Guide of DeepLabCut

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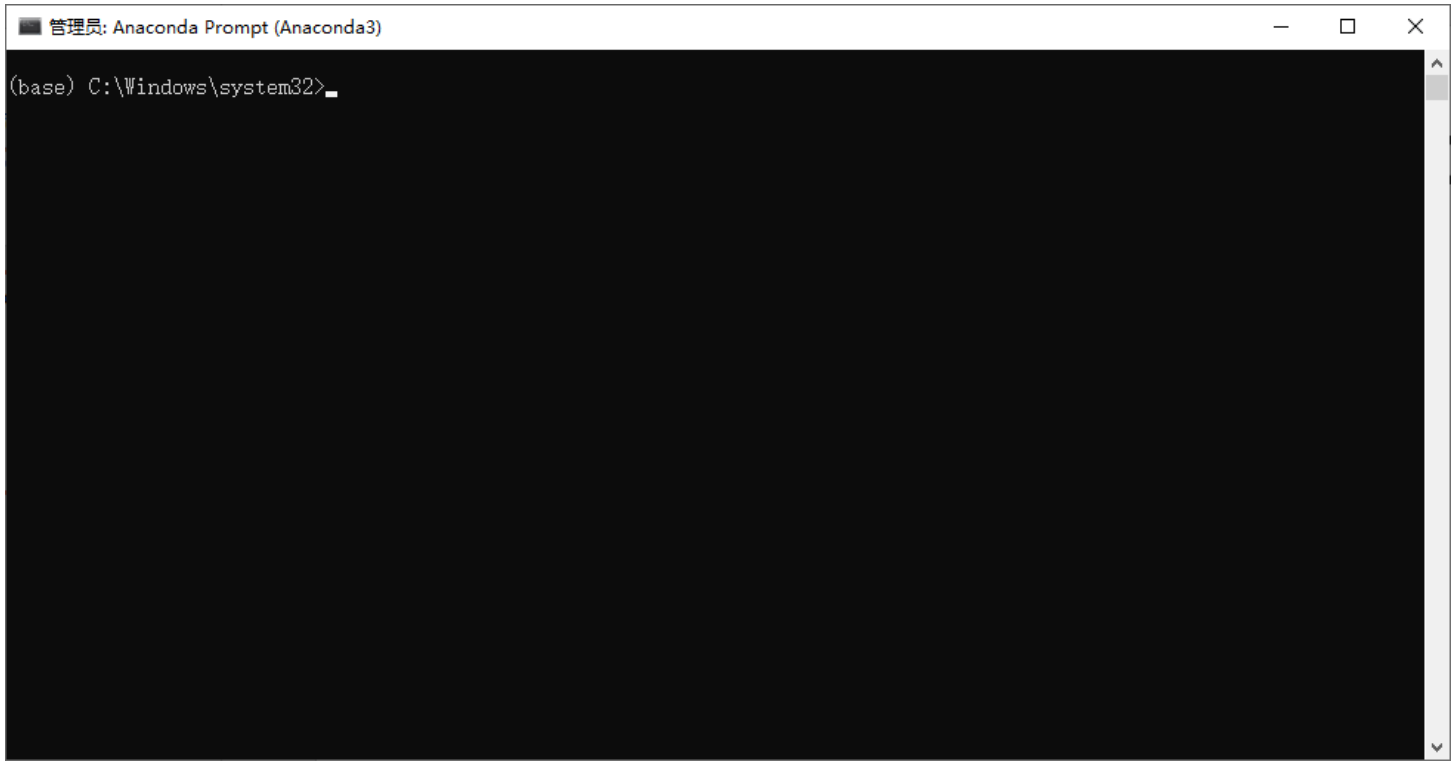
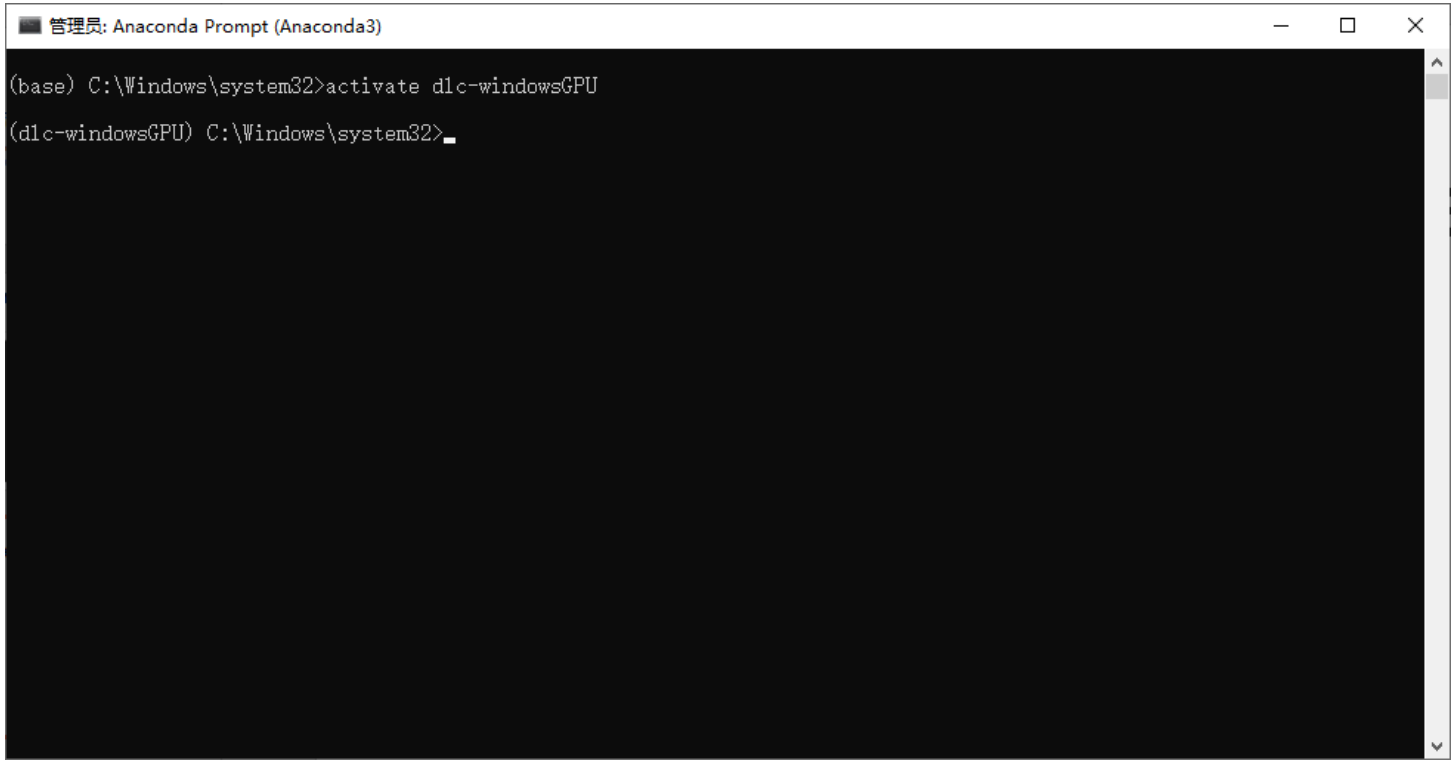
July 22nd, 2020

1. Open the terminal in Administrator status



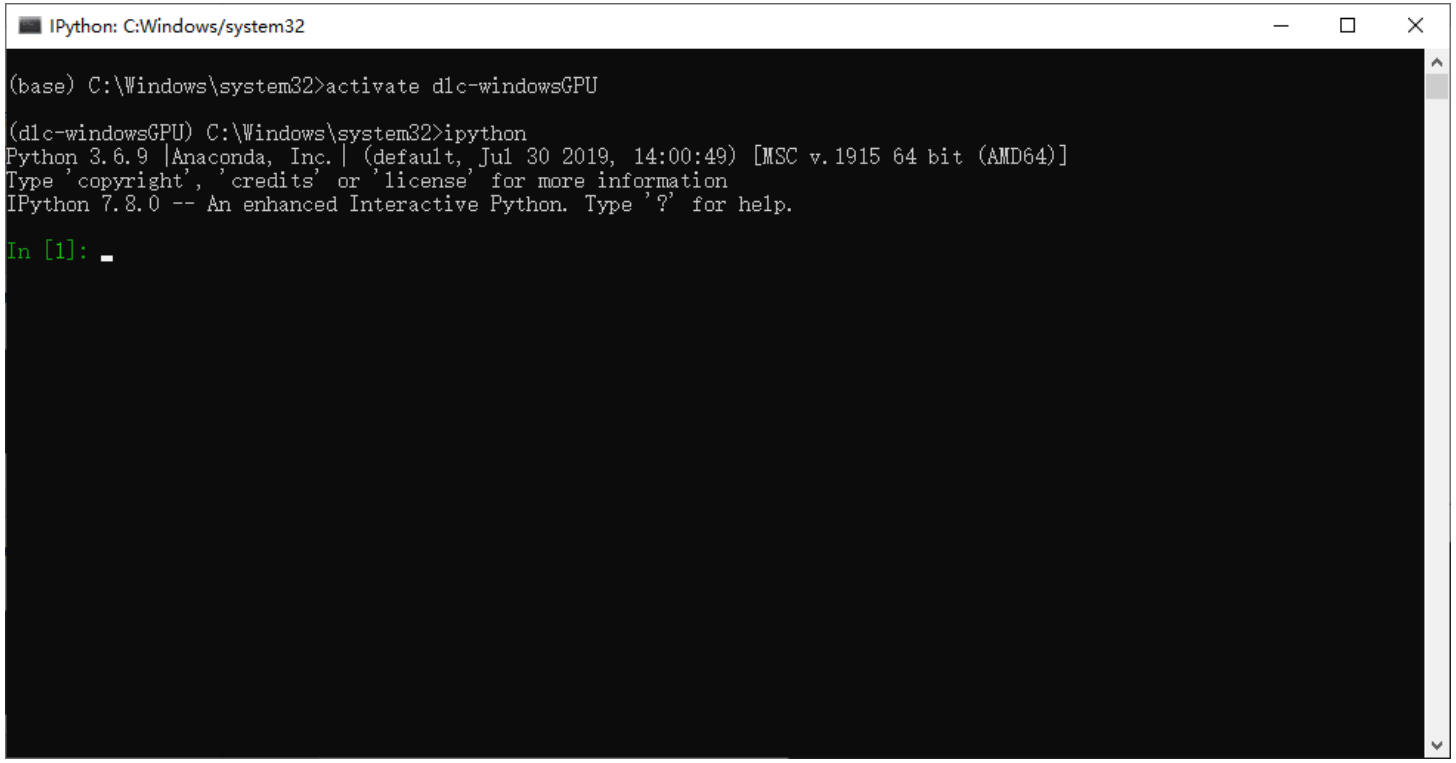
2. Enter the environment of DLC*

Code: activate dlc-windowsGPU
*DLC: DeepLabCut



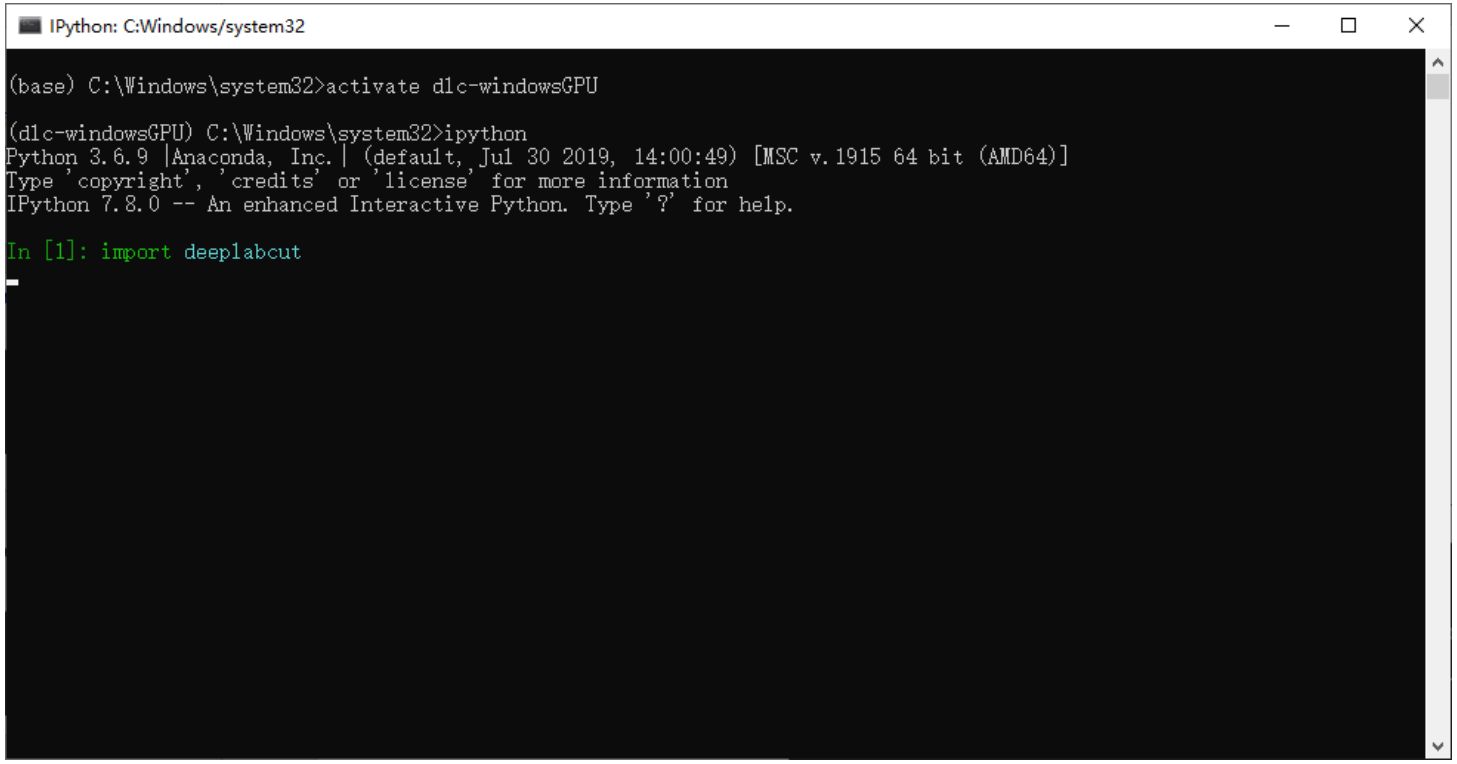
3. Open IPython

Code: ipython



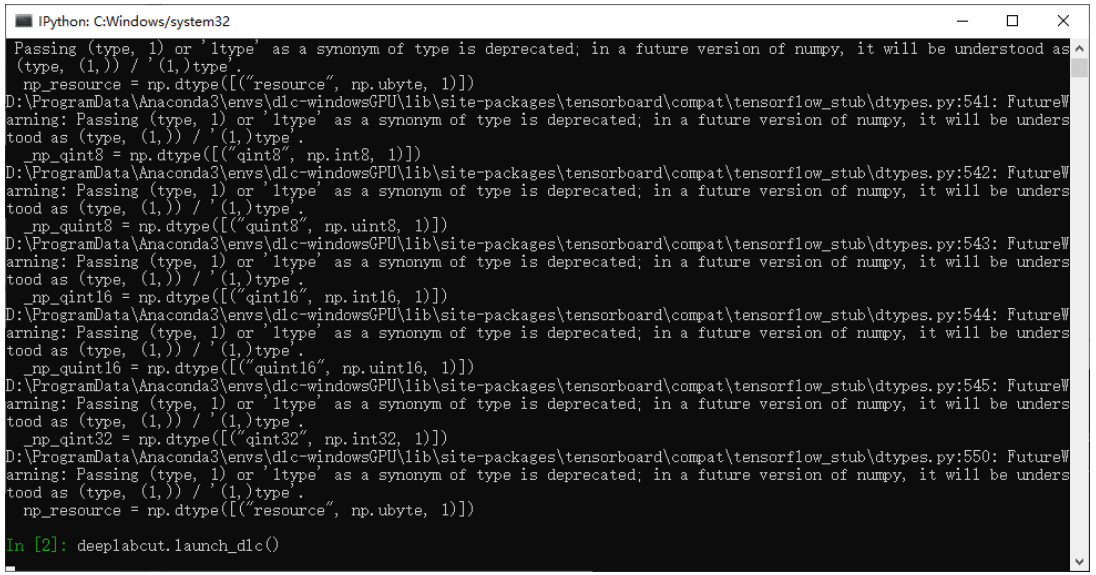
4. Import DLC

Code:
```
import tensorflow as tf
import deeplabcut
config = tf.ConfigProto()
config.gpu_options.allow_growth = True
session = tf.Session(config=config)
```



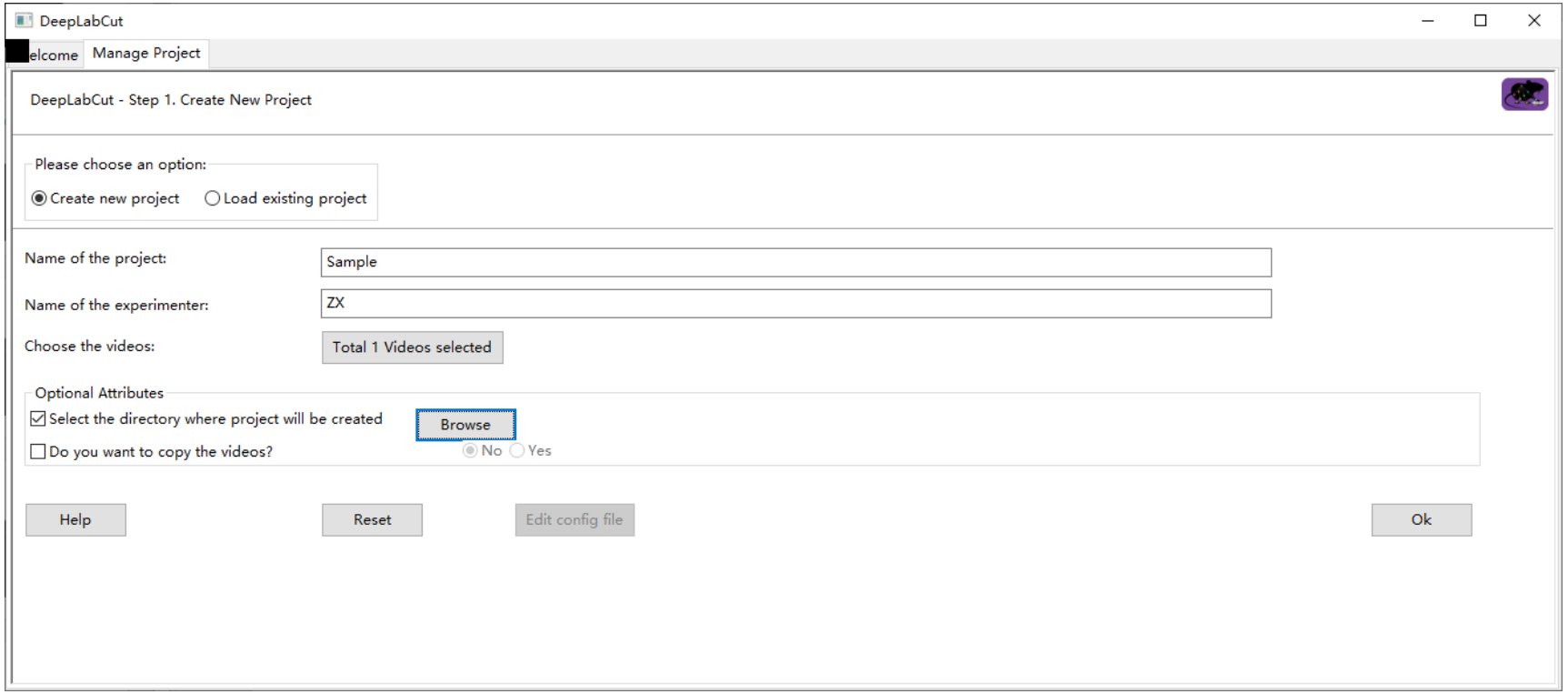
5. Open DLC UI

Code: deeplabcut.launch_dlc()



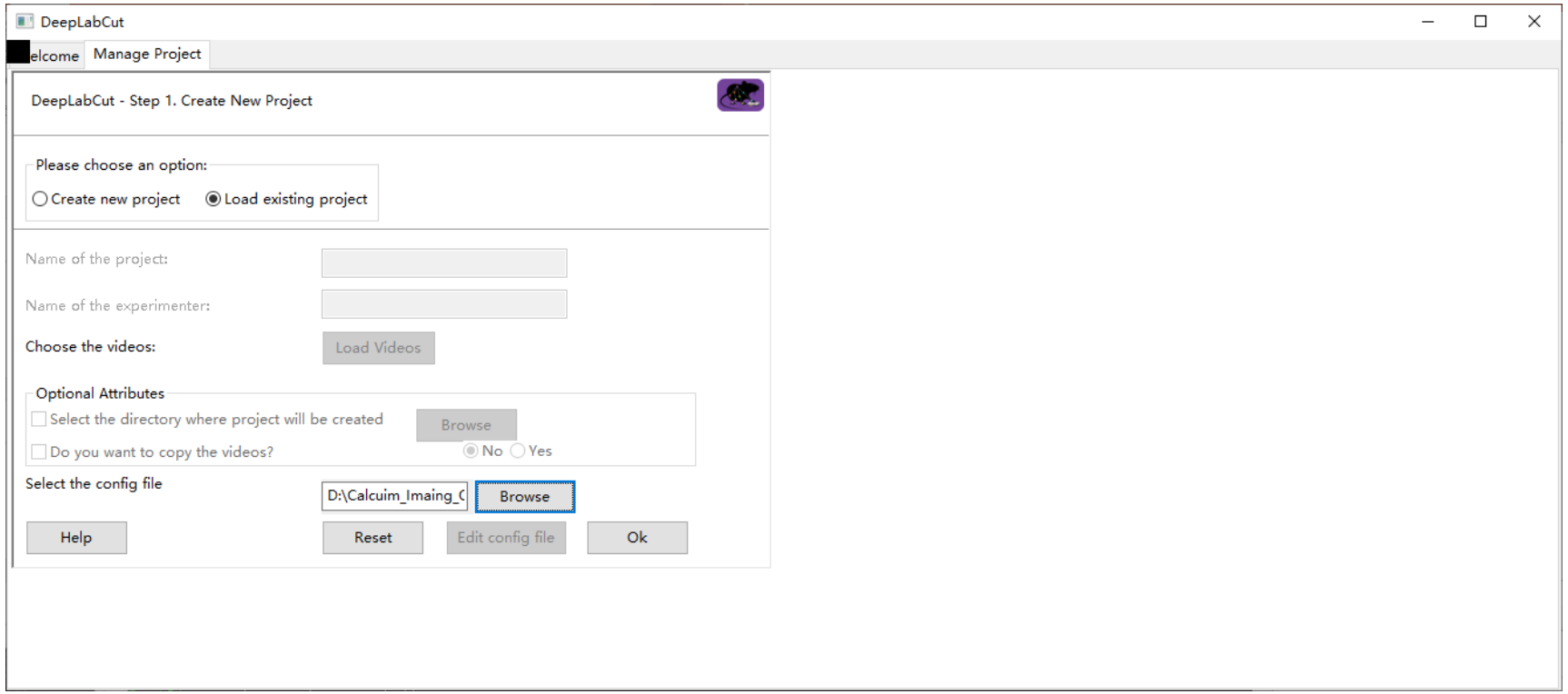
6. Create or load a project

Create:
Enter the name of the project, the name of experimenter;
Choose the video you want to analyze;
Select the path you want to put this project;
Click ‘Ok’ button.



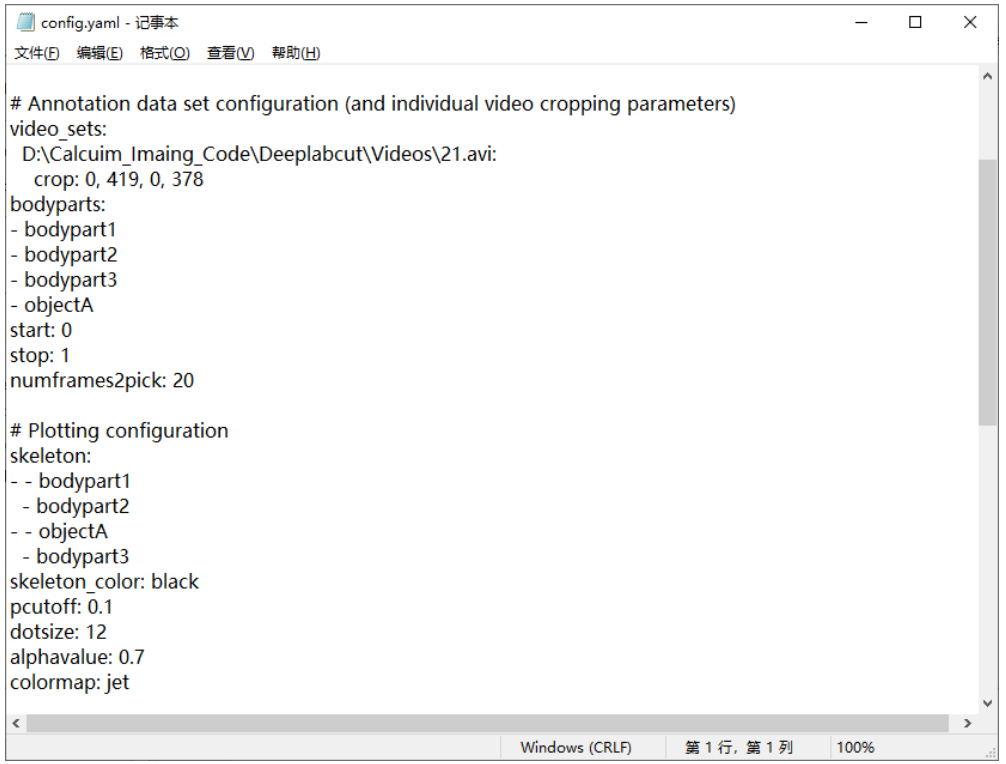
6. Create or load a project *(continued)*

Load:
Select the config file in the project (the extension is ‘yaml’);
Click ‘Ok’ button.
(Then jump to step 12.)



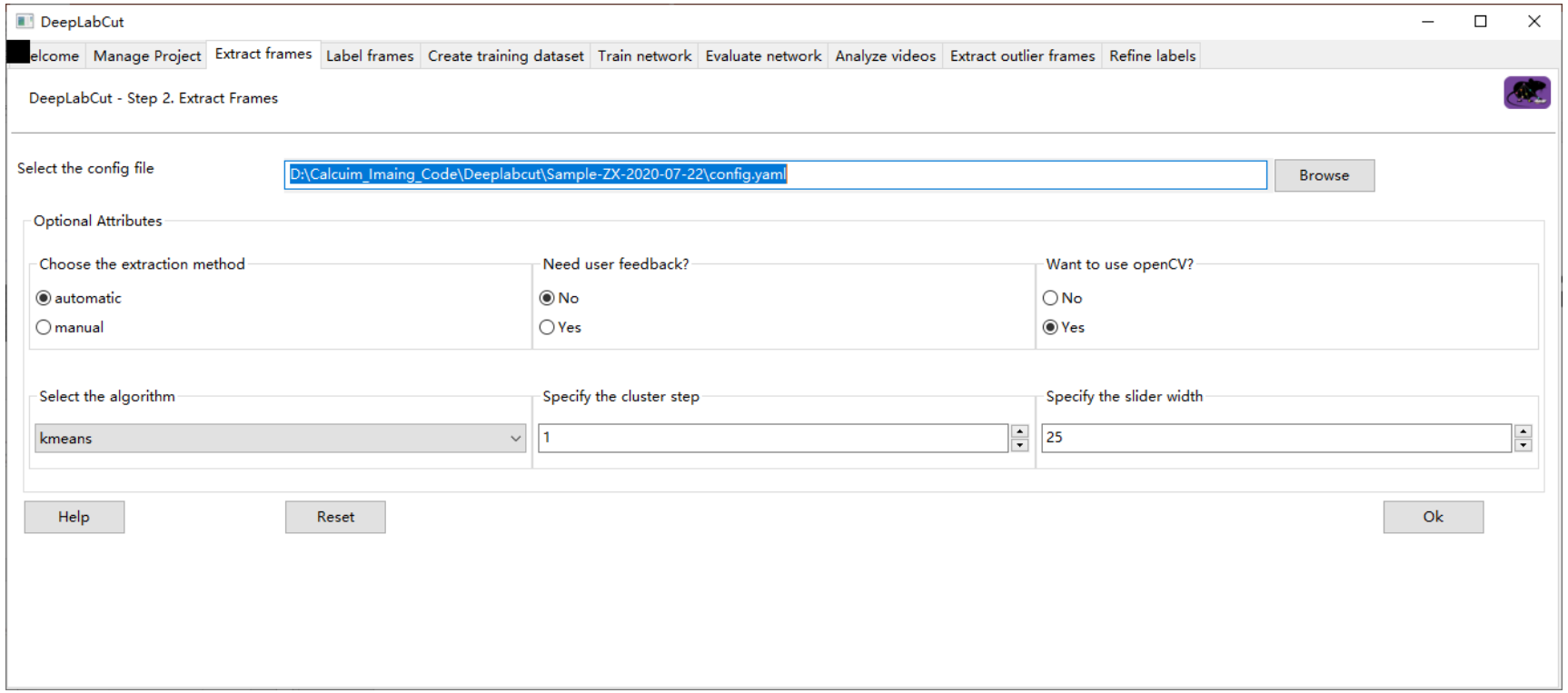
6. Create or load a project *(selected)*

Edit the config file:
Click ‘Edit config file’ button;
Edit the parameters you want to change;
Save the file;
Close the file.



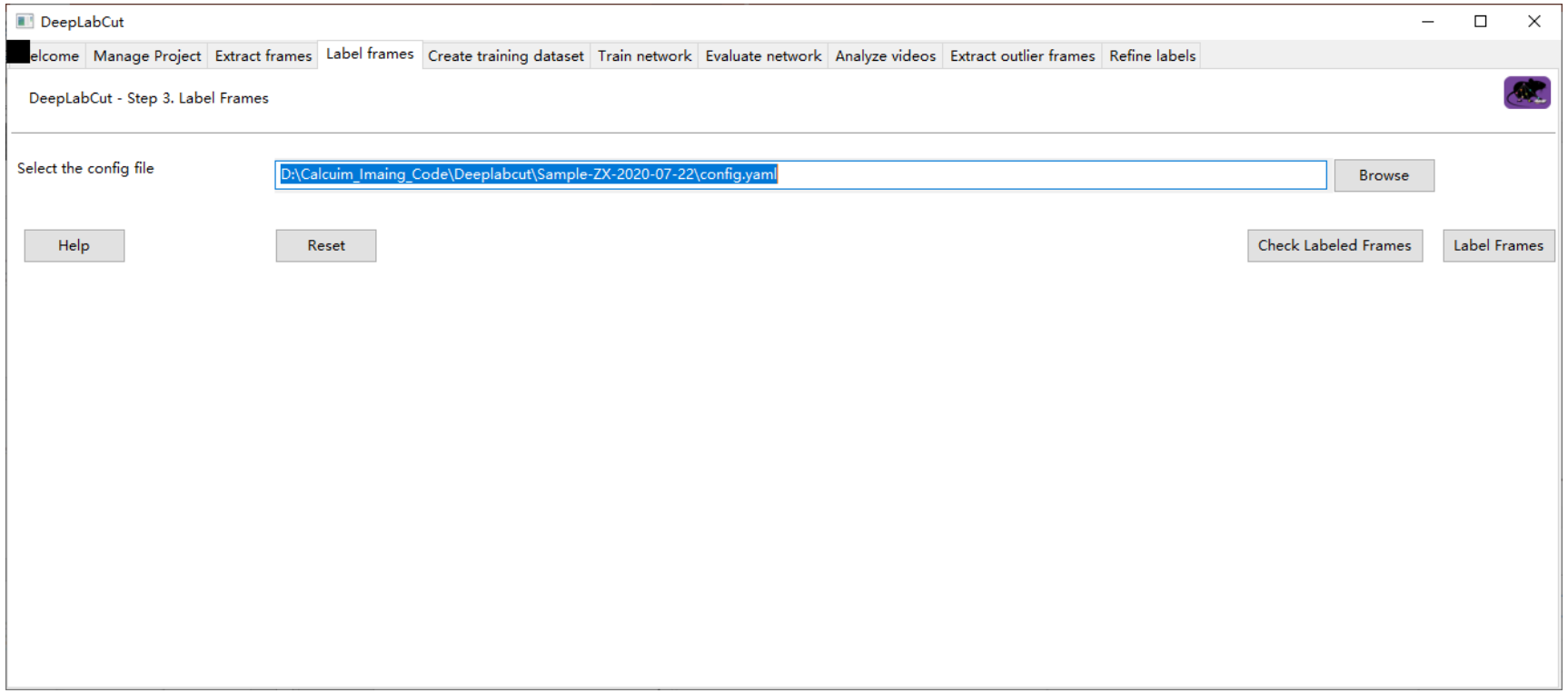
7. Extract frames of the videos

Click ‘Ok’ button.



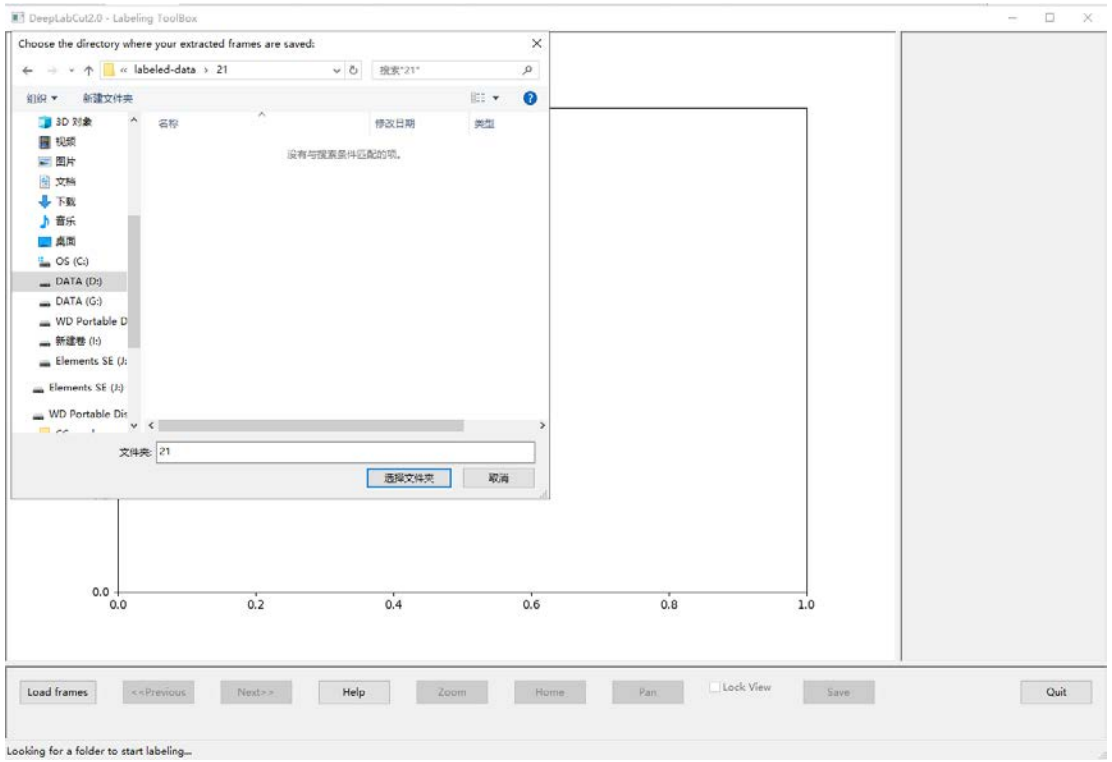
8. Label frames

Click ‘Label Frames’ button.



8. Label frames *(continued)*

Click ‘Load frames’ button;
Choose the folder.

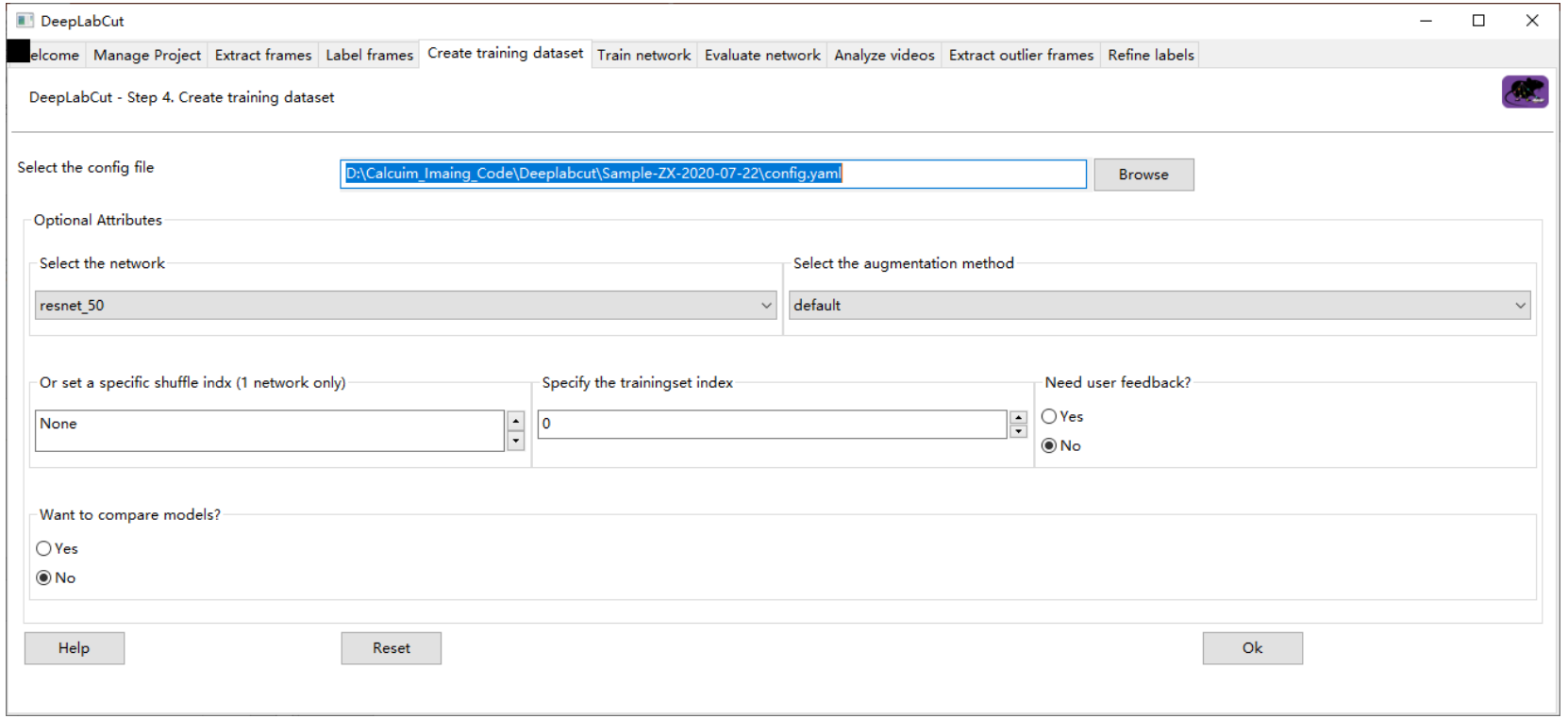


8. Label frames *(continued)*

Label the parts you are interested (right click of mouse);
Click ‘save’ button after labeling all frames;
Click ‘quit’ button or close the window directly;
Click ‘Check Labeled Frames’ button.

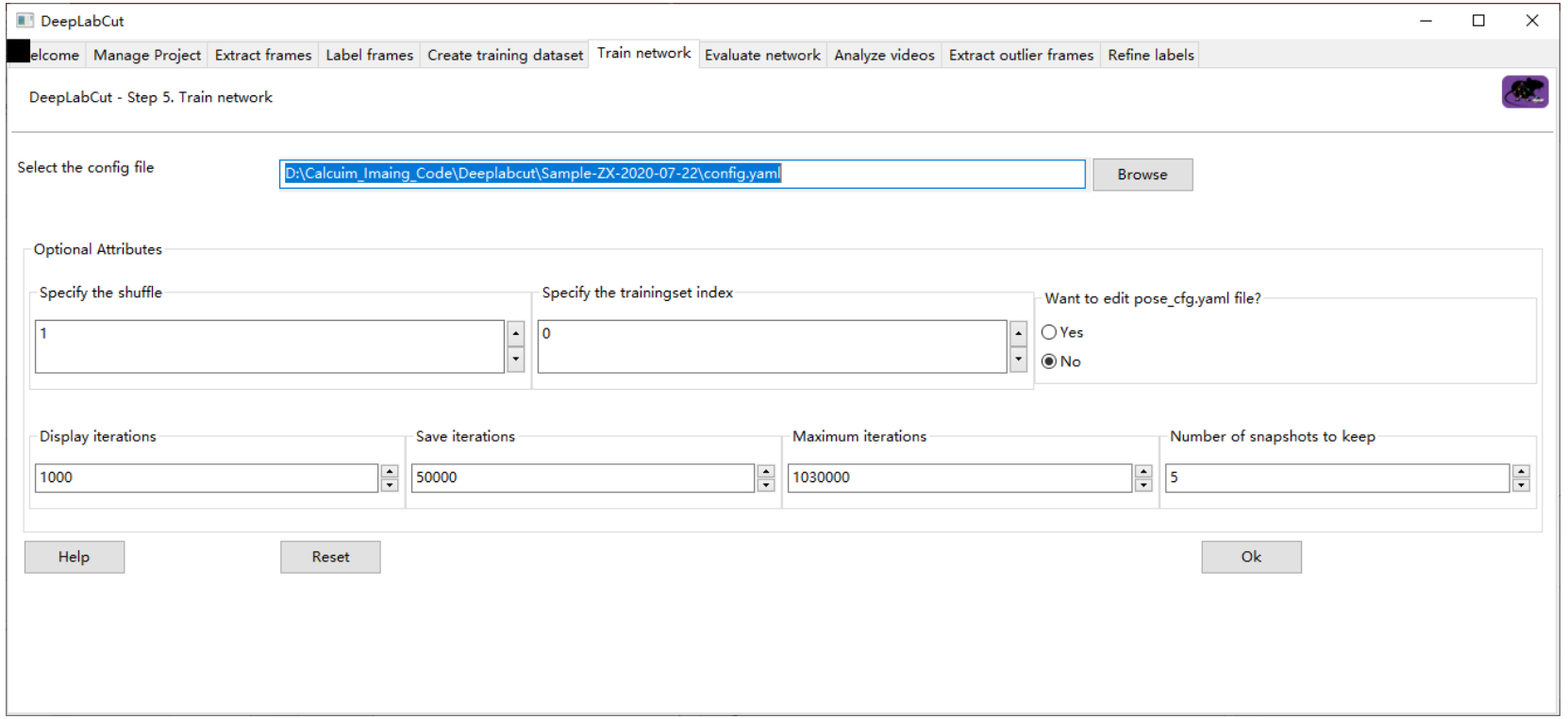
9. Create training dataset

Click ‘Ok’ button.



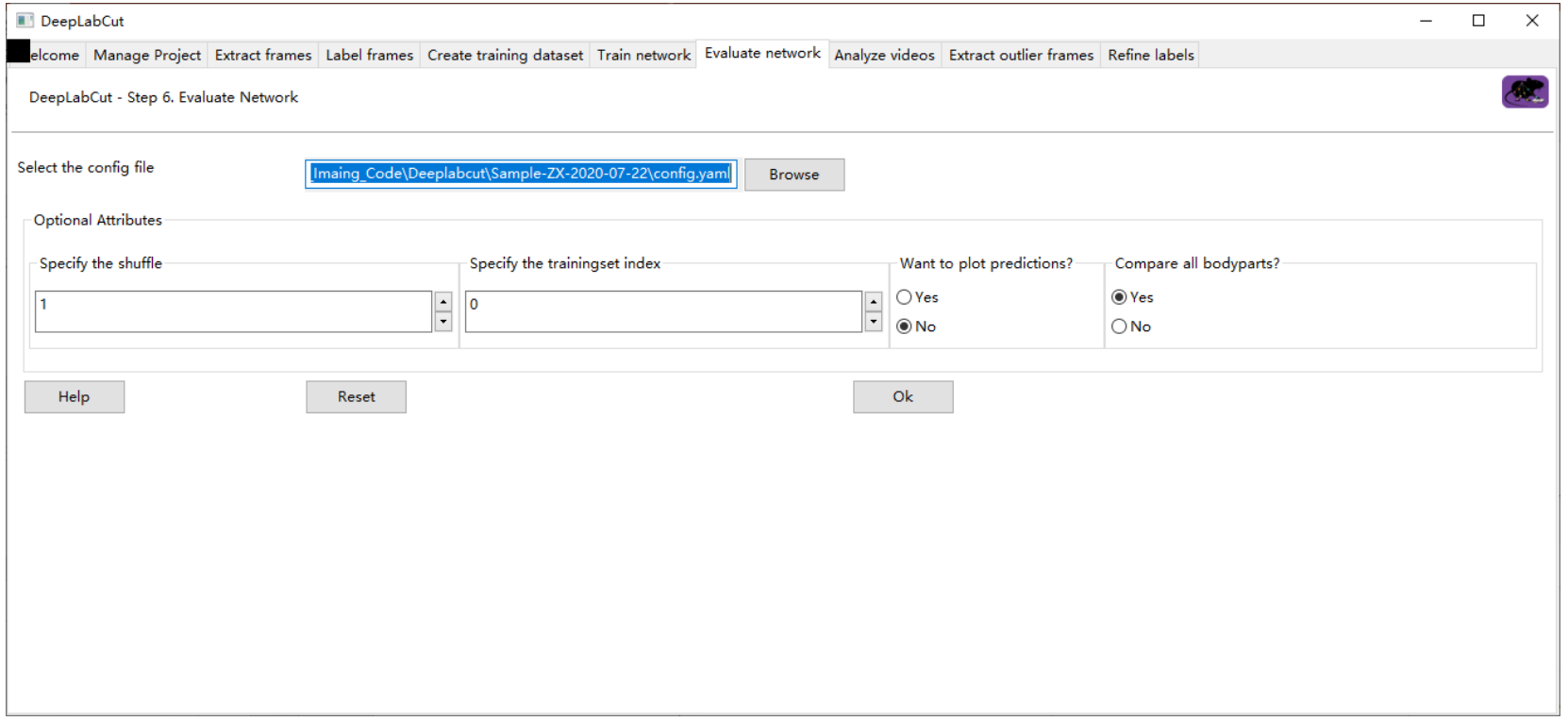
10. Train network

Click ‘Ok’ button (it takes hours).



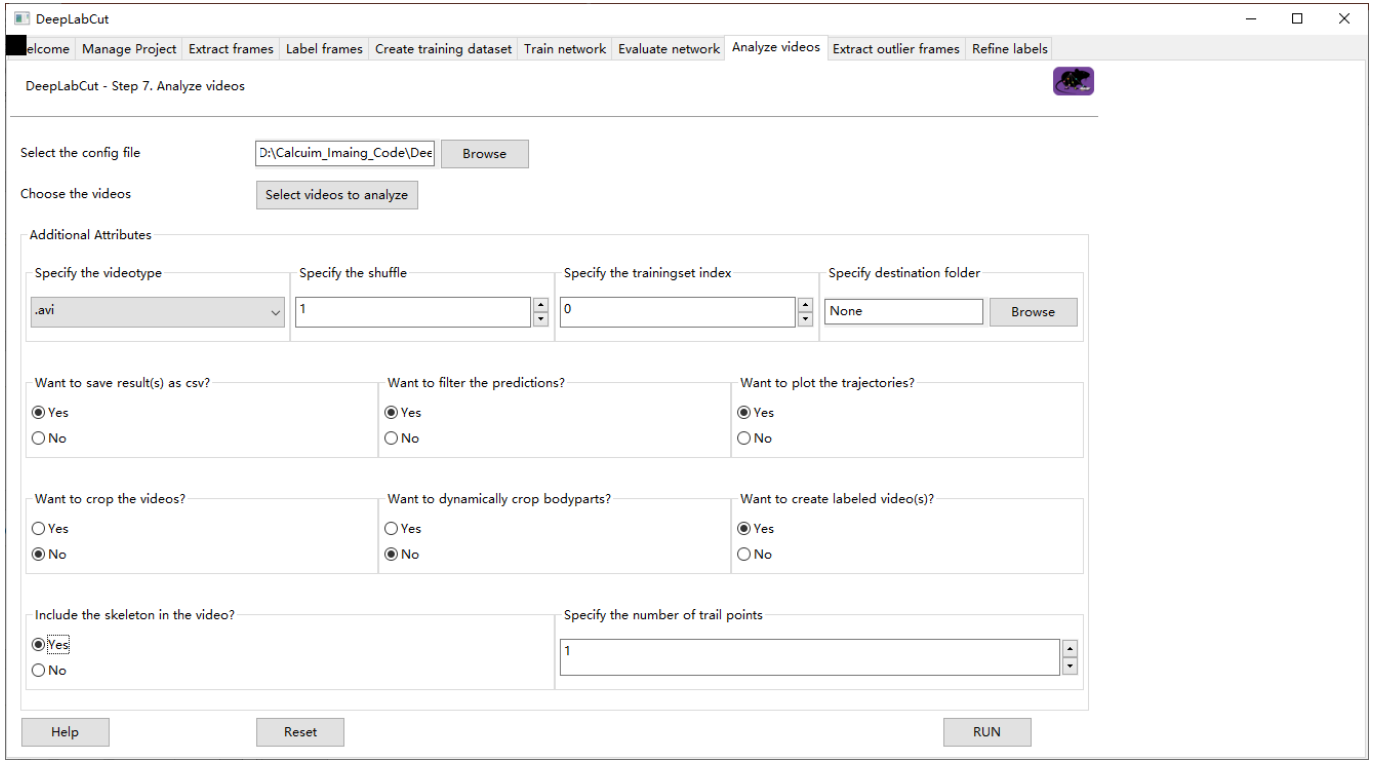
11. Evaluate network

Click ‘Ok’ button.



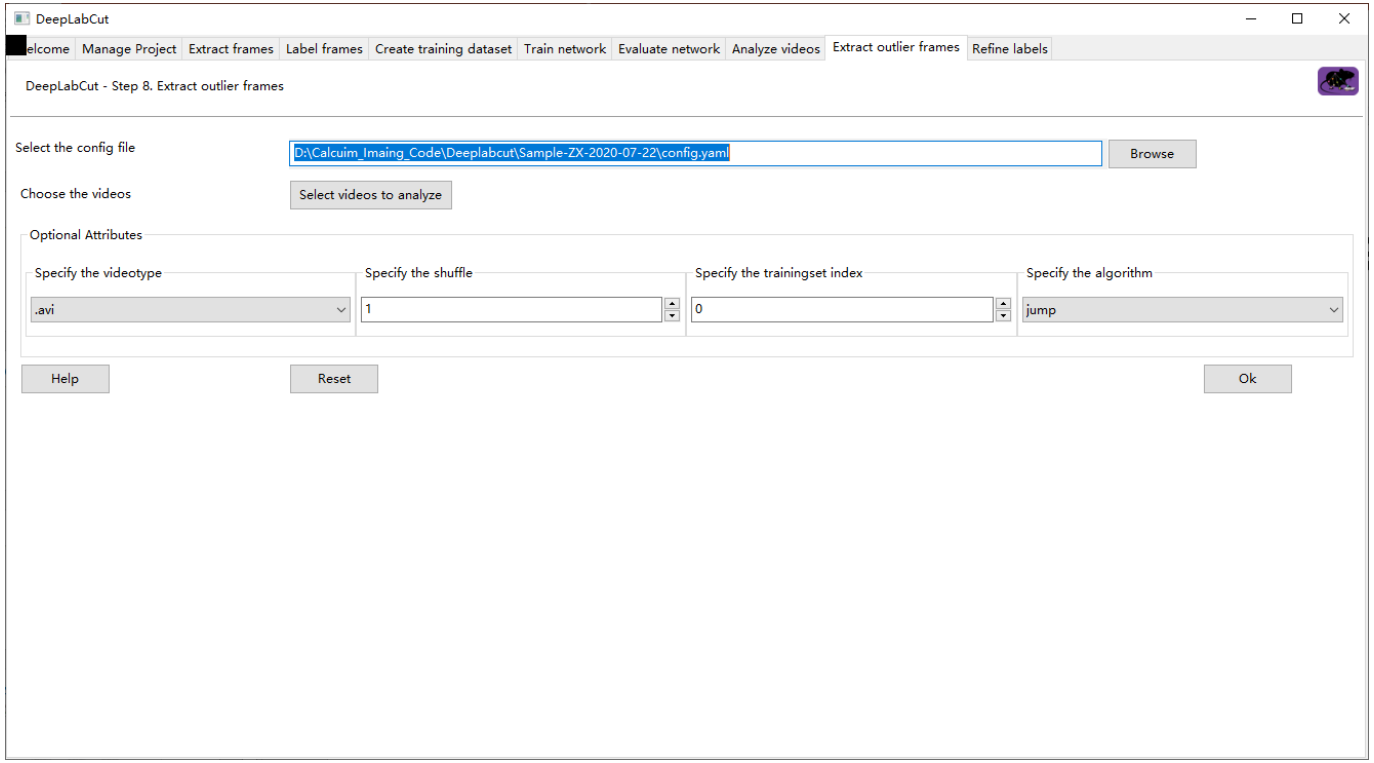
12. Analyze videos

Select videos you want to analyze;
Set parameters as shown below or use default settings;
Click ‘RUN’ button.



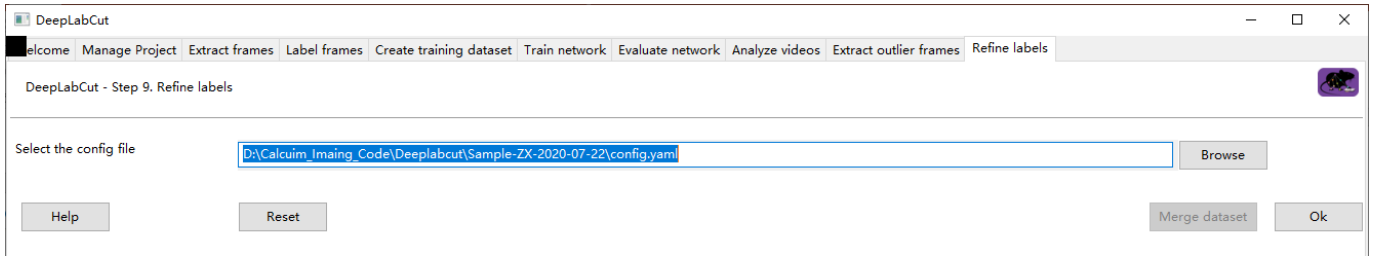
13. Extract outlier frames *(selected)*

Select videos you want to refine;
Click ‘Ok’ button.



13. Refine labels *(selected)*

Click ‘Ok’ button;
Click ‘Load frames’ button;
Select the ‘.h5’ file in folders;
Refine frames;
Click ‘save’ button after refining all frames;
Click ‘quit’ button or close the window directly;
Click ‘Merge dataset’ button.
(Then jump to step 10.)



Reference

http://www.deeplabcut.org

Nath T , Mathis A , Chen A C , et al. Using DeepLabCut for 3D markerless pose estimation across species and behaviors[J]. Nature Protocols, 2019, 14(7):1.