

SPTnet environment installation guide using Anaconda

1. Prerequisites

Before installing, ensure the following:

- Anaconda or Miniconda is installed on your system.
Download from: <https://www.anaconda.com/products/distribution>
- You have the “SPTnet_environment.yml” file available (shared with this **software package**).
- A CUDA-capable GPU with driver support for PyTorch CUDA 11.8

2. Open Anaconda Prompt or Terminal

- On Windows: Click the Start menu, search for "Anaconda Prompt",
- On macOS/Linux: Open a terminal window.

3. Navigate to the Folder with environment.yml

Use the “cd” command to change to the folder where your “SPTnet_environment.yml” is located.

For example, if the folder is located in disk:D:

1. `d:`

2. `cd "D:\SPTnet\Software\"`

(For macOS/Linux, adjust the path accordingly.)

4. Create the Conda Environment

Run the following command to create the environment:

```
conda env create -f SPTnet_environment.yml
```

This will create a new conda environment named “SPTnet” and install all required packages, including:

PyTorch (with CUDA 11.8 support)

OpenCV (headless)

SciPy, h5py, tqdm, matplotlib, pandas, ipython

Positional encodings for PyTorch

*This installation will take around 10 min depending on the internet speed.

5. Activate the Environment

Run the following command to activate the environment:

`conda activate SPTnet`

Your terminal should now show (SPTnet) at the beginning of the prompt.

Required MATLAB Packages

The following packages are needed to run the SPTnet training-data generator and visualization GUI:

1. DIPimage 2.9

- Installation files for Windows and Linux are included in the software package.
- Alternatively, download the installer from <https://diplib.org/DIPimage.html>

2. PSF-Toolbox

- Before running any scripts, ensure that MATLAB's search path includes the PSF-toolbox folder.
- For example: `addpath('C:/your/path/to/PSF-toolbox')`

* "noise" is a function in the DIPimage2.9 package, which is different than the MATLAB built-in function "imnoise"