

TagLab PC installation

1. Check to see if you have an NVIDIA graphics card. If you do, you'll need to download and install the NVCC graphics driver. To see if you have it already, open the command prompt (click on the windows icon and type in CMD to find it) and then in the console, type in:

```
nvcc --version
```

If it prints out a number other than 11.6, you'll need to uninstall it (go to programs list and uninstall NVIDIA graphics drivers from there) first before installing the proper one. If it says command not found or something, then you're good to proceed!

2. (Ignore if NVCC 11.6 is installed or if you don't have an NVIDIA graphics card) Download NVCC version 11.6 (choose exe(local) on the download page). It can be found at <https://developer.nvidia.com/cuda-11-6-2-download-archive>

1. Install with custom options and only install the necessary components (Libraries within the Runtime dropdown, and everything in the Developer dropdown - nothing else and especially I would recommend NOT overwriting your display driver)

3. Check to see if NVCC installation worked by running the nvcc version check noted in step 1. If it worked, proceed to the next step!

4. Check to see if python is already installed on your machine by running the following command in the command prompt:

```
python --version
```

It's also worth checking this command to see if python is installed but with a different path:

```
python3 --version
```

Note: if either of these commands print a version, python is installed, and unless it's python 3.9.x, uninstall it by going to the programs list and uninstalling it. If you've got conda or some other python setup on your computer, I'm assuming you know how to install and work with a specific python version within that environment. The rest of the steps 6 and on should work find if that's the case. Assuming that you don't have python installed, or have just uninstalled a different version, continue with the following:

5. Install python 3.9.13, which can be found at <https://www.python.org/ftp/python/3.9.13/python-3.9.13-amd64.exe>

1. In the installation process, make sure that you check the box at

the bottom in the first step that adds python 3.9.13 to the PATH variable (THIS IS CRITICALLY IMPORTANT)

2. **If you want it to be installed for all users, you would need to run the exe file as an administrator, then check the box for install for all users.**

3. Run the following command to check python version. You'll want it to read out 3.9.13

```
python --version
```

6. Download Microsoft C++ Build Tools from this link: https://aka.ms/vs/17/release/vs_BuildTools.exe

1. When you open this up, choose Desktop Development with C++ and then on the right hand side of the screen, only choose the first two options (something like MVSC C++ Build Tools is the first one and the second one is a Windows SDK, either 10 or 11 depending on your system). Uncheck the other options besides the first two. You should be installing something like 6GB of files to your computer - make sure you've got enough space for this.

7. Download the correct GDAL version. This has become increasingly difficult, so we have stored a copy of the appropriate wheel file (windows 64-bit operating system, python 3.9, and GDAL 3.4.3). Find it at https://www.dropbox.com/scl/fi/rews7ikxqp362h7gz3j1o/GDAL-3.4.3-cp39-cp39-win_amd64.whl?rlkey=o72e89f1kptjscdb772t94uex&dl=0

8. Download the wheel file to your computer (downloads folder is fine), and then open terminal AS ADMINISTRATOR (search CMD in the taskbar, then in click run as administrator in the box for command prompt)

9. Type in the following command, replacing the brackets with the proper path to your wheel file

```
pip install [path to whl file]
```

10. Now we are finally ready to get TagLab itself. Download the taglab installation files from GitHub: <https://github.com/cnr-isti-vclab/TagLab/archive/refs/heads/main.zip>

11. First unzip this folder into your downloads. Then, download the PIMS Caribbean Corals label set from this link: https://www.dropbox.com/scl/fi/rra63z80vhy5dru14or23/carribean_corals.json?rlkey=9ka2ojdtum96zefqmti9hzjy4&dl=0 and the TagLab icon file (not

critical) from this link: <https://www.dropbox.com/scl/fi/swdp35mkvxs8lzq40kfcy/TagLab.ico?rlkey=3g0h4li12e0ibmpwmnpffsqjd&dl=0>

12. Place the caribbean_corals.json file in the dictionaries subfolder of the TagLab installation directory (Downloads\TagLab-main), and place the TagLab.ico file in the root of the TagLab directory

13. Open up the coraline subfolder of the TagLab directory, and then open Coraline.py file in Notepad.

14. Modify line 44 to remove 'multichannel=false'. This is the original contents of line 44:

```
img = gaussian(img, sigma = 1.5, multichannel=False)
```

...and after modification, it should look like this:

```
img = gaussian(img, sigma = 1.5)
```

Save the file and close Notepad.

15. Rename the TagLab installation folder from TagLab-main to just TagLab. I suggest moving the whole folder into Program Files if you want it available for all users (otherwise, somewhere in your user folder is fine) Note: you will need admin privileges to put TagLab in Program Files. The final folder path to the TagLab directory should look like this:

C:\Program Files\TagLab

16. Go back into the administrator command prompt and navigate to the TagLab folder using the cd command:

```
cd C:\Program Files\Taglab
```

17. Next, run the TagLab installation with one of these commands:

```
python install.py
```

or (if you don't have an NVIDIA graphics card and didn't install NVCC):

```
python install.py cpu
```

18. This will take probably around 15 minutes to finish installing the necessary dependencies and classification networks. When that's done, type the following into the command prompt to start up the program!

```
python taglab.py
```

19. This should open up TagLab. To make your life easy, using the file explorer, navigate to your TagLab folder, right click on TagLab.py and choose "create shortcut," which you should put on your desktop. Rename it from TagLab.py - shortcut to just TagLab. You can simply double click on this shortcut to start up TagLab in the future.

Note: If you want to make this accessible by all users of a computer, put it in the public desktop folder at C:\Users\public\Desktop

20. If you want to be fancy, go into properties of the TagLab shortcut and change the icon to the TagLab.ico file that you put in the TagLab directory earlier.
21. To use the Caribbean Corals label set by default, go into File —> Settings in TagLab, and change the default dictionary to caribbean_corals.json. Restart TagLab for this change to take effect.

That's it - happy coral outlining and labeling!