Pre-requisite installations: SPROUT

Python and Python Environment

Download Python:
If Python is not already installed on your computer, we recommend downloading the Anaconda distribution (Download Anaconda Distribution | Anaconda). After entering your email address, find the download link in your email and select the appropriate version for your operating system.

Set up the Python Environment for SPROUT:

- For users with the Windows version of Anaconda, open the Anaconda Prompt by searching for it in the Start menu.
- For other types of Python installations, open the corresponding terminal where you can access Python.

Create and Set Up the Python Environment with Required Libraries

Here we use Python 3.10 and the versions of required libraries are listed below

- NumPy: 1.26.4
- Pandas: 2.21
- Scikit-image 0.22.0
- Tifffile: 2024.2.12
- Pyyaml: 6.0.1
- Trimesh: 4.3.1
- Matplotlib: 3.8.3
- open3d: 0.18.0

1. Create the environment with Python 3.10:

conda create -n sprout python=3.10

2. Activate the environment:

conda activate sprout

3. Install the specified libraries with their recommended versions:

pip install numpy==1.26.4 pandas==2.2.1 scikit-image==0.22.0 tifffile==2024.2.12 pyyaml==6.0.1 trimesh==4.3.1 matplotlib==3.8.3 open3d==0.18.0

4. Verify the installations:

python -c "import numpy, pandas, skimage, tifffile; print('Libraries installed successfully')"

If libraries are successfully installed, console would print 'Libraries installed successfully'

Install Visual Studio Code (VS Code) – Recommended

VS Code is an Integrated Development Environment (IDE) that makes it easy to manage and run SPROUT.
Download and install the version of VS Code appropriate for your operating system from: https://code.visualstudio.com/download

Once you have VS Code installed you can open it within the correct Python environment by activating the environment you created above

conda activate sprout

Then simply enter:

code

VS Code will then open.

Download MeshLab

MeshLab is used to view meshes generated from segmentations. Download it from: https://www.meshlab.net/#download

Download Fiji (ImageJ)

Fiji (ImageJ) is used to view image stacks, convert images to different types and view thresholds amongst many other useful things. Download it from: Fiji Downloads

Optional tools

You may also use **DragonFly** or **Avizo** to visualize and manipulate SPROUT's segmentation results.

Download Sprout and Demo data

You can download SPROUT and demo data from the following link: SPROUT Demo Data.
Feel free to explore the data and code before the workshop. However, as we may update the files, please make sure to download the latest version right before the workshop.