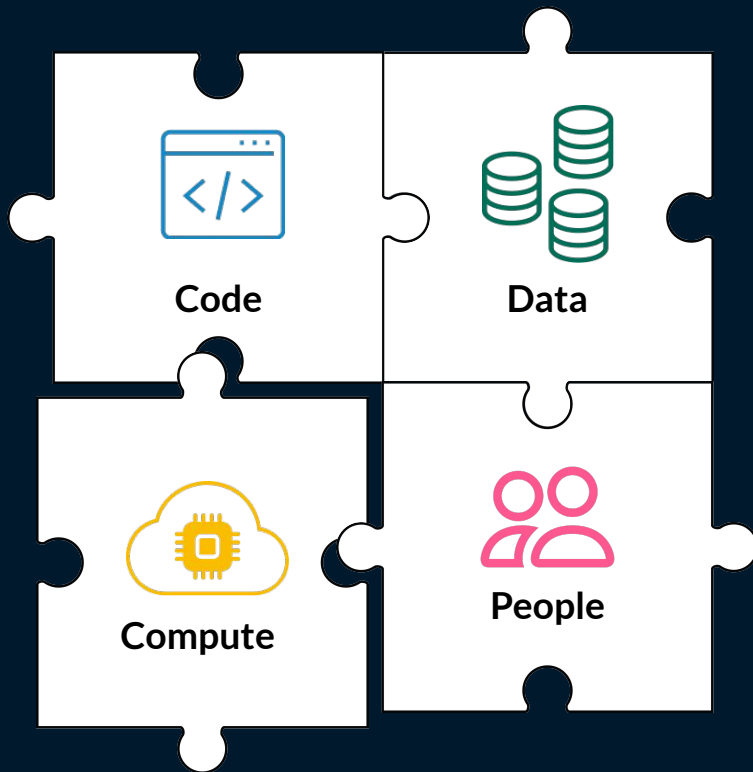
Main Features



CODE

- Connect to git repositories
- Automatic credential management in sessions
- Retain access control at the source

Main Features



COMPUTE

- Use (almost) any docker image with a web frontend
- Manage and use secrets in sessions
- Easy on-boarding through maintained global images

Session launchers

- Support for external private images
- Code based environments

Environment type

- Rstudio
- Python

User interface

- VSCodium
- Jupyter

Architecture

- linux/arm64
- linux/amd64

The image displays three overlapping screenshots of the RenkuLab web interface. The top-left screenshot shows the 'Launch a session' dialog box with three options: 'Global environment', 'Create from code', and 'External environment'. The top-right screenshot shows the 'ADORE' project page with a 'Sessions' tab and a 'Code Repositories' section. The bottom screenshot shows the 'Session Environment' details for a 'Python environment', including build status, repository URL, container image, and resource class.

Launch a session dialog:

- Global environment:** Get started quickly with a pre-built environment.
- Create from code:** Customize your session with a requirements.txt or similar file.
- External environment:** Run a session from a preexisting docker image.

Session Environment details:

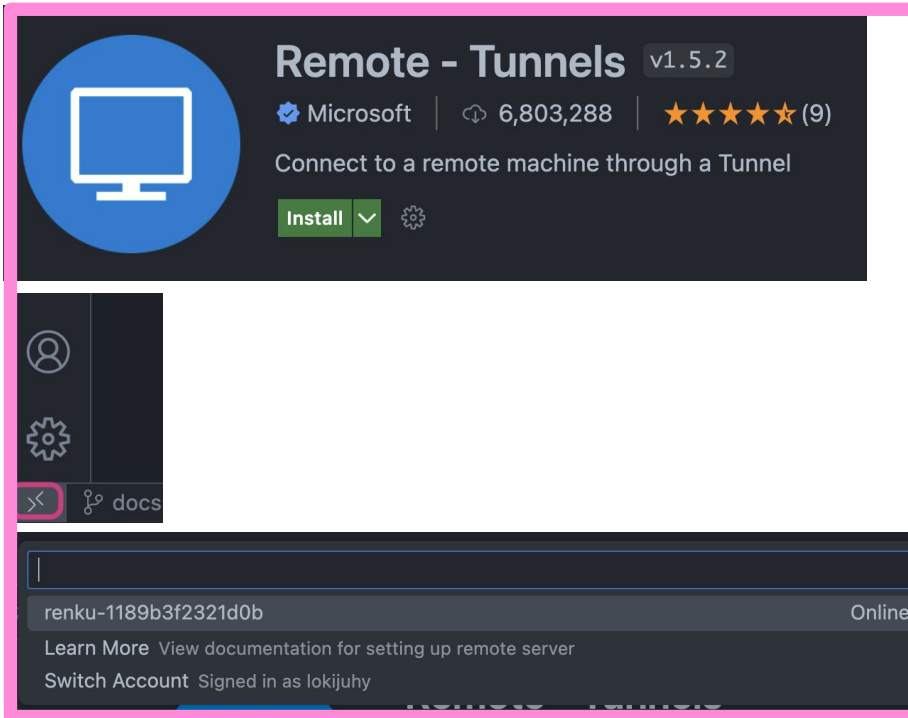
- Python environment**
- Code based environment**
- Last build status:** Build succeeded
- Built from code repository:** <https://gitlab.datascience.ch/mltox/adore>
- Environment type:** python
- User interface:** jupyterlab
- Container image:** harbor.renkulab.io/renku-build/renku-build:renku-01khtcmss6ga2vamncs6q12
- Default URL path:** /lab
- Port:** 8888
- Working directory:** /home/renku/work
- Mount directory:** /home/renku/work
- UID:** 1000
- GID:** 1000
- Command:**
- Args:**
- Strip session URL path prefix:** No
- Default Resource Class:** small class from default pool | 0.4 cpu | 1 GB memory | 10 GB storage | 0 gpu
- Default URL:** The default URL specifies the URL pathname on the session to go to upon launch
- Data Connectors:** No data connectors included

Work locally in VSCode and compute remotely

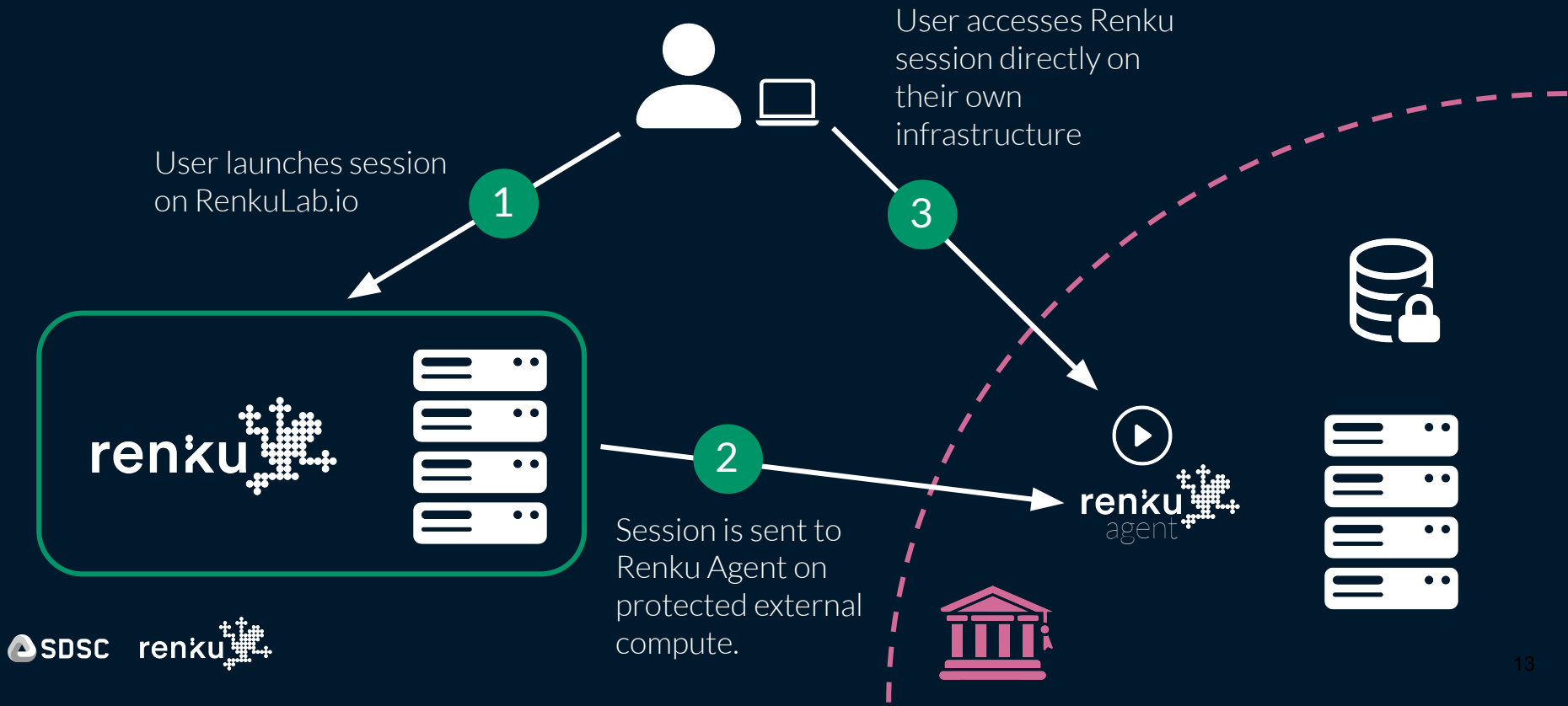
- **Most Renku global environments** \geq version 2.7.0. (except RStudio related environments)
- All Renku **code based environments** that were built (or rebuilt) after September 2, 2025 (release 2.7.0)

RenkuLab

1. **Launch a Renku session** that uses one of the supported environments listed above.
2. **Open a terminal** inside the session.
3. Run **start_tunnel** and follow the instructions:
 - Log in to VSCode with either your Microsoft account or GitHub account
 - Open the displayed link and enter the device code
 - When it shows you another URL to open, you are done. Continue to the next steps.



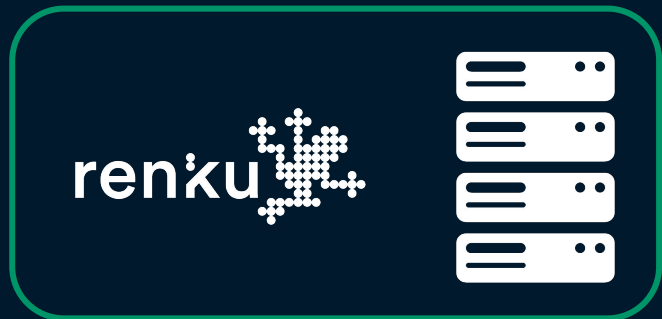
Renku & External Compute



Renku & External Compute

Centralized project hub

Share projects openly, even when they contain connections to protected resources.

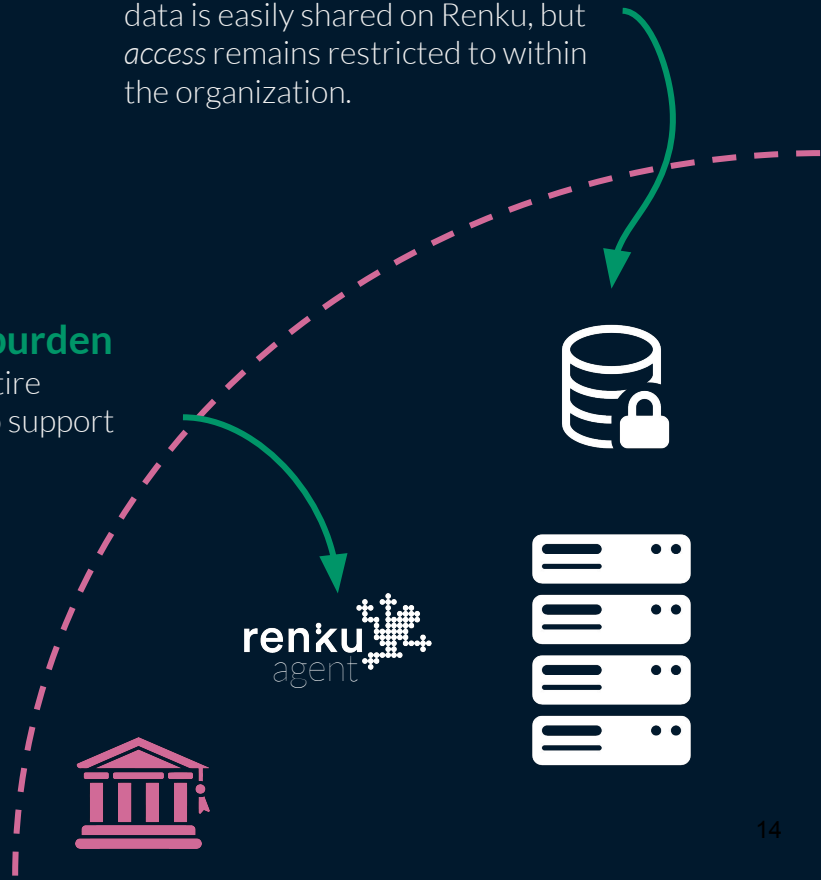


Minimal admin burden

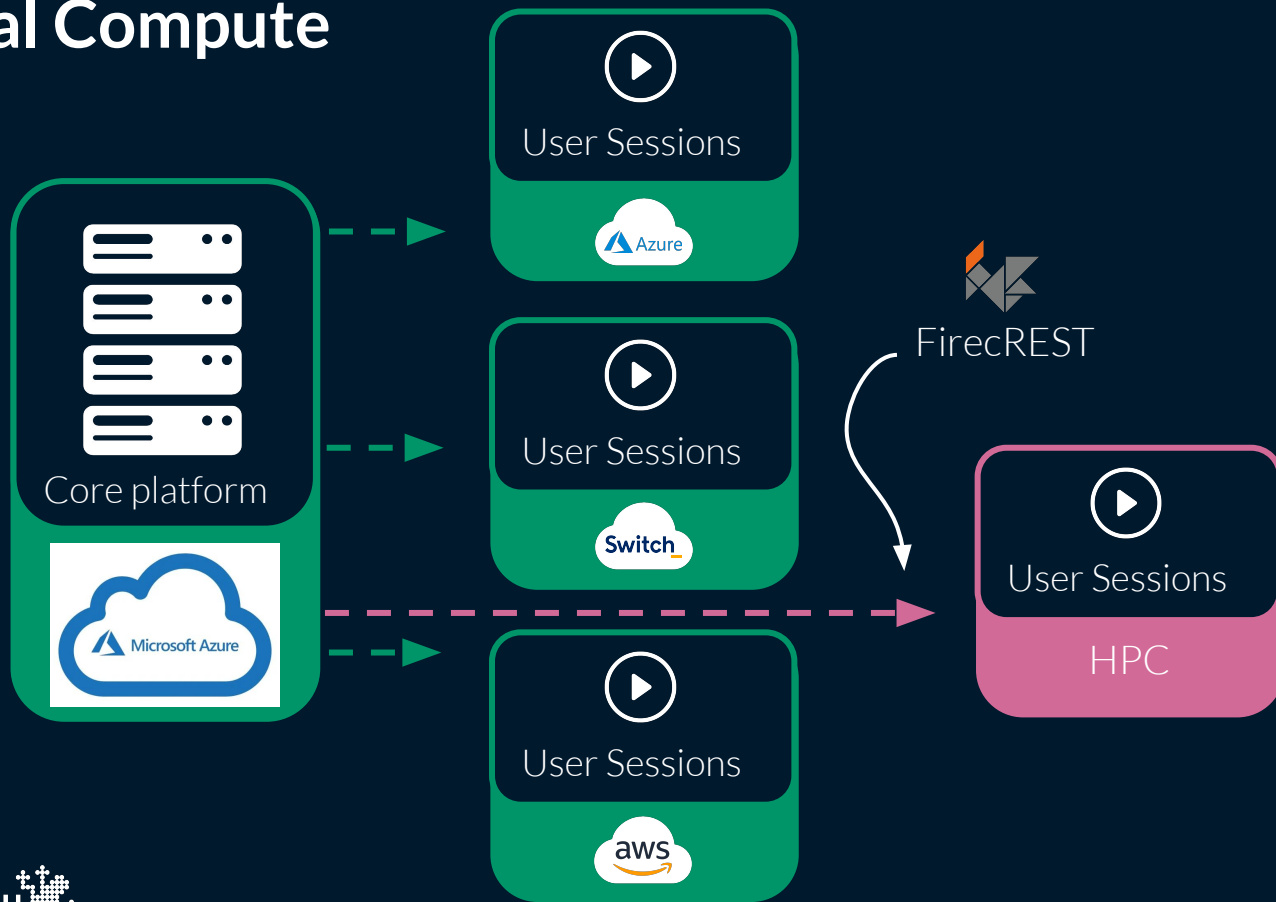
No need to run an entire RenkuLab instance to support Renku sessions.

Protected data stays put

Access configuration for protected data is easily shared on Renku, but access remains restricted to within the organization.



External Compute



Renku sessions at CSCS



Integrations

Integrations with external services allow you to connect your Renku projects with external private repositories and images.

GitHub.com URL: https://github.com Status: Pending	ETH D-INFK GitLab URL: https://gitlab.inf.ethz.ch Status: Not connected
ZHAW GitHub URL: https://github.zhaw.ch Status: Not connected	GitLab.com URL: https://gitlab.com Status: Not connected
SDSC GitLab URL: https://gitlab.datascience.ch Status: Pending	UZH GitLab URL: https://gitlab.uzh.ch Status: Not connected
ETH GitLab URL: https://gitlab.ethz.ch Status: Not connected	Gitlab IN2P3 URL: https://gitlab.in2p3.fr Status: Not connected
Eawag GitLab URL: https://gitlab.eawag.ch Status: Not connected	DCC GitLab URL: https://git.dcc.sib.swiss Status: Not connected
CSCS URL: https://cscs.ch Status: Pending	GitHub Container Registry URL: https://github.com Status: Not connected
BFH GitLab URL: https://gitlab.ti.bfh.ch Status: Not connected	WSL GitLab URL: https://git.wsl.ch Status: Not connected
EMPA GitLab URL: https://gitlab.empa.ch Status: Not connected	

2

Access to CSCS

With CSCS account

LOG IN

[Reset OTP?](#) [Forgot Password?](#)

With third-party account

You can link and use another provider if you already have a CSCS account

3

Select the compute resource to a CSCS class in your session launcher to start your session there.

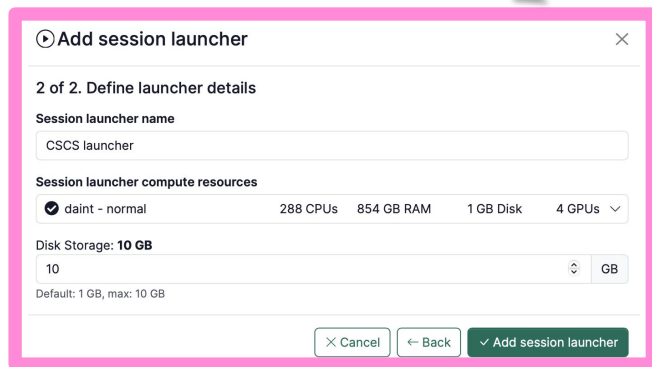
Sessions at CSCS - Build your image directly in Renku

1 Set up your Git repository

Create an environment.yml with all the packages that need to be available in your environment.

2 Add a code based environment

3 Select the CSCS resource pool



Add session launcher

2 of 2. Define launcher details

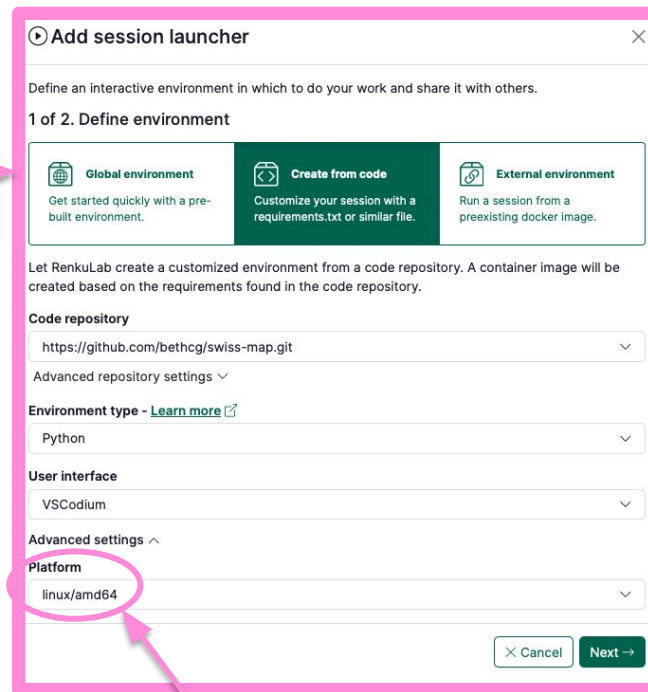
Session launcher name
CSCS launcher

Session launcher compute resources
daint - normal 288 CPUs 854 GB RAM 1 GB Disk 4 GPUs

Disk Storage: 10 GB
10 GB

Default: 1 GB, max: 10 GB

Cancel Back Add session launcher



Add session launcher

Define an interactive environment in which to do your work and share it with others.

1 of 2. Define environment

Global environment Create from code External environment

Get started quickly with a pre-built environment. Customize your session with a requirements.txt or similar file. Run a session from a preexisting docker image.

Let RenkuLab create a customized environment from a code repository. A container image will be created based on the requirements found in the code repository.

Code repository
https://github.com/bethcg/swiss-map.git

Advanced repository settings

Environment type - Learn more
Python

User interface
VSCodium

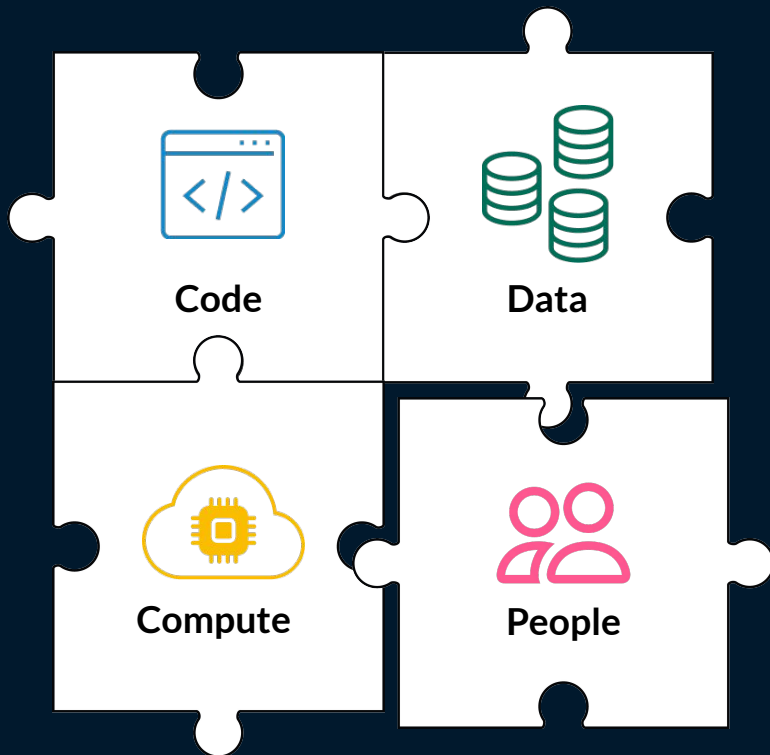
Advanced settings

Platform
linux/amd64

Cancel Next

For Daint, build an ARM image

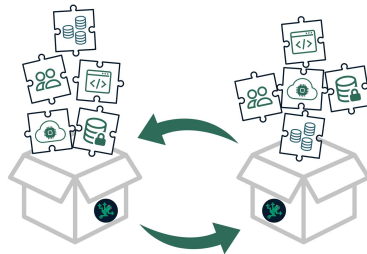
Main Features



COLLABORATION

- Support for public, private, and group spaces
- Projects and data connectors can be shared via direct or group membership
- Create template projects for teaching and workshops
- Searchable group spaces with reusable project assets

Group pages and search



renku

Search Dashboard

IR

ITES rDay @2025

We gather all the projects related to the research day at the Institute of Terrestrial Ecosystems at ETHZ.

Overview

Search

Settings

Projects 7

Niche dynamics for *Chionis minor* and *Chionis albus*

IR ites-rday-2025

Escobar et al. 2025 (Proceedings B) Climate-driven range shifts across sub-Antarctic and Antarctic terrestrial and marin...

Public

Updated 5 months ago

Beyond biomass: how interactions shape species' importance for ecosystem functioning

IR ites-rday-2025

This novel characterization of the functional contribution of species reveals that, due to biotic interactions, rare species t...

Public

Updated 6 months ago

And 5 more...

[View all group projects](#)

Data 2

Ecosystem 2 Measurements - 1998 to date

IR ites-rday-2025

s3 AWS

Public Read only

Created 6 months ago

Ecosystem 1 Measurements - 1995 to date

IR ites-rday-2025

Info

Identifier:
@ites-rday-2025

Created:
6 months ago

Members 4

[Dupre, Jimena \(Owner\)](#)
[Elisabet Capon \(Owner\)](#)
[Rok Roskar \(Owner\)](#)
[Laura Kinkead \(Editor\)](#)

renku

Search Dashboard

IR

ITES rDay @2025

We gather all the projects related to the research day at the Institute of Terrestrial Ecosystems at ETHZ.

Overview

Search

Settings

Search...

Search

7 results (filtered by Content: Project)

Content

Project 7

Data 2

Group member

All members

RR Rok Roskar

LK Laura Kinkead

EC Elisabet Capon

DJ Dupre, Jimena

Keyword

demo 2

biomod2 1

climate model 1

ecology 1

ecospat 1

ecosystem model 1

meta-learner 1

Climate Change and Terrestrial Ecosystem Modeling

EC Elisabet Capon

This repository provides a Python implementation of ecosystem and climate models from the textbook, making it easier to understand, modify, and extend for research and education. Title: Climate Change and Terrestrial Ecosystem Modeling Author: Gordon Bonan (NCAR) DOI: 10.1017/9781107339217 Publisher: Cambridge University Press

climate model demo ecosystem model

Public

Created 6 months ago

Model-data deglacial ice sheet thinning comparison

EC Elisabet Capon

This tool extracts modeled ice thinning histories at any given site around Antarctica, spanning the last deglaciation (20 ka to present). If the specified site contains cosmogenic nuclide exposure-age measurements of ice surface deflation, the tool plots and calculates a model-data misfit score for each selected model. <https://zenodo.org/records/15284166>

Public

Created 6 months ago

Towards causal predictions of site-level treatment effects for applied ecology

RR Rok Roskar EC Elisabet Capon

A first application of meta-learner algorithms to ecology by comparing the performance of algorithms popular in other disciplines (S-, T-, and X-Learners) across a broad set of sampling and modelling conditions that are common to ecological observational studies. E. E. Jackson, T. Snäll, E. Gardner, J. M. Bullock & R. Spake (2025). Towards causal predictions of site-level treatment effects for applied ecology. EcoEvoRxiv. DOI: 10.32942/X2KK95

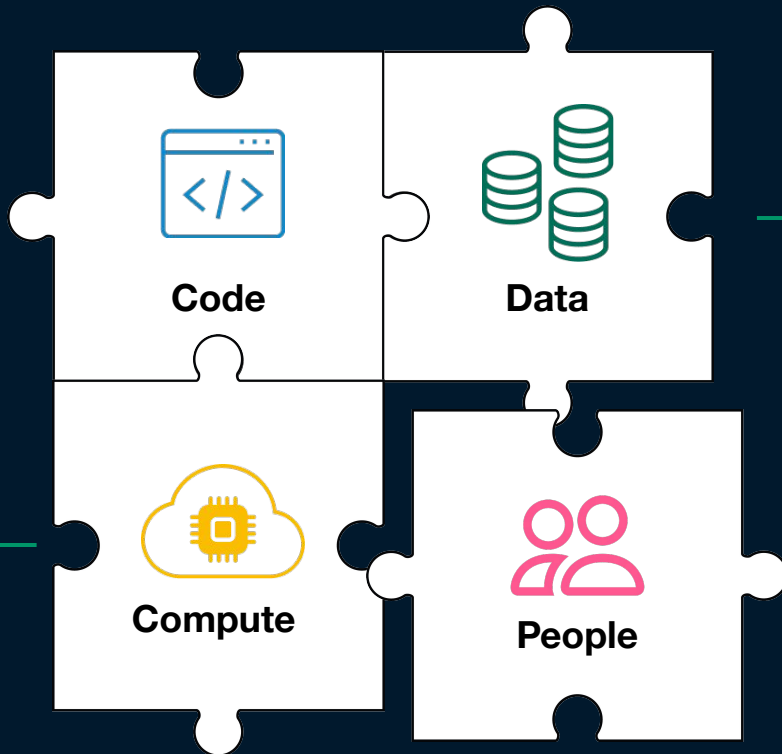
demo ecology meta-learner

Public

Created 6 months ago

What's Ahead

- Non-interactive jobs
- CLI support
- Connecting with **external compute** (runAI)
- Optimizing auto-scaling & session start-up times
- Deploying the RunAI scheduler



- Integrations with more data storage options
- Dataset publishing

- Project publishing



Get Started Today



Get Started

<https://renkulab.io/>

<https://github.com/SwissDataScienceCenter/renku>



Documentation

[Community Portal](#)

[Events](#)

[Roadmap](#)

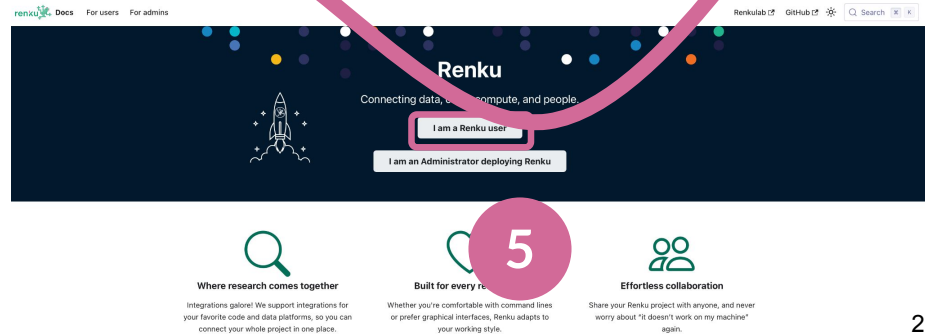
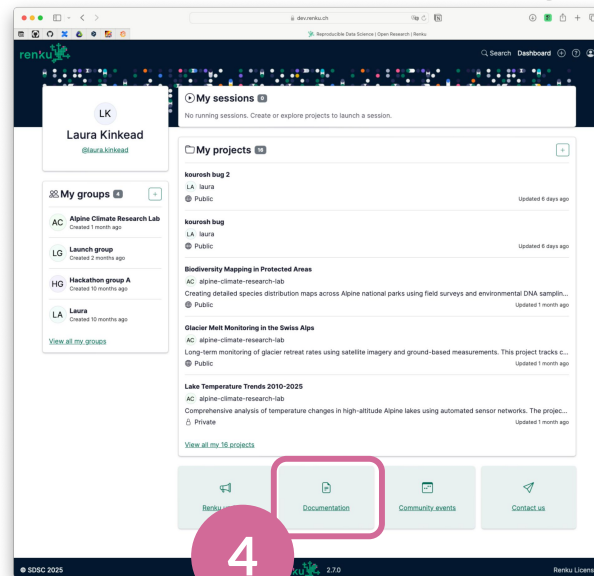
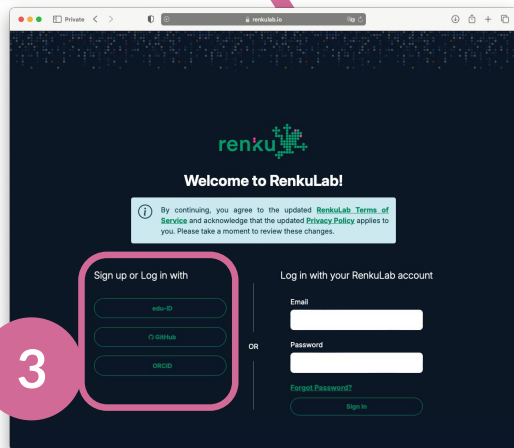
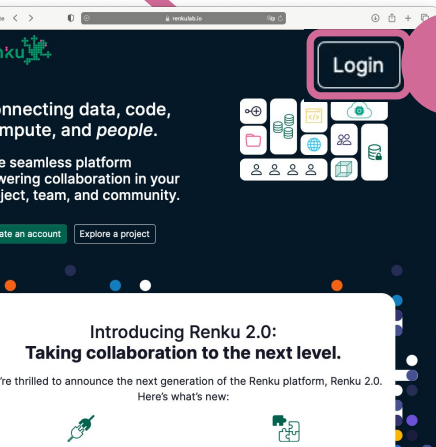


Get in Touch

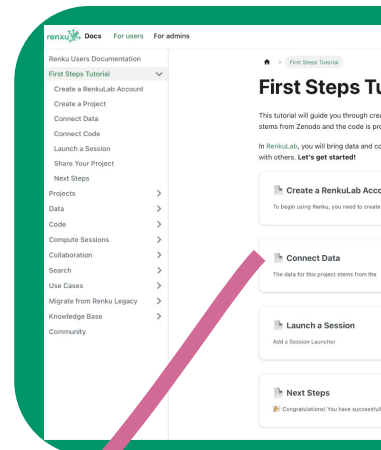
hello@renku.io

Subscribe to our
[newsletter](#)

1 <https://renkulab.io>



Getting Started Tutorial





Renku Use Cases

AiiDA - Automated Interactive Infrastructure and Database for Computational Science



From technical local setup to one-click data exploration:
Renku simplifies access to computational data on the Materials Cloud Archive (MCA).

THE CHALLENGE

Accessing **valuable research data** on the (MCA) data repository required complex **local setup**, which limited its use by the **broader community**.

THE SOLUTION

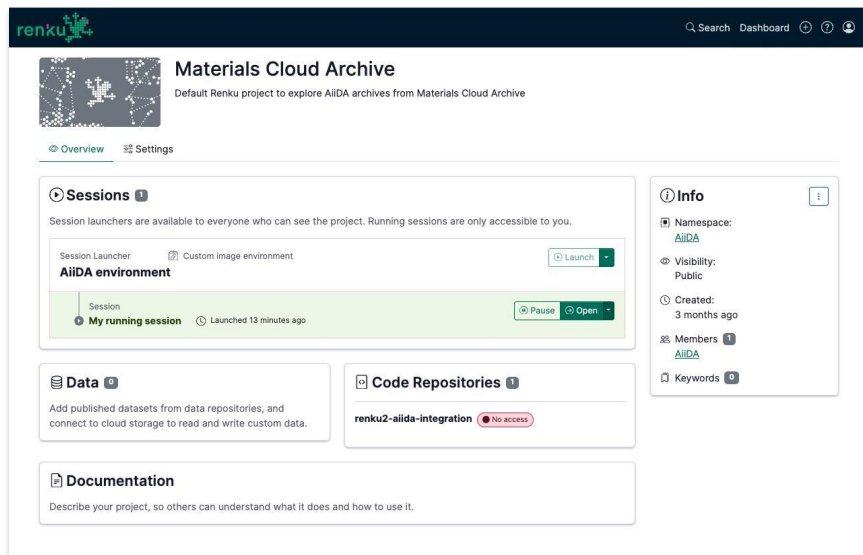
With Renku integration, MCA now enables **one-click access** to pre-loaded data via RenkuLab's interactive ready-to-use compute sessions.

THE TAKEAWAY

Integrating data repositories with compute platforms makes **datasets easier to access and reuse**, enabling more researchers to **engage and collaborate**.

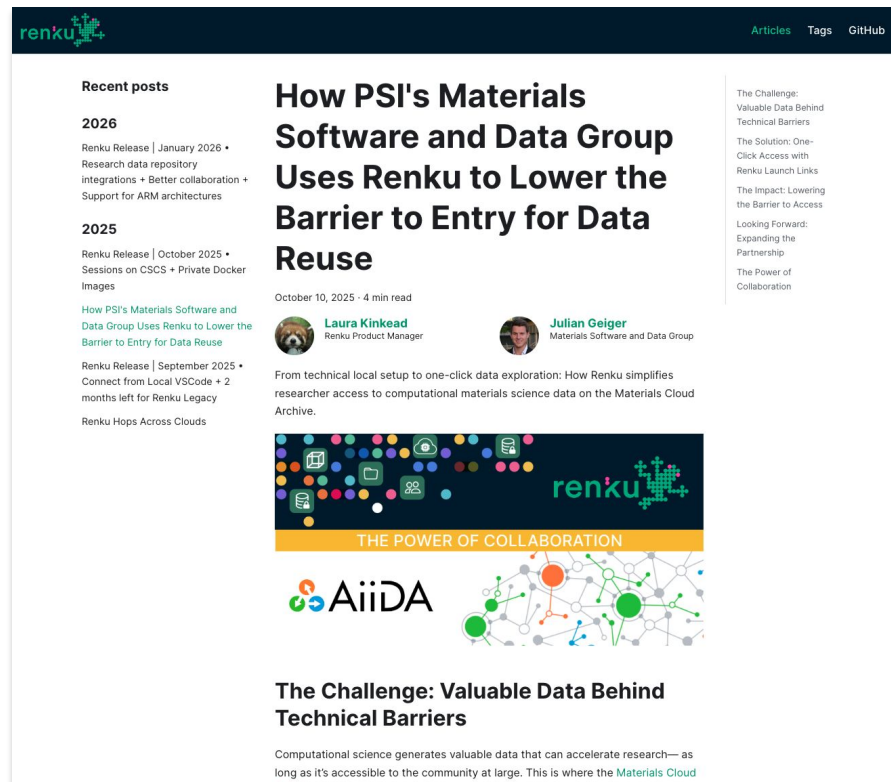
AiiDA - Automated Interactive Infrastructure and Database for Computational Science

Example project



The screenshot shows the Renku web interface for a project named "Materials Cloud Archive". The header includes the Renku logo and navigation links for Search, Dashboard, and user settings. The main content area is divided into several sections: "Overview" and "Settings" tabs, a "Sessions" section with a "My running session" card, a "Data" section with a description, a "Code Repositories" section showing "renku2-aiida-integration", and a "Documentation" section. An "Info" sidebar on the right provides details about the namespace (AiiDA), visibility (Public), creation date (3 months ago), and members.

Blog post



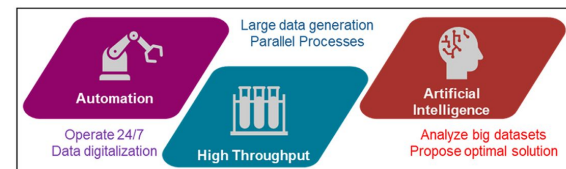
The screenshot shows a Renku blog post. The header includes the Renku logo and navigation links for Articles, Tags, and GitHub. The main content area features a "Recent posts" section with two entries: "2026" and "2025". The "2025" entry is the featured post, titled "How PSI's Materials Software and Data Group Uses Renku to Lower the Barrier to Entry for Data Reuse". It includes a date (October 10, 2025), a duration (4 min read), and two authors: Laura Kinkead (Renku Product Manager) and Julian Geiger (Materials Software and Data Group). The post text describes the challenge of valuable data behind technical barriers and the solution of one-click access with Renku Launch Links. The post is accompanied by a banner image with the Renku logo and the text "THE POWER OF COLLABORATION". Below the banner are the AiiDA logo and a network diagram. The post concludes with the title "The Challenge: Valuable Data Behind Technical Barriers" and a paragraph about computational science generating valuable data.

ETHZ SwissCAT+

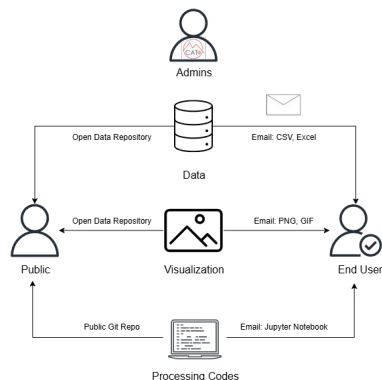
As one of the projects within the first SDSC national call, **ETHZ SwissCAT+** teamed up with the **SDSC** to utilize their **Renku platform** to unite data, code and compute in their **OpenCatData** project.

ETH zürich

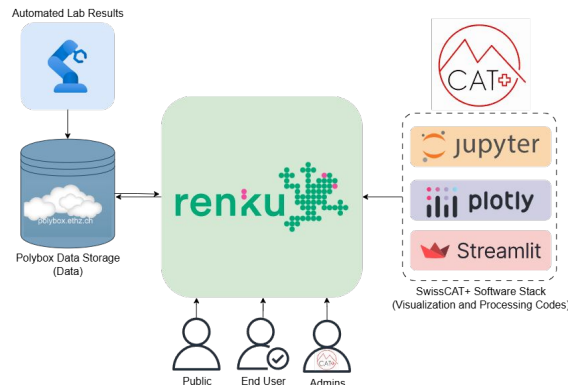
EPFL



Disconnected Sharing of Data, Visualisation and Code



Unified Sharing of Data, Visualization and Code Through Renku

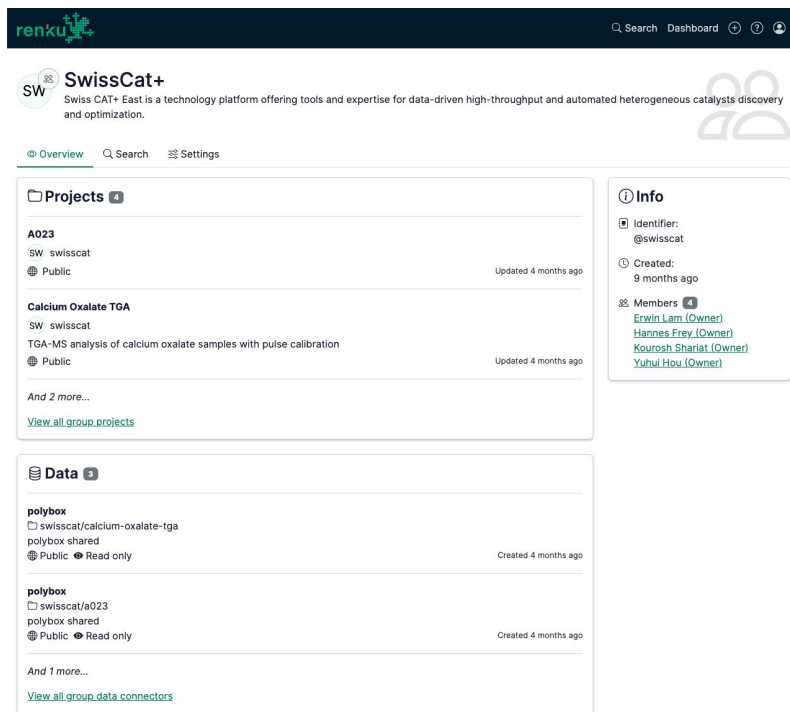


Renku Platform as Solution - An ideal platform to overcome this challenge where it allows to connect:

- Data created from the instruments at ETHZ SwissCAT+,
- Data processing tools developed at ETHZ SwissCAT+
- Compute resources to deploy the data processing tools

ETHZ SwissCAT+

Group page



The screenshot shows the Renku platform interface for the ETHZ SwissCAT+ group. At the top, there's a dark blue header with the Renku logo and navigation links: Search, Dashboard, and user icons. Below the header, the group name "SwissCAT+" is displayed with a description: "Swiss CAT+ East is a technology platform offering tools and expertise for data-driven high-throughput and automated heterogeneous catalysts discovery and optimization." To the right of the description is a stylized icon of two people. Below this, there are tabs for "Overview", "Search", and "Settings". The main content area is divided into two columns. The left column has a "Projects" section with two project entries: "A023" (SW swisscat, Public, Updated 4 months ago) and "Calcium Oxalate TGA" (SW swisscat, TGA-MS analysis of calcium oxalate samples with pulse calibration, Public, Updated 4 months ago). Below these is a link "View all group projects". The right column has an "Info" section with details: Identifier (@swisscat), Created (9 months ago), and Members (4: Erwin Lam (Owner), Hannes Frey (Owner), Kourosh Shariat (Owner), Yuhui Hou (Owner)). Below the info section is a "Data" section with two entries: "polybox" (swisscat/calcium-oxalate-tga, polybox shared, Public, Read only, Created 4 months ago) and "polybox" (swisscat/a023, polybox shared, Public, Read only, Created 4 months ago). At the bottom of the data section is a link "View all group data connectors".

Blog post



As one of the projects within the first SDSC national call, [ETHZ SwissCAT+](#) teamed up with the SDSC to utilize their [Renku platform](#) to unite data, code and compute in their [OpenCatData](#) project. In this blog post we describe how ETHZ SwissCAT+ fully utilizes the features that Renku offers to augment how data can be effectively shared across different parties.

ETHZ SwissCAT+'s Challenge

ETHZ SwissCAT+ is a technology platform that provides services to researchers in the field of catalysis. At ETHZ SwissCAT+, traditional catalysis research is complemented with high-throughput experimentation, automation and artificial intelligence thereby generating large amounts of data. With a diverse user base from various academic institutions and companies nationally and internationally, ETHZ SwissCAT+ faces the challenge to effectively communicate and share the obtained experimental data with their user base.

