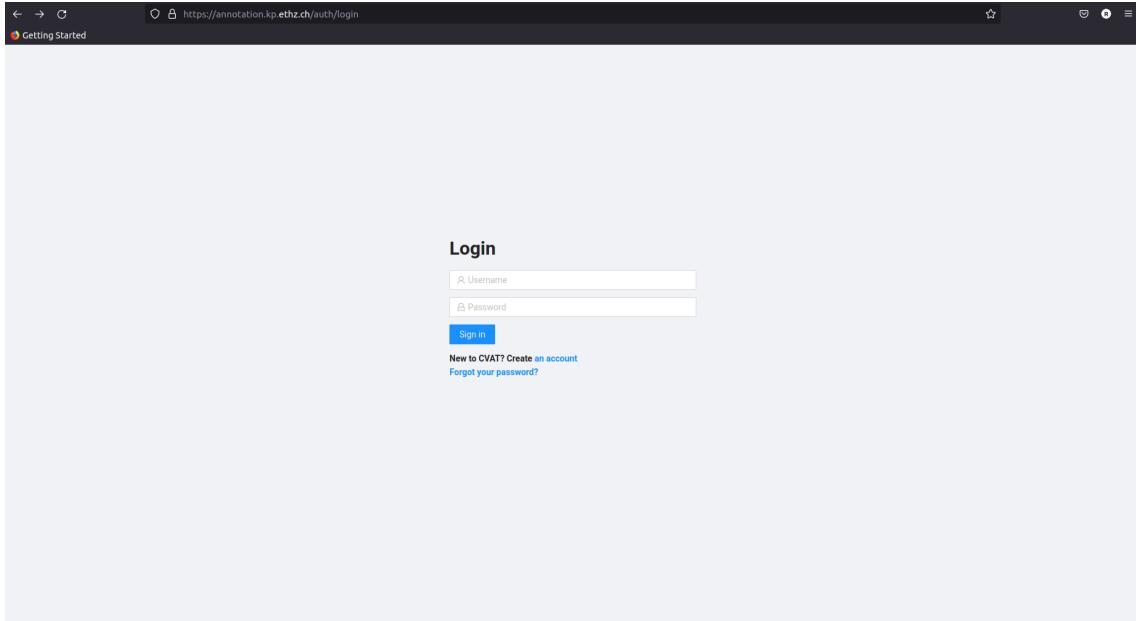


CVAT Guide

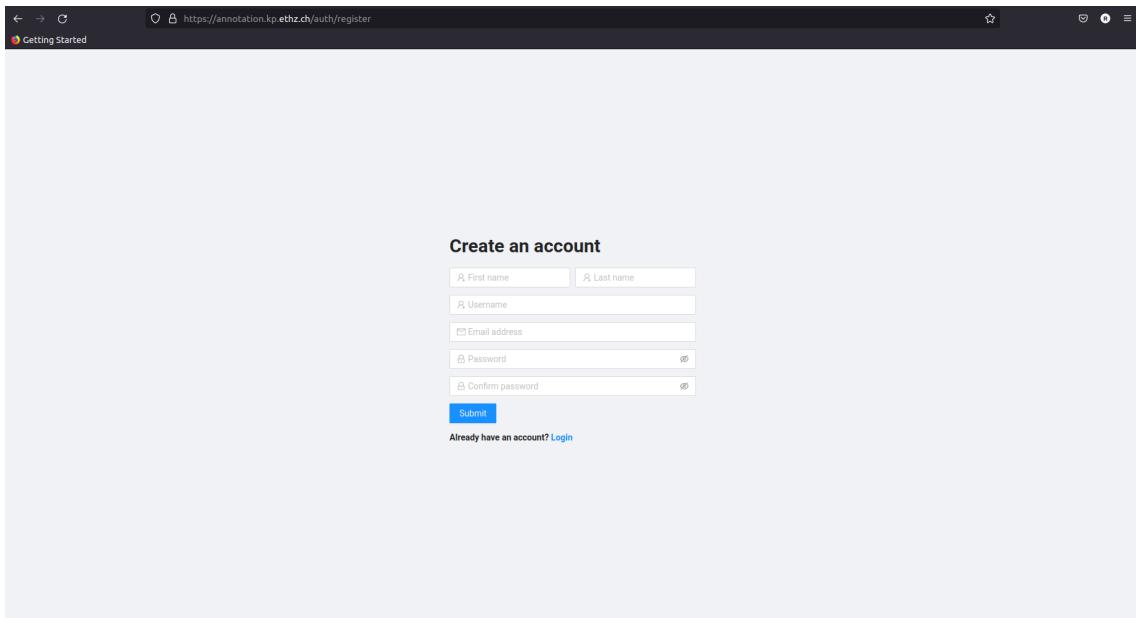
Registration

- Open <https://annotation.kp.ethz.ch> preferably in Firefox or Chrome



A screenshot of a web browser window showing the CVAT login page. The URL in the address bar is <https://annotation.kp.ethz.ch/auth/login>. The page has a light gray background with a central "Login" form. The form contains two input fields: "Username" and "Password", both with placeholder text "Username" and "Password". Below the fields is a blue "Sign in" button. At the bottom of the form, there are two links: "New to CVAT? Create an account" and "Forgot your password?".

- Click onto create an account

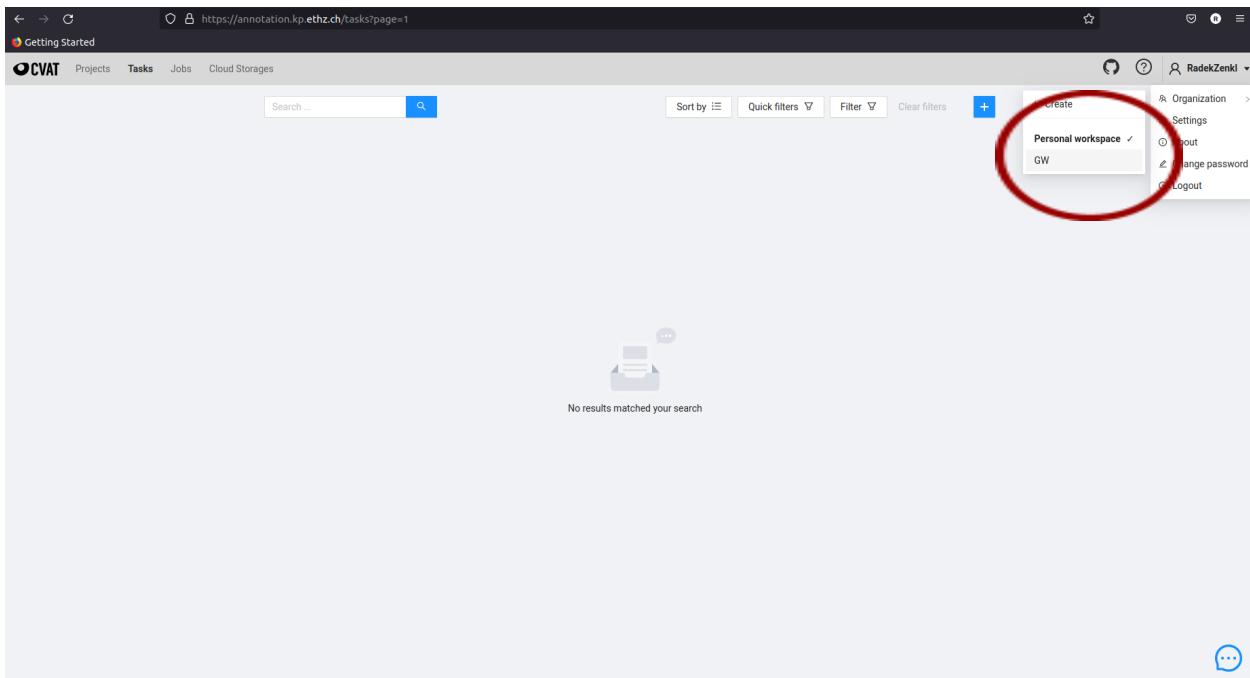


A screenshot of a web browser window showing the CVAT "Create an account" page. The URL in the address bar is <https://annotation.kp.ethz.ch/auth/register>. The page has a light gray background with a central "Create an account" form. The form contains six input fields: "First name" and "Last name" (both with placeholder text "First name" and "Last name"), "Username" (placeholder text "Username"), "Email address" (placeholder text "Email address"), "Password" (placeholder text "Password"), and "Confirm password" (placeholder text "Confirm password"). Below the fields is a blue "Submit" button. At the bottom of the form, there is a link: "Already have an account? [Login](#)".

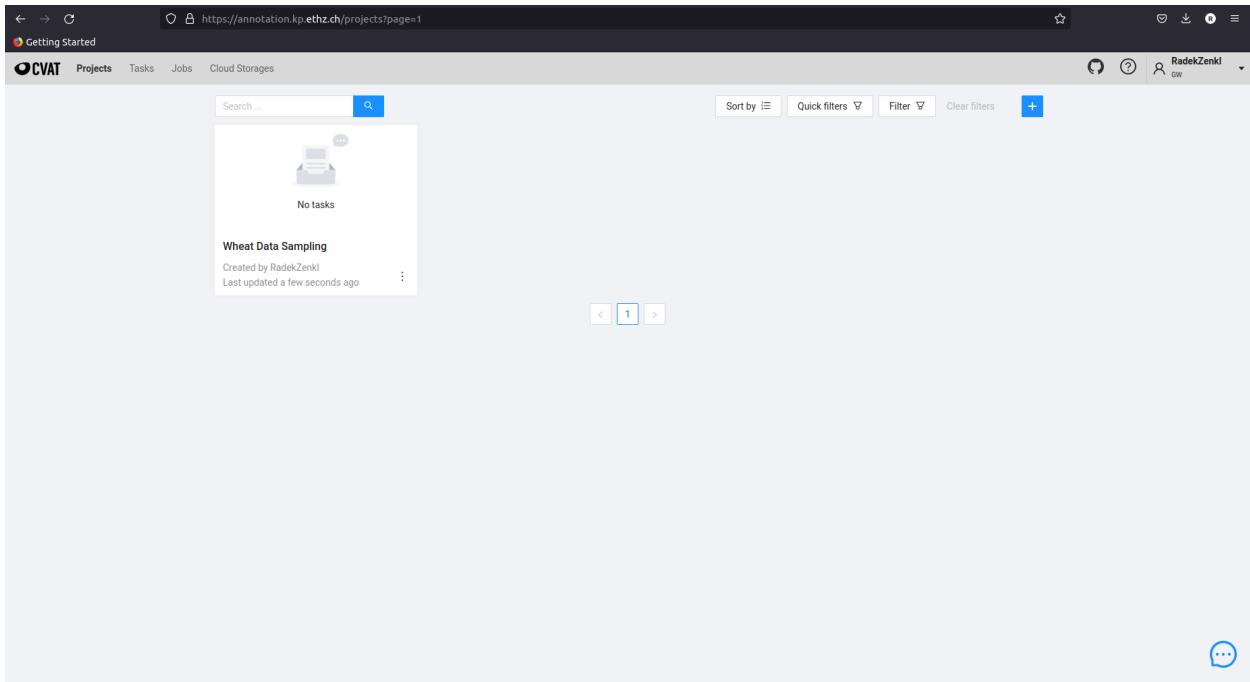
- Fill the details
- Log in

Testing CVAT

- After logging in you can experiment around, but note you are working in your personal space where data is not organized and can be generally seen by anyone who is logged in.
- In order to access the collaborative project, reach out to radek.zenkl@usys.ethz.ch so that you are added into the “GW” (Global Wheat) organization.
- After you have been added, change the workspace to “GW”



And you should see the “Wheat Data Sampling” project.

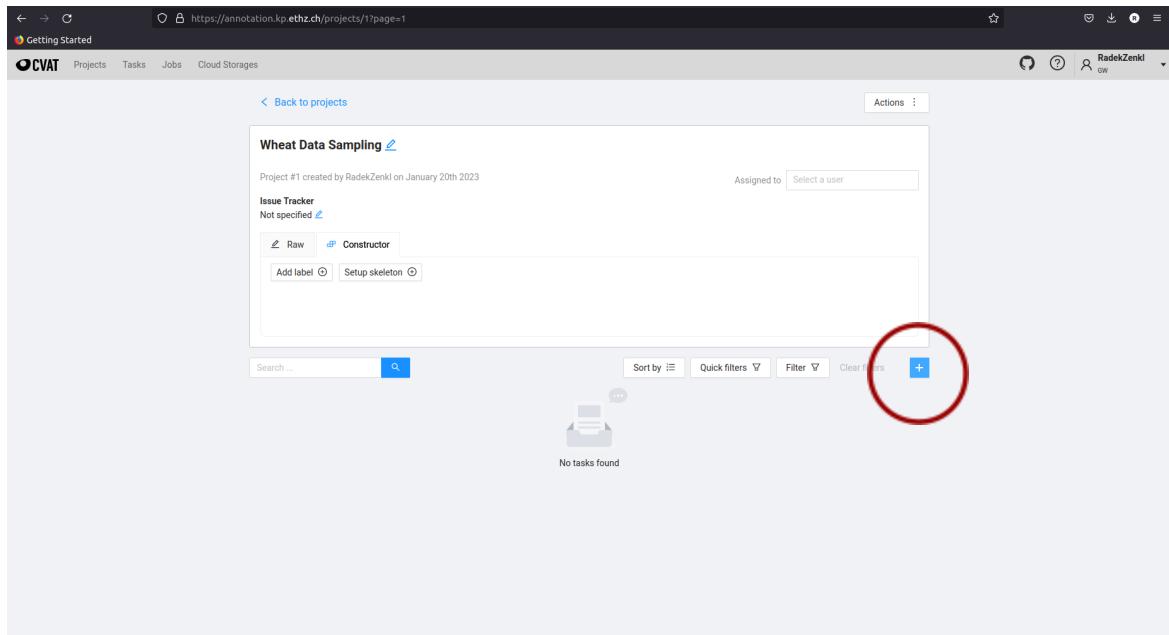


Open it by clicking on it.

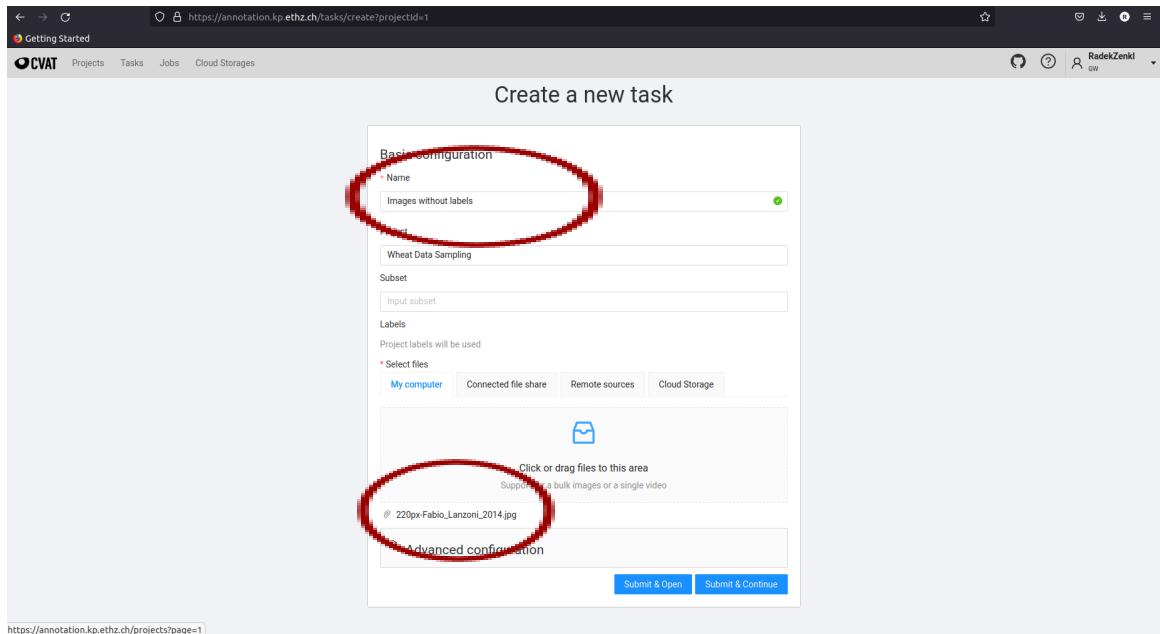
- Then you have two options to fill it with data
 - Upload images without annotations
 - Upload datasets in standard formats

Uploading Images without Annotations

- For the first Option you need to create a task. Click on the blue “+” in the lower right corner.



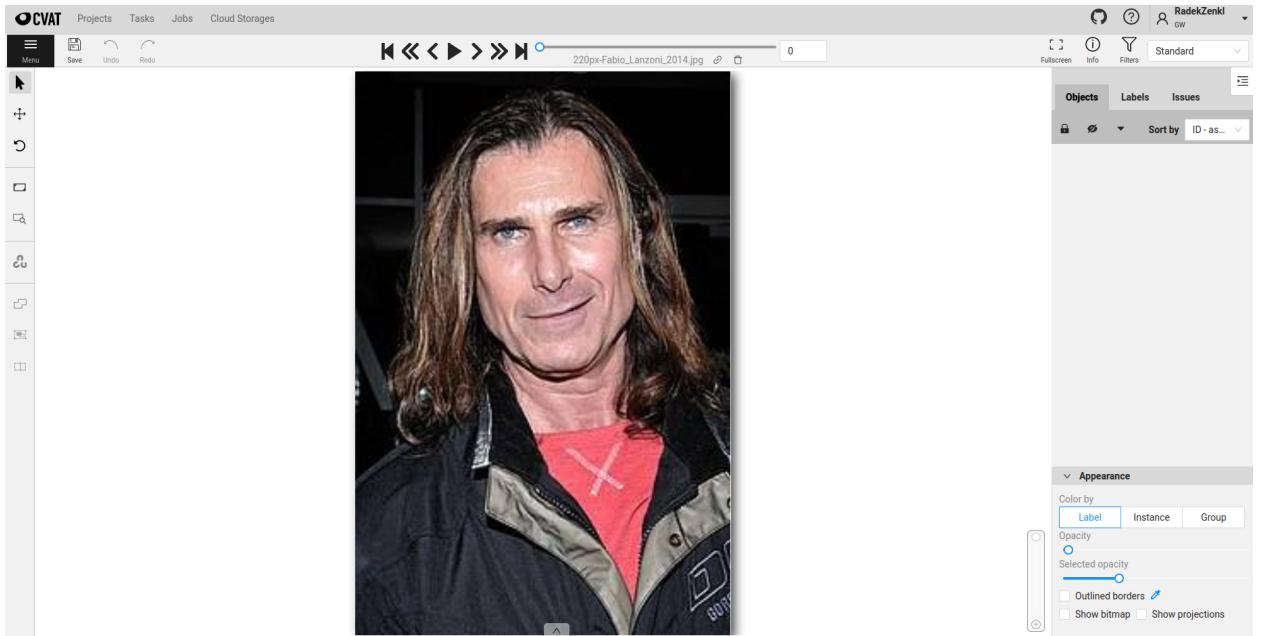
- Give the task a name and drag and drop the image files that you want to upload.



- Finish by clicking “Submit & Open”.

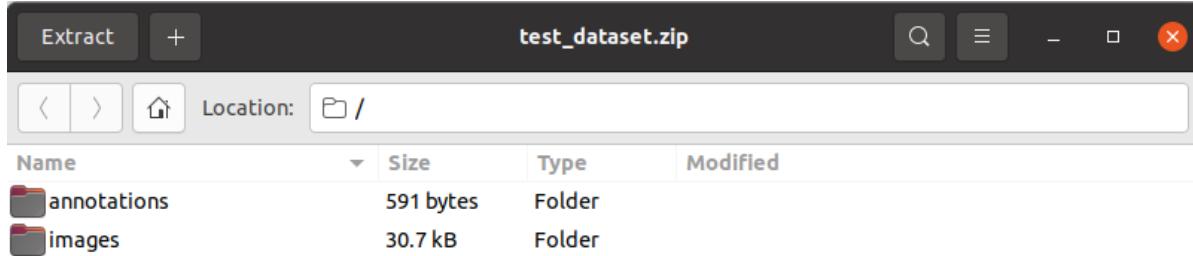
The screenshot shows the CVAT web interface at the URL <https://annotation.kp.ethz.ch/tasks/5>. The page title is "Getting Started". The main content area displays a task titled "Images without labels". It includes a preview image of a man with long hair, task details (Task #5 Created by RadekZenkl on January 20th 2023), and a table with metrics (Overlap size: 0, Segment size: 1, Image quality: 70). Below this is a "Jobs" table with one entry, "Job #5", which is circled in red. The table columns include Job, Frames, Stage, State, Started on, Duration, and Assignee.

- If you want to access the images, click on the blue job and you can start annotating (more details on annotation later).



Uploading Datasets

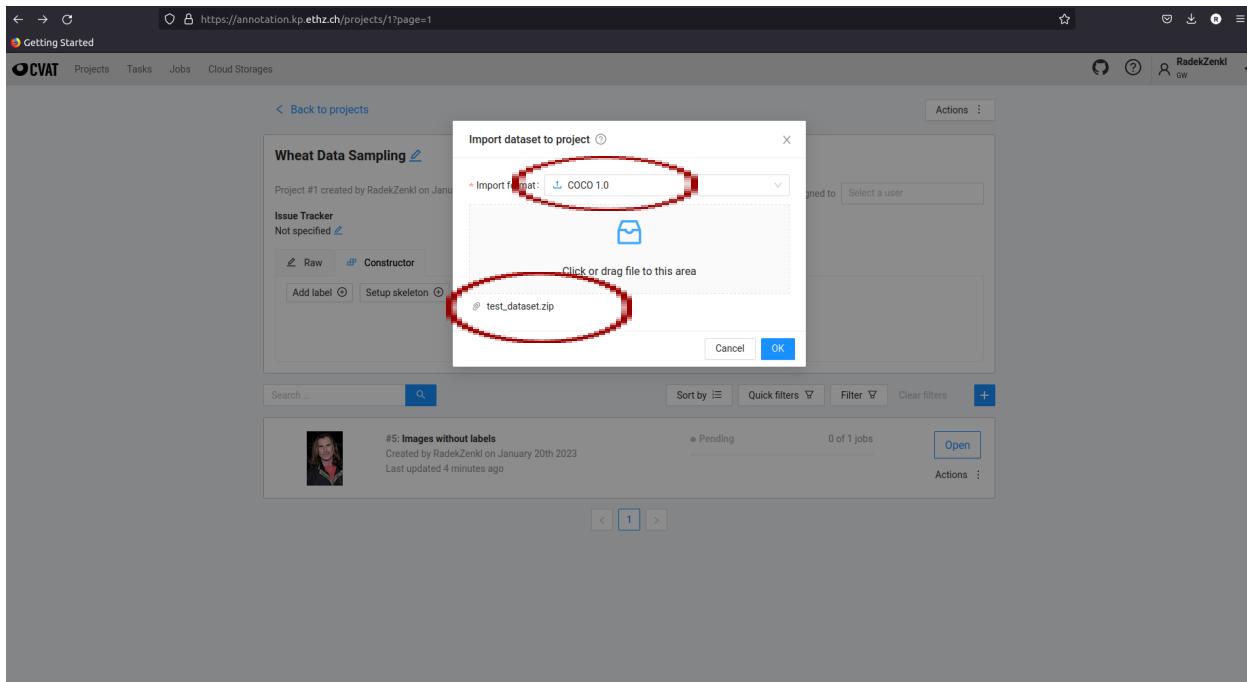
If you have a set of images with labels you can add both directly in one step. Your data has to be in a .zip format with corresponding naming and folder structure within. For example when we want to upload data in COCO format, we need to have the “annotations” and “images” folders within our .zip file.



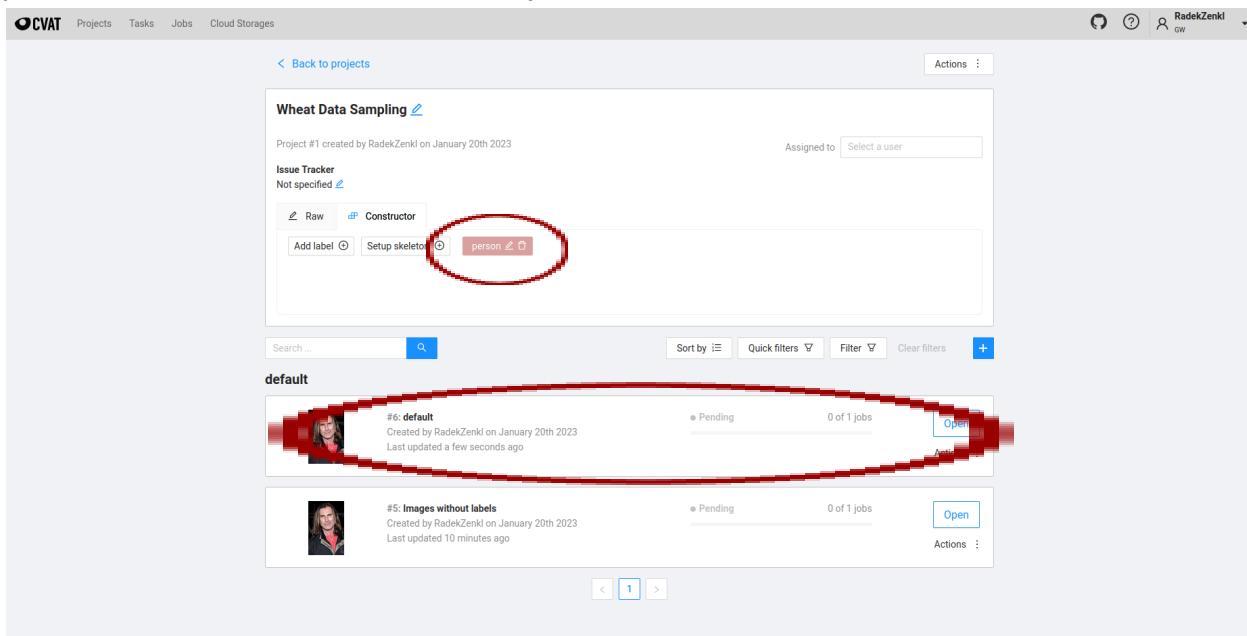
If the formatting is correct, we can just upload the data by clicking on “Actions” → “Import dataset”

A screenshot of the CVAT web interface. The URL is https://annotation.kp.ethz.ch/projects/1?page=1. The page shows a project titled "Wheat Data Sampling". In the top right corner, there is a "Actions" dropdown menu with several options: "Export dataset", "Import dataset" (which is circled in red), "Backup Project", and "Delete". Below the project title, there is some project metadata: "Project #1 created by RadekZenkl on January 20th 2023", "Issue Tracker Not specified", and buttons for "Raw" and "Constructor". Further down, there is a "Search ..." field and a table with one row. The table row contains a thumbnail image of a person, the text "#5: Images without labels", "Created by RadekZenkl on January 20th 2023", "Last updated 4 minutes ago", a status indicator "Pending", "0 of 1 jobs", an "Open" button, and an "Actions" dropdown menu. At the bottom of the page, there are navigation buttons for page 1 of 1.

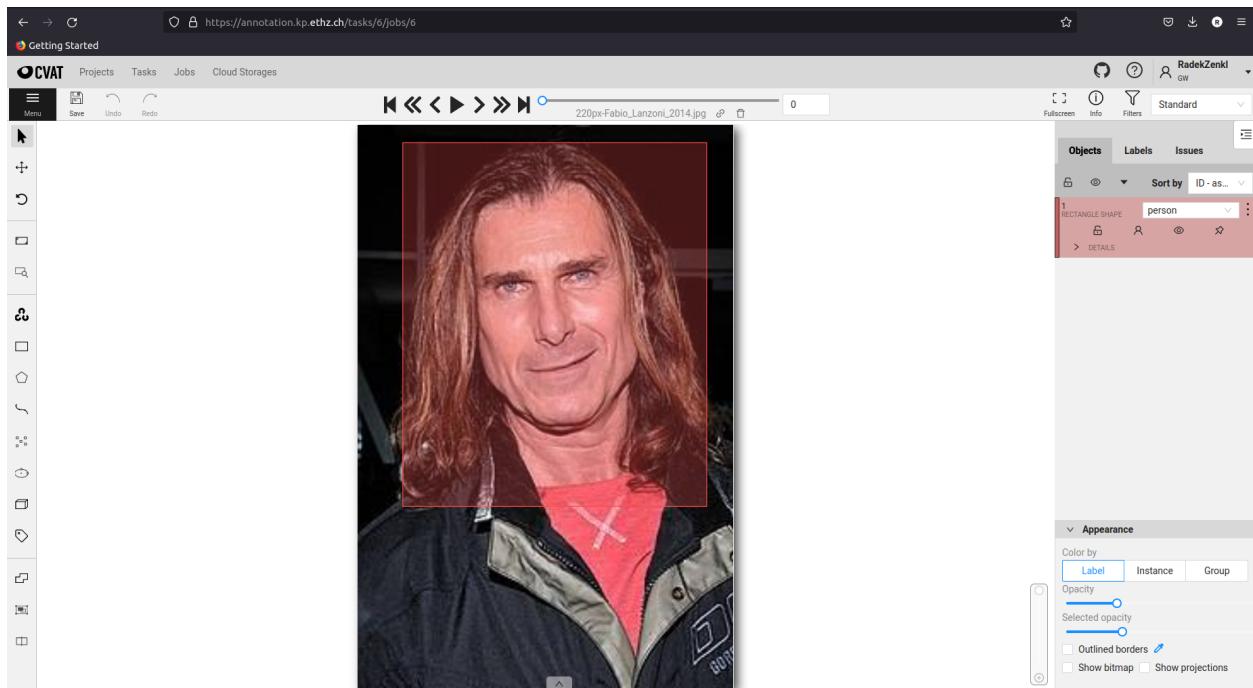
Then you can select the corresponding format and the appropriate .zip file.



After the upload is finished, notice two things: a new task has been created and the labels from your dataset have been added to the project labels.

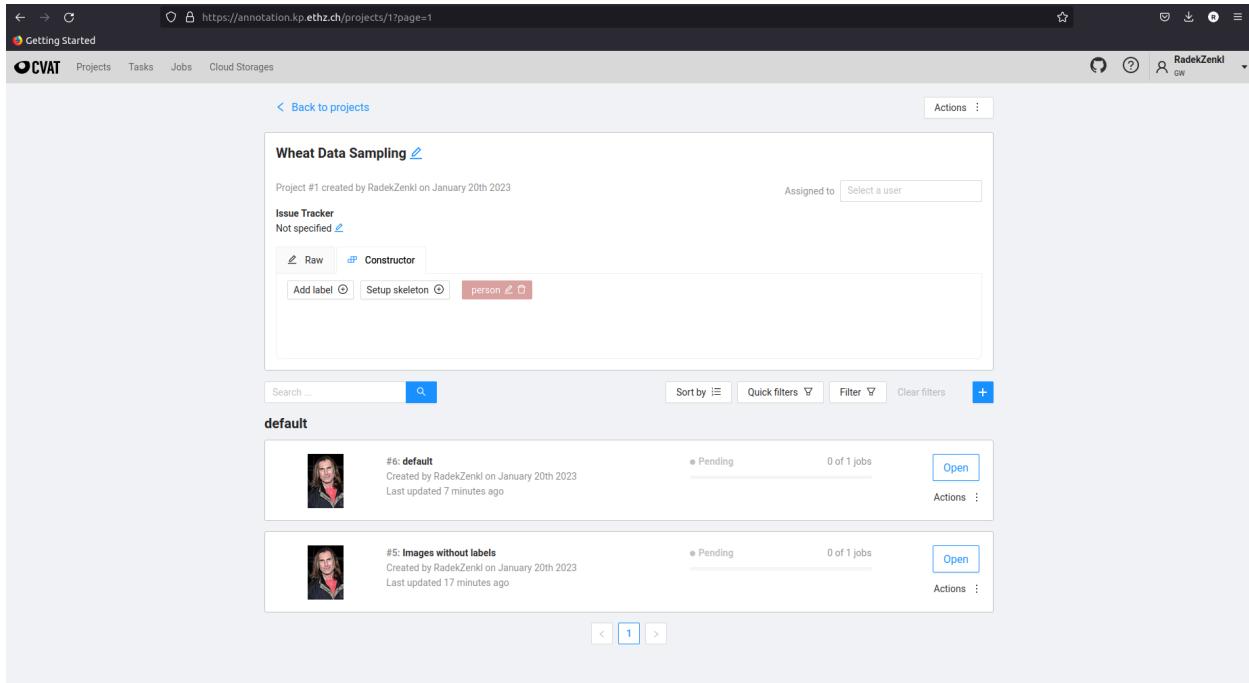


Please go check if the labels have been imported correctly by opening the newly created task and the corresponding job.



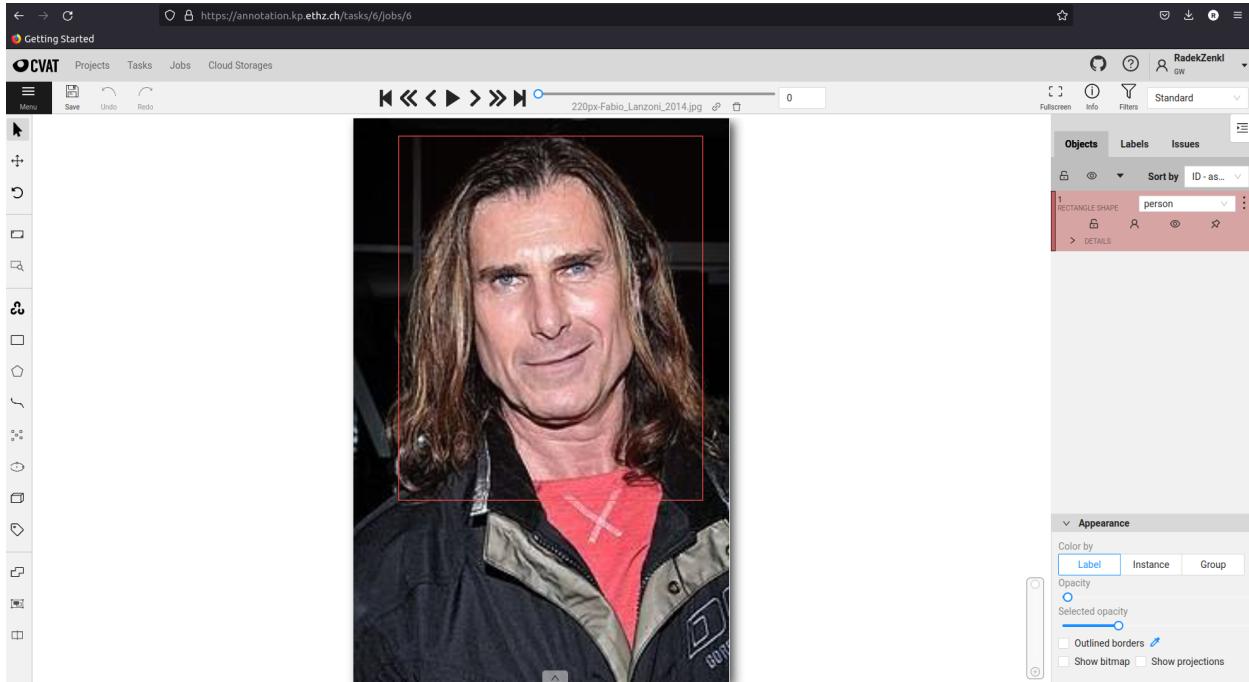
Adding Image Tags

When you want to add an image tag, first make sure that the tag label already exists within this project. For example if we want to add a “bad_quality” tag we can see that it doesn’t exist yet.



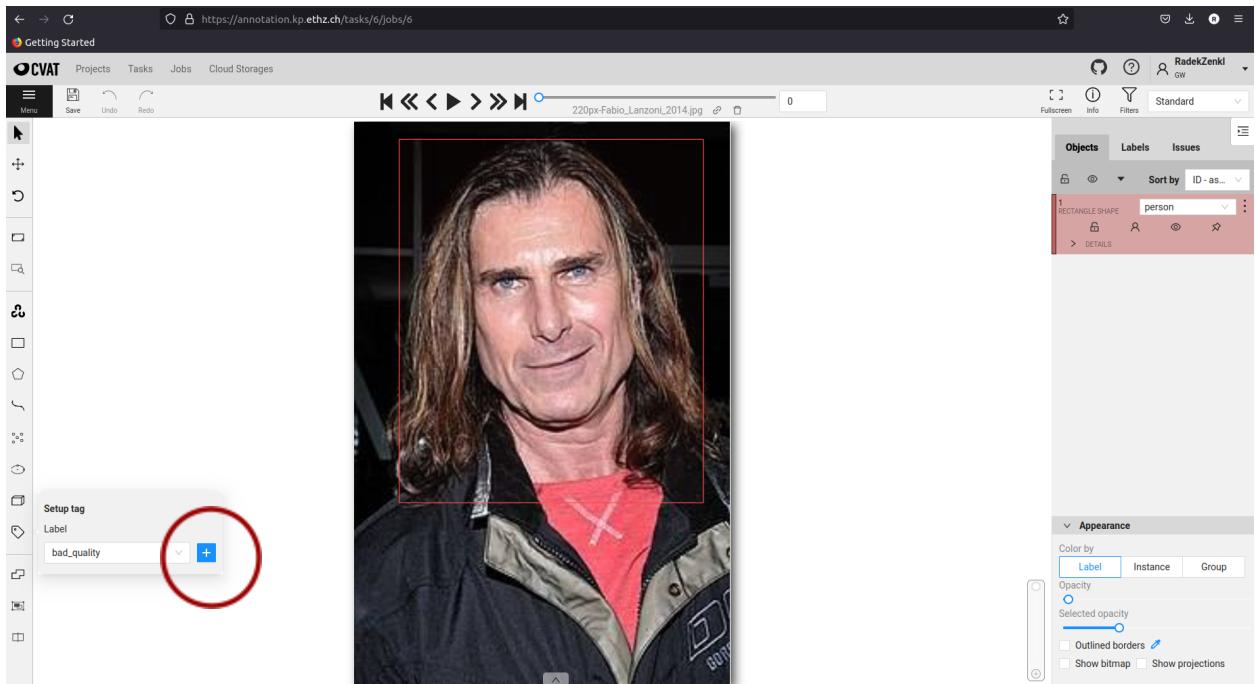
The screenshot shows the OCVAT interface for the 'Wheat Data Sampling' project. The 'Labels' tab is active, displaying a list of labels. The 'default' label is shown with a thumbnail of a person's face, a creation date of January 20th 2023, and a status of 'Pending' with 0 of 1 jobs. Below it is another label, '#5: Images without labels', also pending with 0 of 1 jobs. At the top of the labels list, there is a red box highlighting the 'Add label' button, which is currently inactive (grayed out). Other buttons visible include 'Constructor', 'Setup skeleton', and a search bar.

So let’s create it. Click on “Add label” and enter for example “bad_quality”. You can also add attributes to a label if you want to. After clicking on “Continue” the label is created and you can start assigning it to the images. Open the corresponding job where you want to assign the tag.

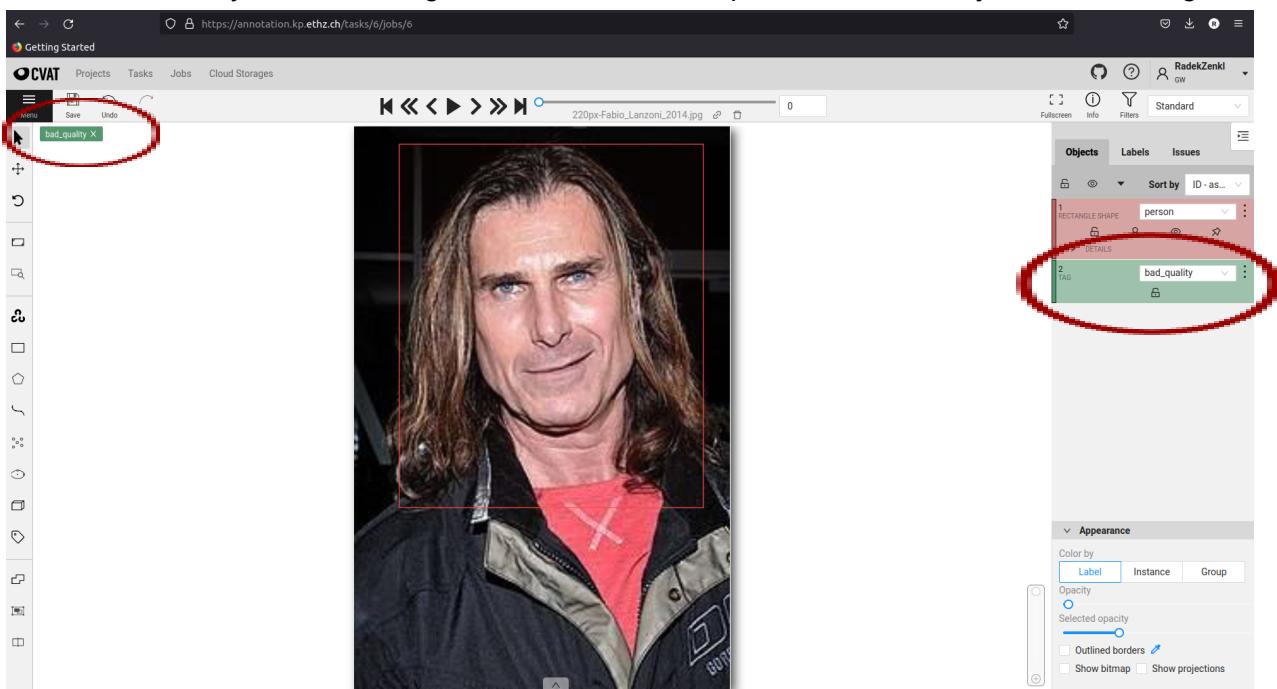


The screenshot shows the OCVAT annotation interface for a task labeled '220px-Fabio_Lanzoni_2014.jpg'. The 'Labels' tab is selected in the top navigation bar. On the left, the 'Labels' tab is highlighted. In the center, a portrait of a man with long hair is displayed with a red rectangle drawn around his head, indicating a selected object. On the right, the 'Labels' panel shows a list with one item: 'RECTANGLE SHAPE' under the 'person' label. The 'Appearance' panel is open on the far right, showing settings for 'Color by' (set to 'Label'), 'Opacity' (with a slider), and 'Border' options ('Selected opacity' is checked). There are also checkboxes for 'Outline borders' and 'Show bitmap'.

Go on to the tag symbol on the left side and add the tag by clicking on the blue “+”.



When successfully added, the tag can be seen on the top left and in the Object list on the right.



Global Wheat

Now that you have a basic knowledge of CVAT usage please add representative images and create corresponding labels to present your use case. Once everybody fills in their own examples we can discuss how to combine the results.

If you are interested in annotating points, polygons or bounding boxes please refer to the official CVAT guide: <https://opencv.github.io/cvat/docs/manual/>