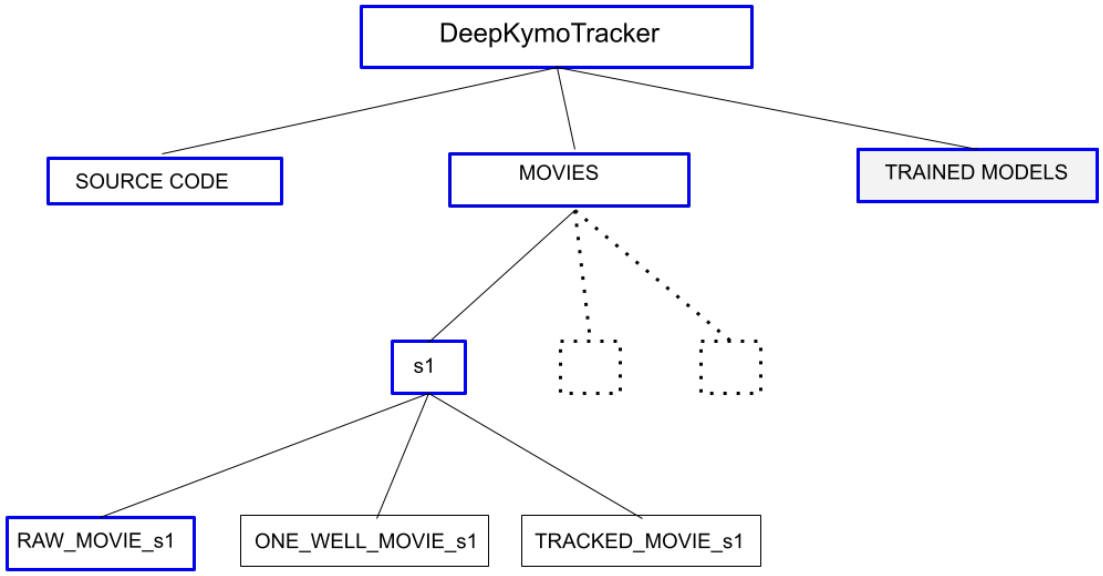
3. How to set up DeepKymoTracker folder

(User guide)

Here is the folder tree structure for DeepKymoTracker you are supposed to have in place before starting execution. The example cell movie name for this tutorial is s1. The folders you are expected to get by the end of this tutorial, are highlighted in blue (the folders ONE_CELL_MOVIE_s1 and TRACKED_MOVIE_s1 will appear automatically later , you do not have to worry about them; they are given in the diagram just to give you the sense of the whole folder tree structure after executing DeepKymoTracker).



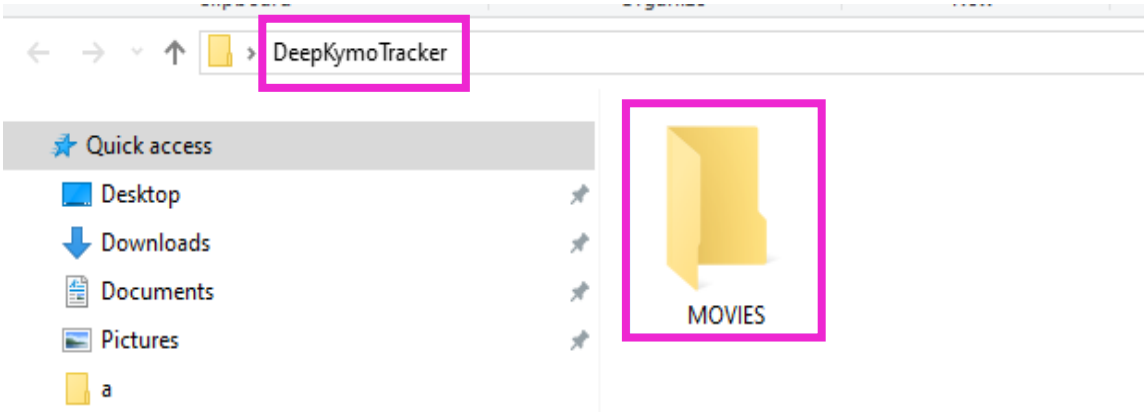
To build this folder structure, you need to conduct 4 steps:

1. Create DeepKymoTracker folder.
2. Download source code from GitHub.
3. Download models from Zenodo.
4. Create an input cell movie folder.

Let us go through each step in detail.

1. **Create DeepKymoTracker folder**.

Create empty folder named DeepKymoTracker and then, another empty subfolder inside it, with the name MOVIES. That is how the result looks like:



The MOVIES folder will stay empty for a while; we will come back to it later.

2. Download source code from GitHub.

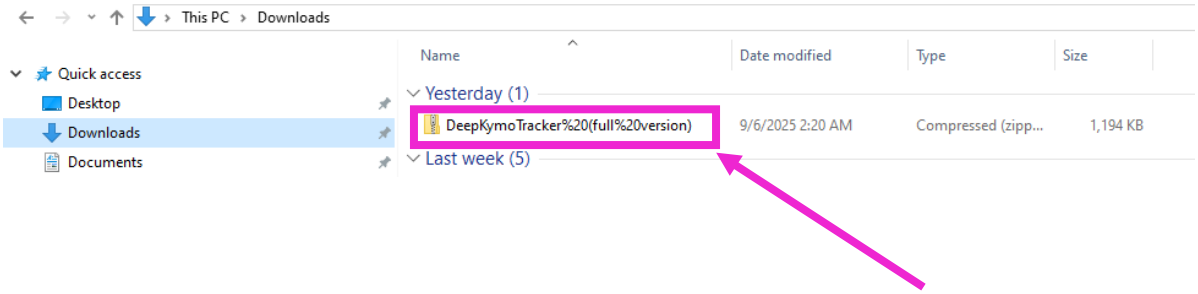
Copy URL below:

https://github.com/khelina/T-cell-lineages-tracking/tree/main/DeepKymoTracker%20(full%20version)

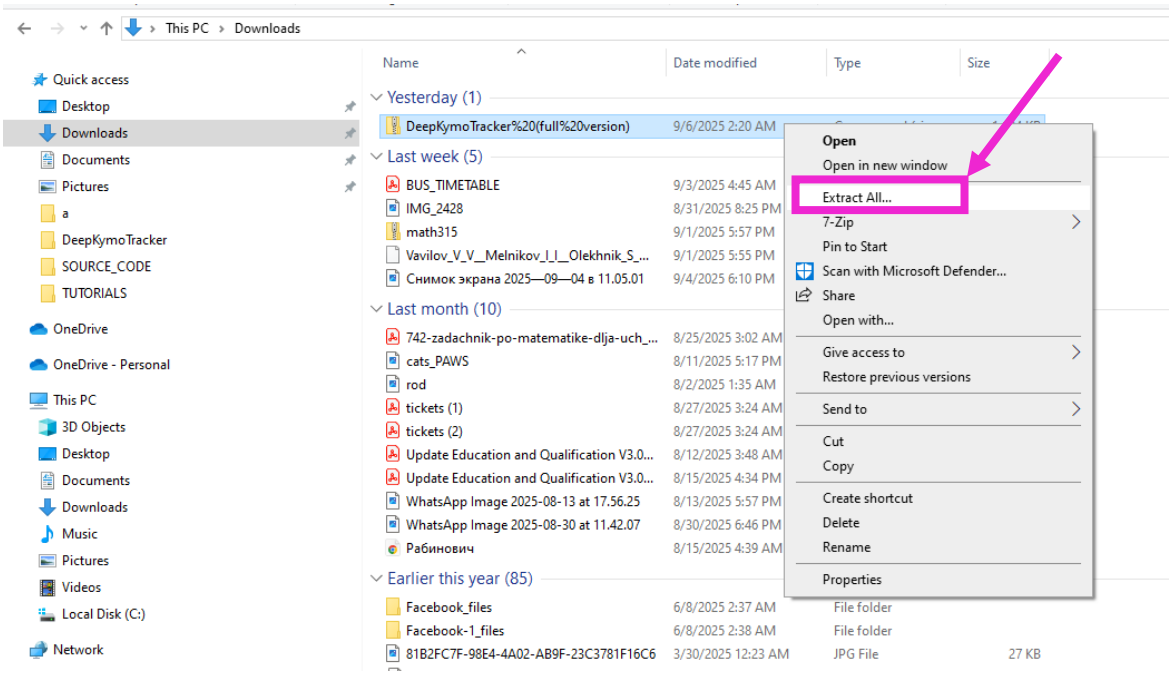
then go **DownGit** , enter the URL and hit Download button:

Go to **DownGit** → Enter Your URL → Download

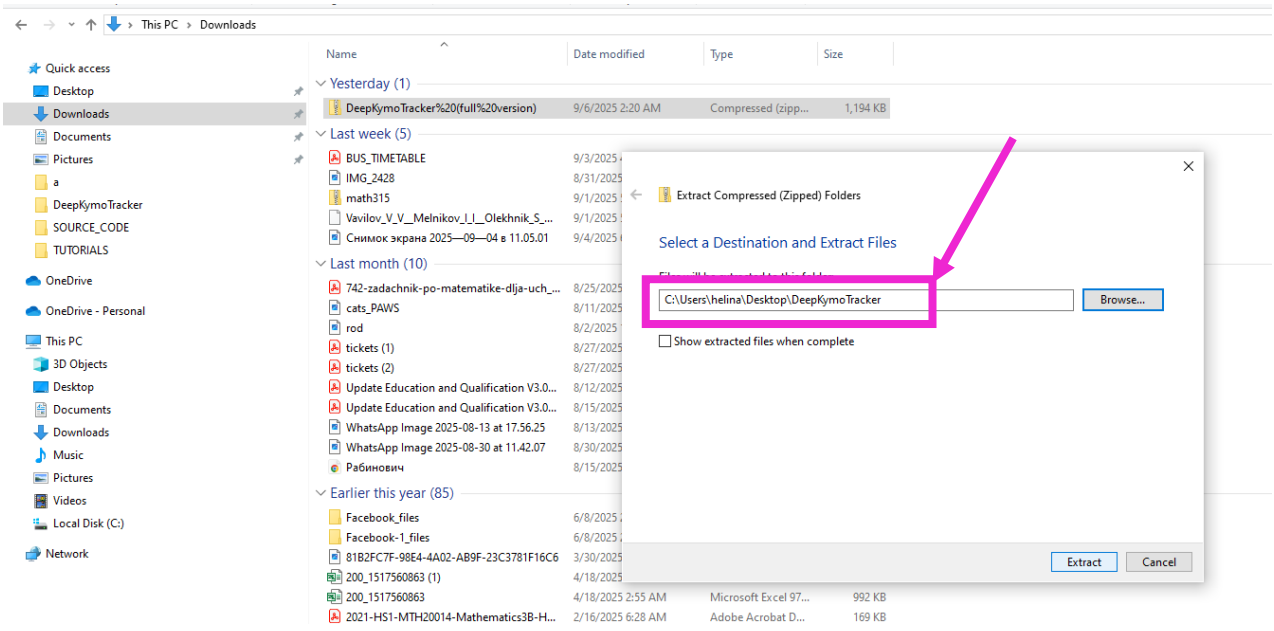
The zip file with the name DeepKymoTracker%20(full%20version).zip will appear in your Downloads folder:



To unzip it, right-click on it and choose Extract All.. from the dropdown menu:



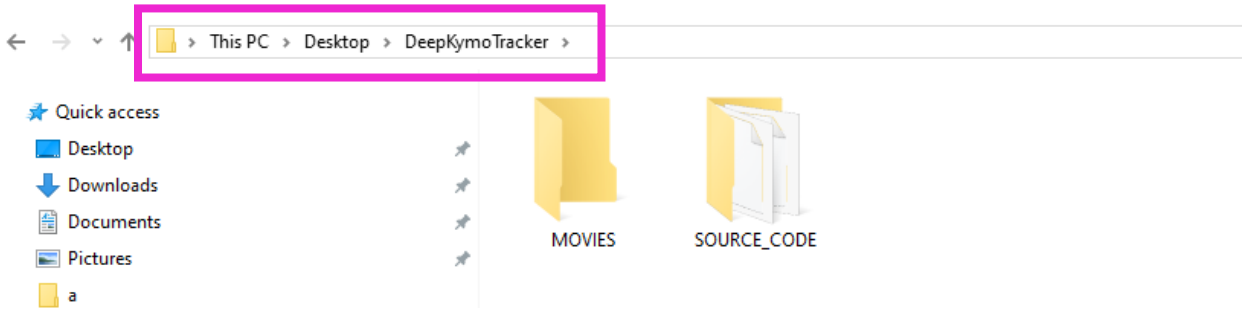
Using Browse button, choose the directory to your DeepKymoTracker folder you just created and hit Extract:



The folder will land in your DeepKymoTracker folder. Change the folder name to become SOURCE CODE:

DeepKymoTracker%20(full%20version) → SOURCE CODE

Check the result:

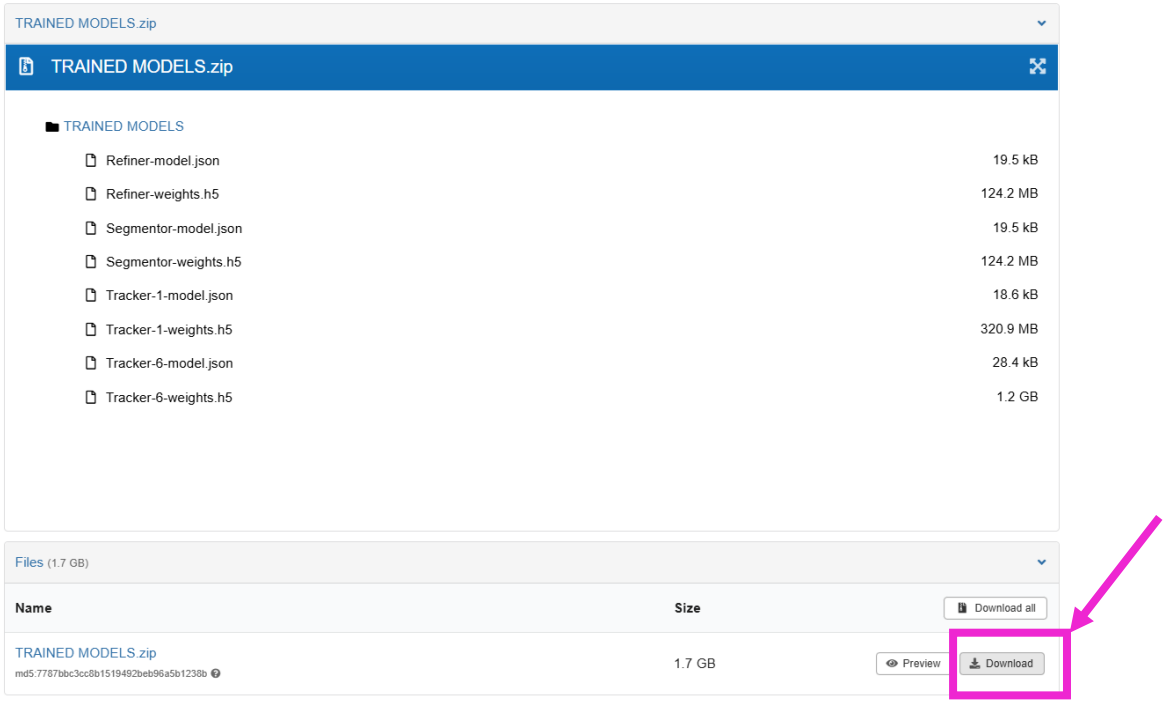


3. Download models from Zenodo.

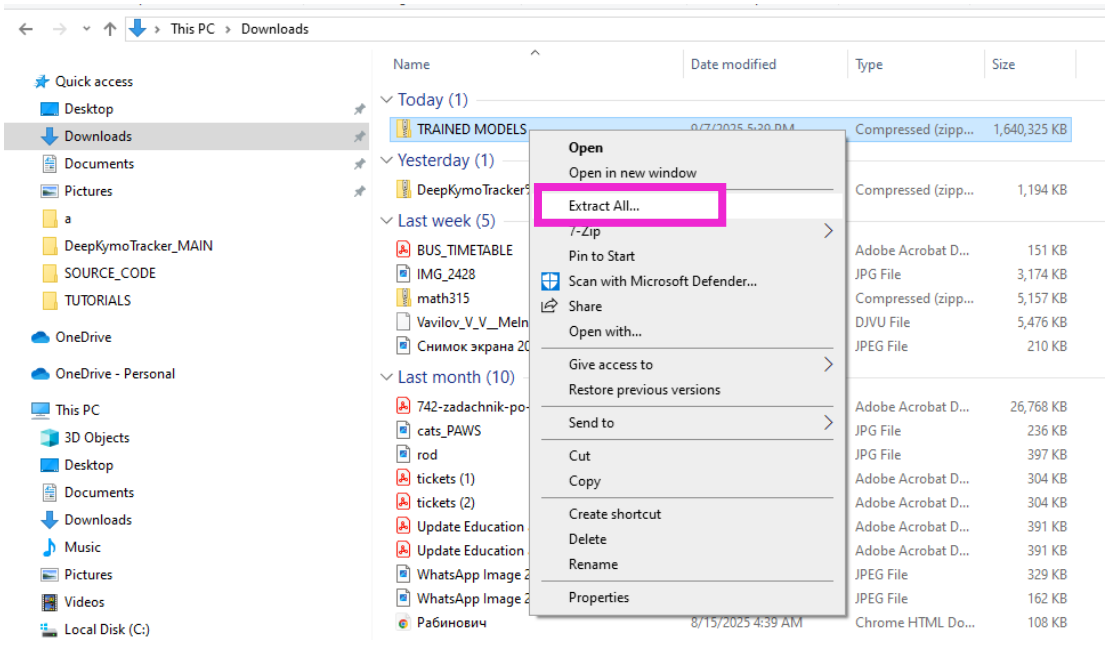
To get to Zenodo repository, click on the link below:

https://doi.org/10.5281/zenodo.11540886

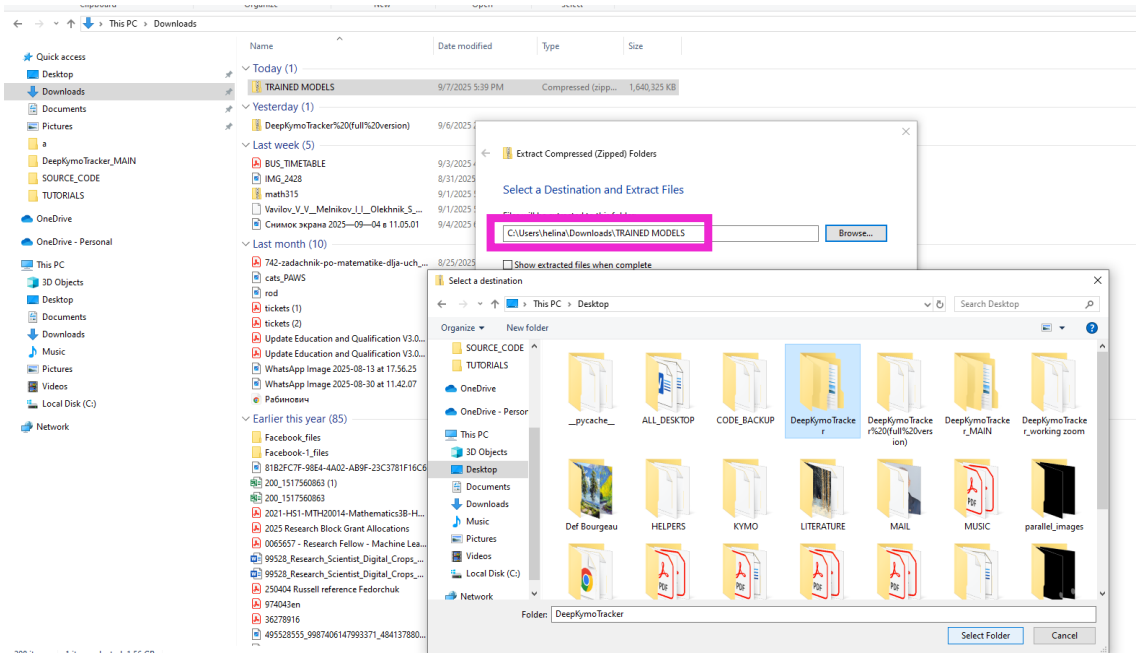
The contents of the repository will appear. Hit Download button at the bottom of the screen:



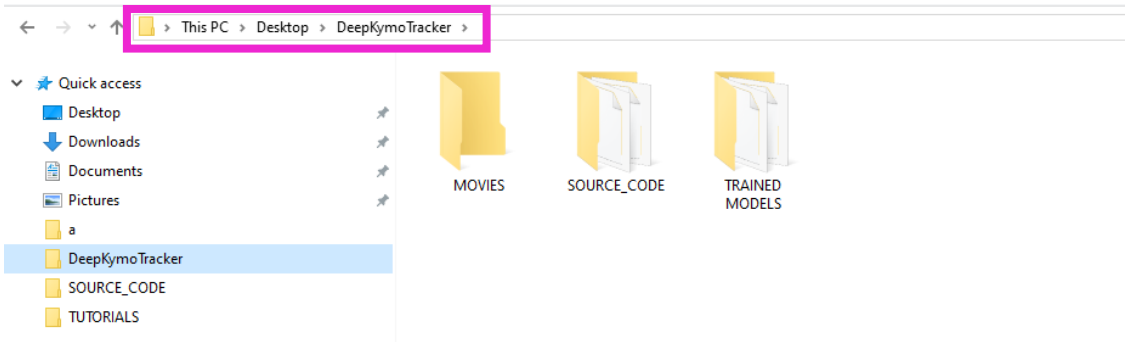
The zip file TRAINED MODELS.zip will land in your Downloads. Again, right-click on it and choose Extract All...



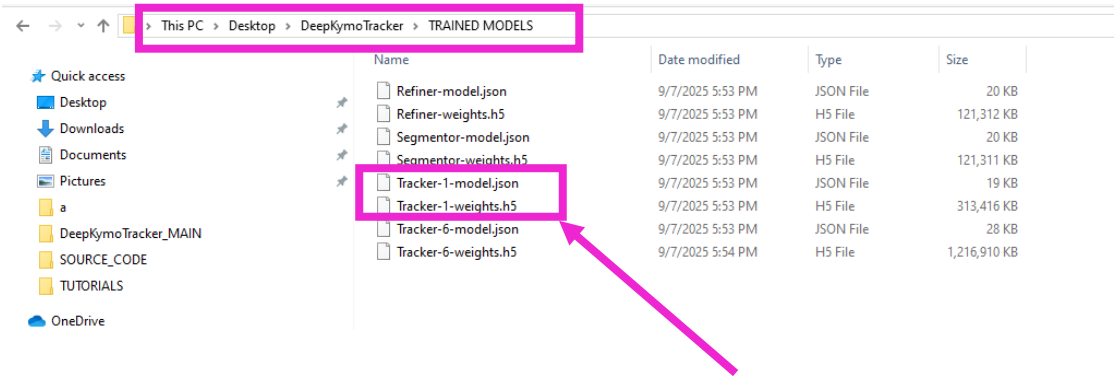
Again, navigate to your DeepKymoTracker folder and hit Select Folder:



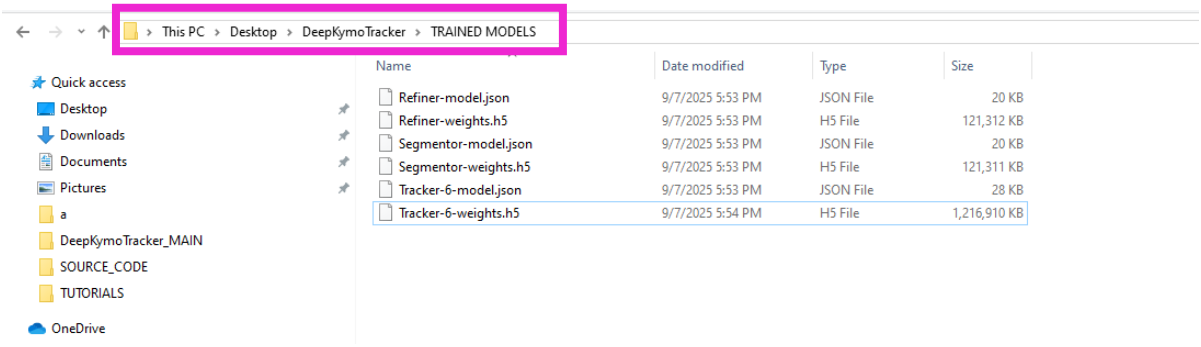
The contents of the .zip file will land in your DeepKymoTracker folder as the folder named TRAINED MODELS:



Inside TRAINED MODELS folder, you will find
6 files. To save some memory, you can delete Tracker-1-model.json and Tracker-1-weights.h5 – they are from the old version of DeepKymoTracker and are not utilised any longer:

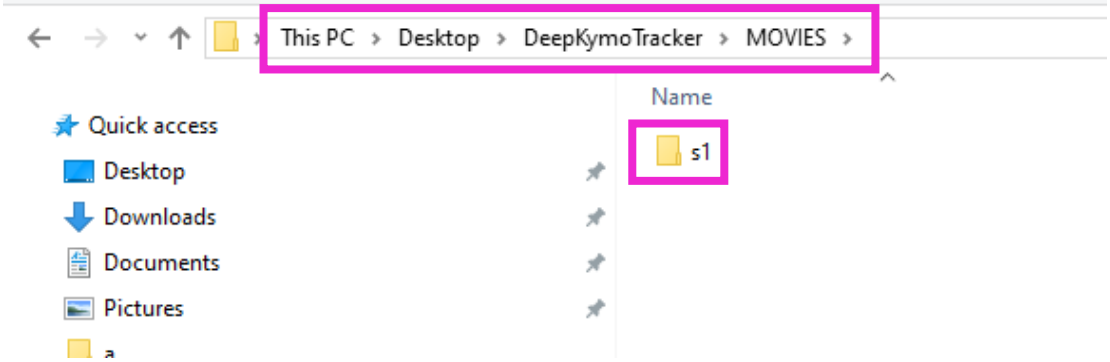


Check the result:



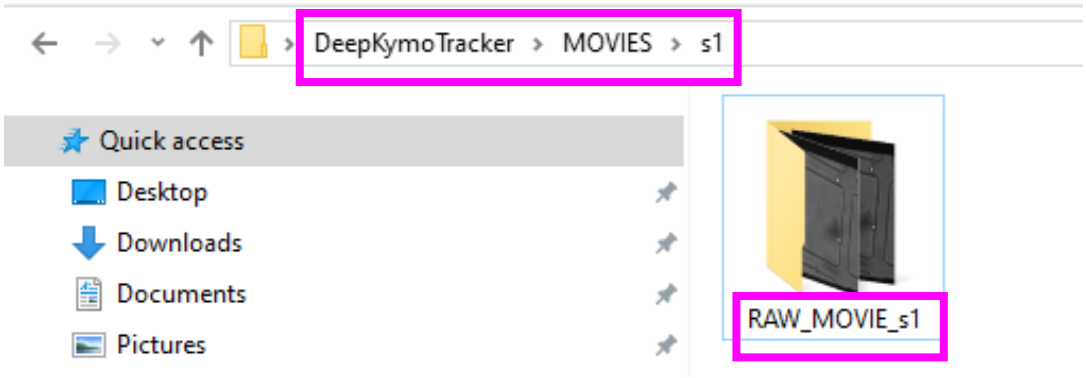
4. Create an input cell movie folder

Inside the MOVIES folder, you need to create another folder with the same name as your movie`s. For example, if your movie name is **s1**, the folder name will be s1 as well.



After that, put the folder with the cell movie inside that folder and modify its name to become RAW_MOVIE_{original movie name} (for our example, it will be RAW_MOVIE_s1):

s1 → RAW_MOVIE_s1



Remember: with every new cell movie, you need to repeat the process again:

1. Create the folder with the name that is the original name of your cell movie
2. Put the folder with the cell movie inside as a subfolder
3. Change the original name of the movie to RAW_MOVIE_{original movie name}.

Now, everything is ready!