Note on Creating the CaImAn Environment

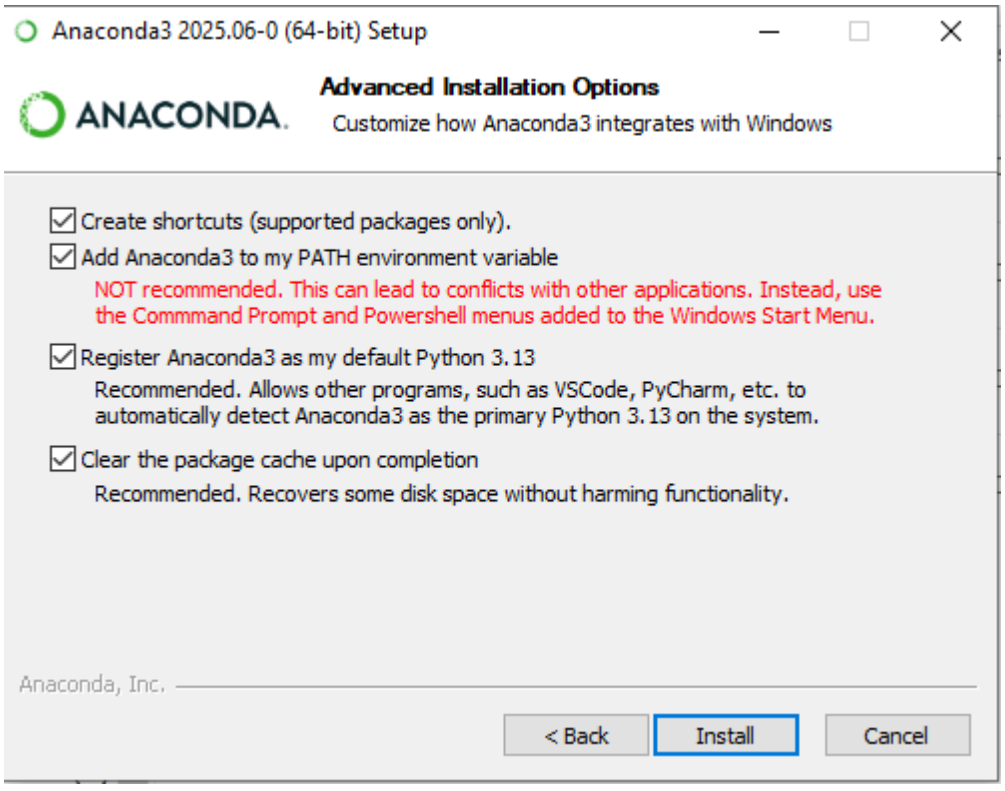
Last updated: 2025.12.10.

The goal of this document is to provide a step-by-step guide for installing CaImAn (1.11.4.-1.13.0) on a Windows PC. A Windows 10 or 11 system is required, with at least a few gigabytes of free space on the C: drive. We assume that no programming tools have been installed on the system before. Instructions may change with future software releases.

Installing the Anaconda Distribution:

The Anaconda Distribution includes the Anaconda Prompt, a command-line interface that provides direct access to the conda package manager and makes it easy to create and manage environments.

- Installation steps:
    1. Download the installer from the following link: https://www.anaconda.com/download/success
    2. Launch the installer and follow the on-screen instructions; Select all options here:



- The installer will create a folder named `anaconda3` inside your user directory (typically C:\Users\<username>\). All environments and setting files will be placed in this folder.

Installing Mamba

Mamba is a faster drop-in replacement for conda, but it is not included in the Anaconda Distribution by default.

- Open the **Anaconda Prompt** with the "Run as administrator" option and then copy and run the following command:
  `conda install mamba -n base -c conda-forge`
  (When prompted for confirmation, type **y** and press Enter to continue.)

Creating the CaImAn Environment and Installing the CaImAn Package

Pluvianus depends on CaImAn and uses its function to handle CaImAn data.

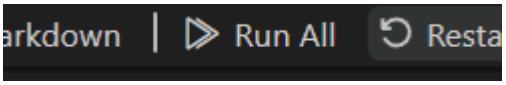
- In the **Anaconda Prompt** opened in the previous step, run the following command:
  `mamba create -n caiman -c conda-forge caiman`
  (When prompted for confirmation, type **y** and press Enter to continue. About 1GB will be downloaded, might take over an hour on lower profile machines)
- Activate the newly created environment:
  `conda activate caiman`
- Tensorflow related fix:
  - CaImAn 1.13.0. No need for this step (2025-12-10).
  - CaImAn 1.11.4. Replace the packages that cause the TensorFlow-related evaluate_components command (cell 28 of the demo_pipeline notebook) to fail. (Checked on 2025-09-23)
    `conda remove llvm-openmp -y`
- To install manager for downloading the demo datasets, run:
  `caimanmanager install`
  This will create a folder named **caiman_data** in your user folder. The terminal output will display the exact location of this folder.

```
(caiman) C:\Windows\system32>caimanmanager install
C:\Users\User\anaconda3\envs\caiman\lib\site-packages\caiman\__init__.py:3: UserWarning: pkg_resources is deprecated as
an API. See https://setuptools.pypa.io/en/latest/pkg_resources.html. The pkg_resources package is slated for removal as
early as 2025-11-30. Refrain from using this package or pin to Setuptools<81.
  import pkg_resources
Did not use editable fallback
Installed C:\Users\User\caiman_data
```

Running the CaImAn Demo in VS Code

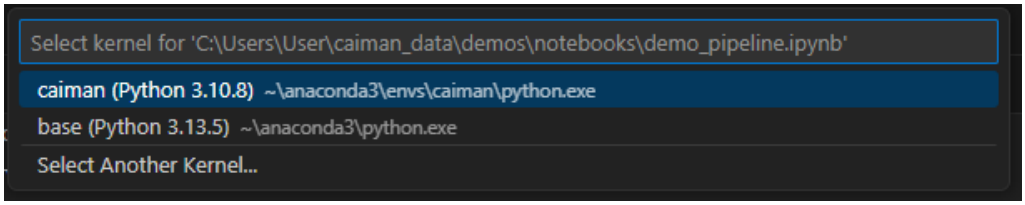
We will use VS Code to run the CaImAn demo notebook, to generate the demo data files that can be opened with Pluvianus.

- Download Visual Studio Code from: **https://code.visualstudio.com/**
- Install VS Code. Run VS Code, skip the tutorials.
- Open the following file from the caiman_data folder: `caiman_data\demos\notebooks\demo_pipeline.ipynb`
- Click **Run All** in the notebook.

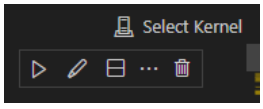
  

  This will trigger some configuration steps displayed in the command bar at the top:
  - **Installing necessary extensions:** When prompted, allow the installation of the Python and Jupyter extensions. Wait until their installation is complete, as indicated by the notification bubbles in the lower-right corner. This step can be performed also in the extensions tab.

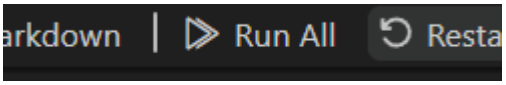
    
  - **Selecting environment/kernel:** Choose the caiman environment as the kernel:

    This step can be performed also by selecting kernel selector icon in the upper-right corner of the notebook.

  - If prompted for permission, allow both Public and Private network access.
- You can now run the entire notebook.

  - You can skip the videos appearing with the **q** button.
  - During execution, the demo will download data files (approx. 340 MB) to `C:\Users\<YourUser>\caiman_data\example_movies\` and

`process them into` temporary .mmap files (approx. 340 MB) into: `C:\Users\<YourUser>\caiman_data\temp\`

- Your output is the `demo_pipeline_results.hdf5`

Installing Pluvianus

Now we install and run Pluvianus from the distribution according to the README file.

- In the Anaconda Prompt opened in the previous step (if you happen to have Anaconfa Prompt restarted, have the caiman environment activated first with `conda activate caiman`), run the following command:
  `pip install pluvianus`
- To launch **Pluvianus**, run the following command:
  `pluvianus`

Opening the demo files

Continue according to the README online:
https://github.com/katonage/pluvianus#opening-demo-files