

Cellpose

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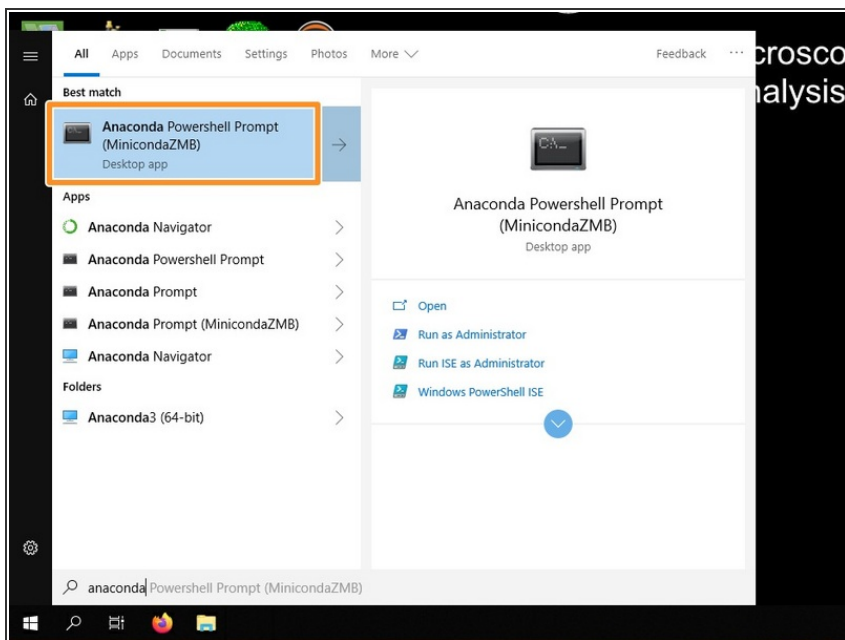


INTRODUCTION

3D segmentation

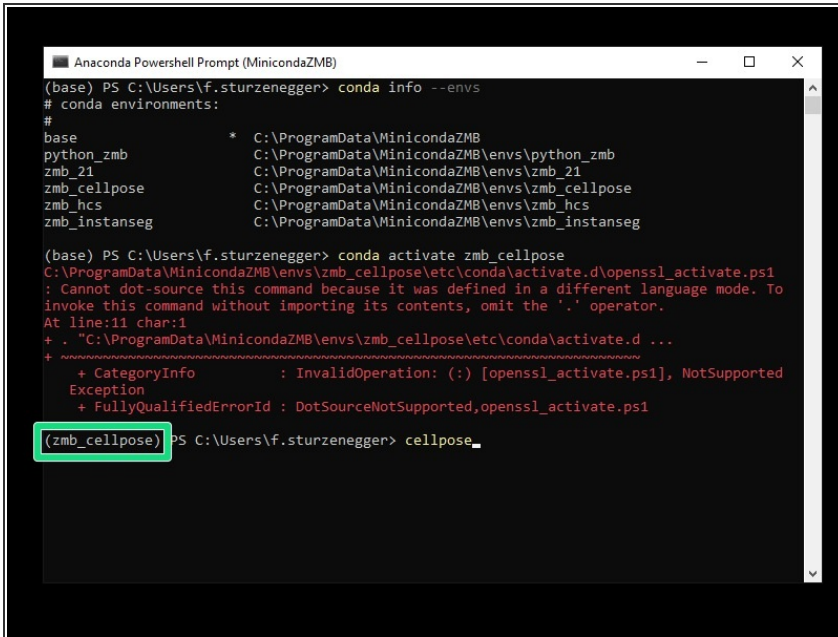
Tiffs with multiple planes and multiple channels are supported in the GUI (can drag-and-drop tiffs) and supported when running in a notebook. Multiplane images should be of shape $n_{\text{planes}} \times \text{channels} \times n_Y \times n_X$ or as $n_{\text{planes}} \times n_Y \times n_X$. You can test this by running in python

Step 1 — Cellpose



- Reserve and open a ZMB special B VM.
- Search for and open "Anaconda Powershell Prompt (MinicondaZMB)" via the start button.

Step 2



```
Anaconda Powershell Prompt (MinicondaZMB)

(base) PS C:\Users\f.sturzenegger> conda info --envs
# conda environments:
#
base                    * C:\ProgramData\MinicondaZMB
python_zmb              C:\ProgramData\MinicondaZMB\envs\python_zmb
zmb_21                  C:\ProgramData\MinicondaZMB\envs\zmb_21
zmb_cellpose            C:\ProgramData\MinicondaZMB\envs\zmb_cellpose
zmb_hcs                 C:\ProgramData\MinicondaZMB\envs\zmb_hcs
zmb_instanseg           C:\ProgramData\MinicondaZMB\envs\zmb_instanseg

(base) PS C:\Users\f.sturzenegger> conda activate zmb_cellpose
C:\ProgramData\MinicondaZMB\envs\zmb_cellpose\etc\conda\activate.d\openssl_activate.ps1
: Cannot dot-source this command because it was defined in a different language mode. To
invoke this command without importing its contents, omit the '.' operator.
At line:11 char:1
+ . "C:\ProgramData\MinicondaZMB\envs\zmb_cellpose\etc\conda\activate.d ...
+ ~~~~~
+ CategoryInfo          : InvalidOperation: (:) [openssl_activate.ps1], NotSupported
Exception
+ FullyQualifiedErrorId : DotSourceNotSupported,openssl_activate.ps1

(zmb_cellpose) PS C:\Users\f.sturzenegger> cellpose_
```

① Check if the "zmb_cellpose" or "zmb_cellpose_v4" environment is available:

- `conda info --envs`

① Note: There are different environments with different cellpose versions: `zmb_cellpose` has version 3 installed, and `zmb_cellpose_v4` has version 4.

⚠ Contact the ZMB staff, if no cellpose environments are listed.

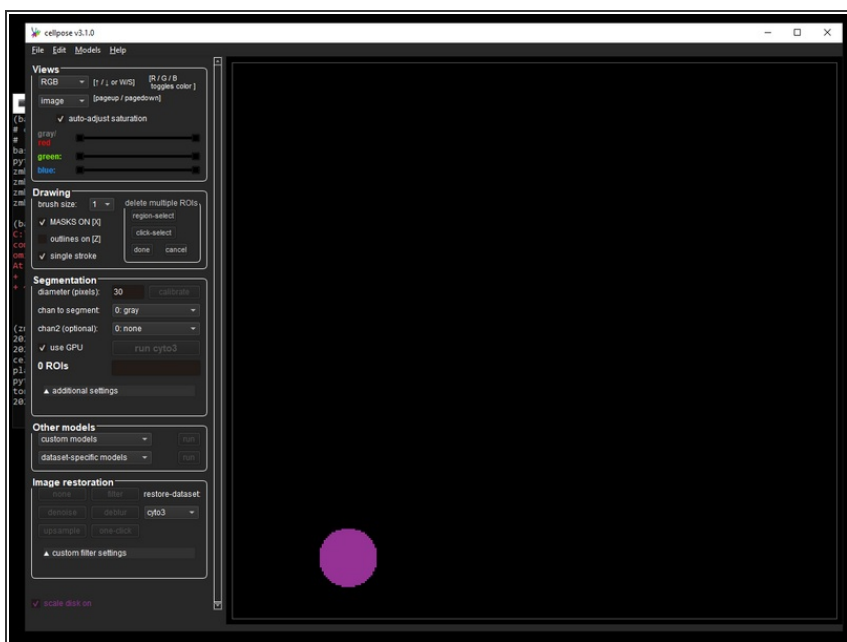
① Activate the desired environment:

- `conda activate zmb_cellpose`

⚠ Sometimes, an error-message appears (see image). This particular message can be ignored.

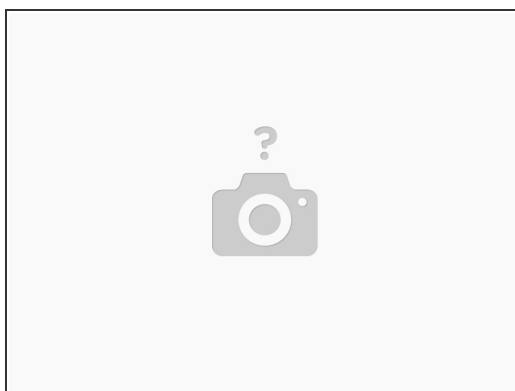
- The environment was activated successfully, if it is listed at the start of the line.

Step 3



- ❗ Launch the Cellpose GUI with the command:
 - `cellpose`
- ❗ Note: To segment 3D images, one needs to launch cellpose in the correct mode:
 - `cellpose --Zstack`
- You are good to go! Start using cellpose.
- More info and detailed instructions can be found [here](#).

Step 4



- ❗ For best accuracy and runtime performance, resize images so cells are less than 100 pixels across
 - For multi-channel, multi-Z tiff's, the expected format is Z x channels x Ly x Lx
 - CHAN TO SEG: this is the channel in which the cytoplasm or nuclei exist
 - CHAN2 (OPT): if cytoplasm model is chosen, then choose the nuclear channel for this option