

PLS_Toolbox 9.0 Python Configuration

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Use this as a reference guide to set up Python in MATLAB to access extra methods that PLS_Toolbox has to offer using various Python libraries, including:

- scikit-learn (ANNDL, ANNDLDA, TSNE)
 - umap-learn (UMAP)
 - tensorflow (ANNDL, ANNDLDA)
- . For more information and troubleshooting, visit the [configuration wiki](#).

Outline of procedure:

- Download and installation of the Miniconda3 software
- Run `config_pyenv` in the MATLAB Command Window
- Notes:
 1. If this procedure is not followed, you will not have access to the methods listed above and errors will occur if methods are attempted to be accessed.
 2. MATLAB R2020b or higher is required
- Remove Python environment or Miniconda3

Miniconda3 Download and Installation

- Installation
 - Open a browser and navigate [here](#). Follow these instructions:
 - * Pick a link that explicitly states **Miniconda3** on whichever system you are running. See the annotated screenshot below:

Windows installers

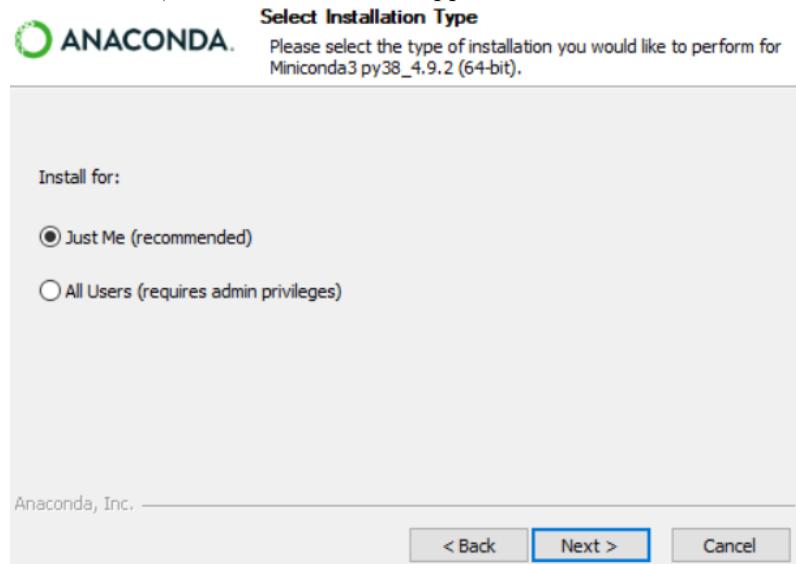
Windows			
Python version	Name	Size	SHA256 hash
Python 3.9	Miniconda3 Windows 64-bit	57.7 MiB	c3a43d6bc4c4fa92454dbfa636ccb859a045d875df602b31ae71b9e0c3fec2b8
	Miniconda3 Windows 32-bit	54.9 MiB	5045fb9dc4405dbba21054262b7d104ba61a8739c1a56038ccb0258f233ad646
Python 3.8	Miniconda3 Windows 64-bit	57.0 MiB	4fa22bba0497bab5b6608cb8843545372a99f5331c8120099ae1d803f627c61
	Miniconda3 Windows 32-bit	54.2 MiB	9c2ef76bae97246c85c206733ca30fd1feb8a4b3f90a2a511fea681ce7ebc661
Python 2.7	X Miniconda2 Windows 64-bit	54.1 MiB	6973025404832944e074bf02bda8c4594980eed4707bb51baa8fdbda4bf326c
	X Miniconda2 Windows 32-bit	47.7 MiB	c8049d26f8b6b954b57bcd4e99ad72d1ffa13f4a6b218e64e641504437b2617b

If you are running macOS, please select a pkg installer. See the annotated screenshot below.

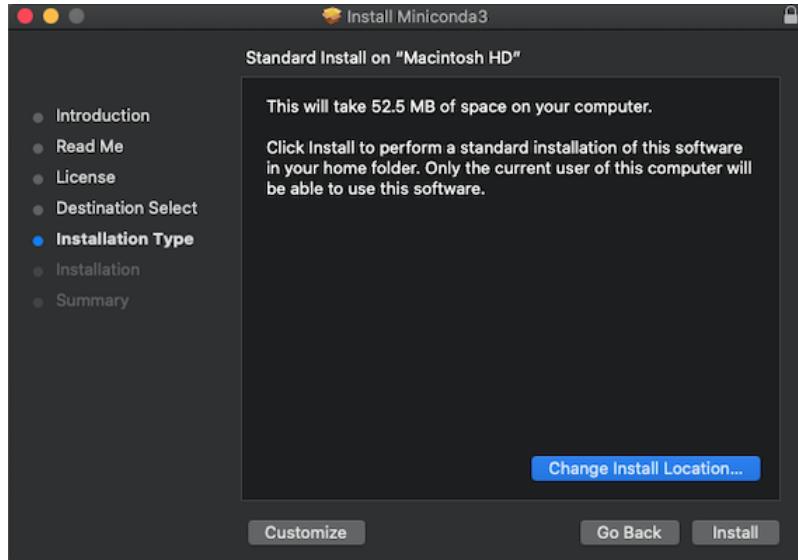
MacOSX installers

MacOSX			
Python version	Name	Size	SHA256 hash
Python 3.9	Miniconda3 Mac OSX 64-bit bash	42.2 MiB	b3bf77cbb81ee235ec6858146a2a84d20f8ecdeb614678030c39baacb5acbed1
	Miniconda3 Mac OSX 64-bit pkg	49.7 MiB	298ff80803817921a98e21db81d60f93b44afce67aec8ae492d289b13741bcffe
Python 3.8	Miniconda3 Mac OSX 64-bit bash	54.5 MiB	a9ea0afba55b5d872e01323d495b649eac8ff4ce2ea098fb4c357b6139fe6478
	Miniconda3 Mac OSX 64-bit pkg	62.0 MiB	b06f3bf3cffa9b53695c9c3b8da05bf583bc7047d45b0d74492f154d85e317fa
Python 2.7	Miniconda2 Mac OSX 64-bit bash	40.3 MiB	0e2961e20a2239c140766456388beba6630f0c869020d2bd1870c3d040980b45
	Miniconda2 Mac OSX 64-bit pkg	48.4 MiB	9ca4313e8162a939c7a5a4f48d657722594f8db9a98472803d63c3a7f66fa1da

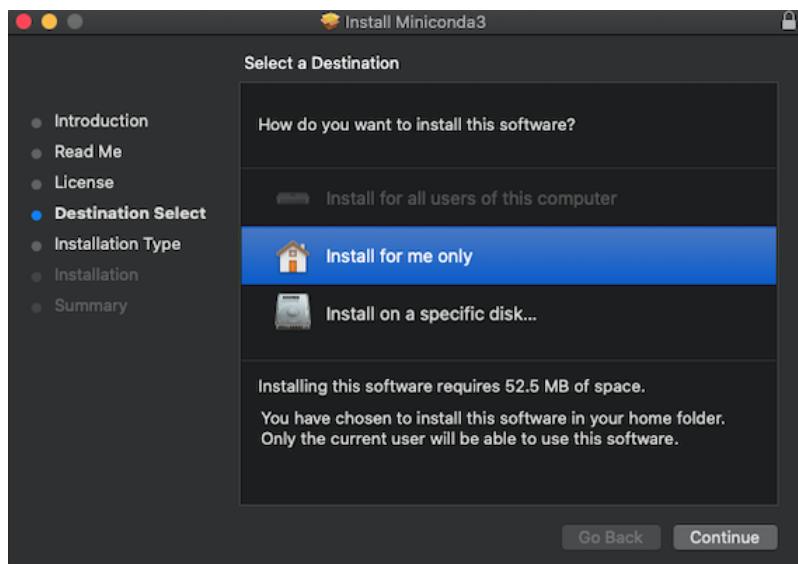
- * Open installer once it is been downloaded.
- * You may be asked to install for just the user like in the screenshot below, select this option.
 - For reference, here is how it would appear on a Windows machine:



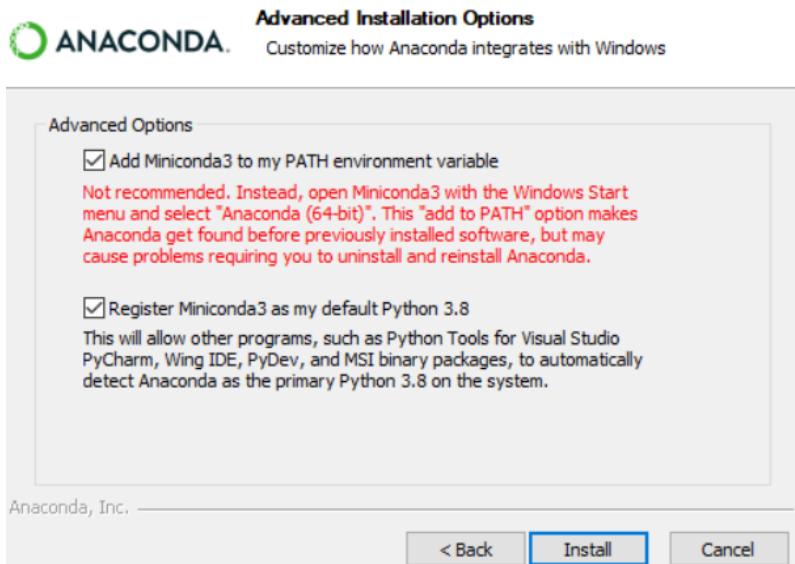
- For Mac machines under the **Installation Type** part, select the '**Change Install Location**' button like below:



Then click on the '**Install for me only**' button and click '**Continue**':



- * When asked where Miniconda3 should be installed, leave the default destination folder untouched.
- * If you are asked to add Miniconda3 to the system path, do so by checking the box like in the picture below.



* Hit **Install** to complete installation.

Configuration (config_pyenv function)

- If the user has PLS_Toolbox and has ran **evriinstall**, use the Command Window in MATLAB and type in

```
config_pyenv
```

and run. There will be a status returned saying that the setup was successful if there were no issues. Otherwise, you may be prompted to restart MATLAB and rerun the function. If further issues arise, please contact our helpdesk at helpdesk@eigenvalue.com.

Test Configuration

- One test to see if configuration was successful is to type **pyenv** in the MATLAB Command Window. Your result should look similar to this screenshot taken on a Windows machine:

```
>> pyenv

ans =

PythonEnvironment with properties:

    Version: "3.8"
    Executable: "C:\Users\seanroginskiuser\miniconda3\envs\pls_toolbox_windows_38\python.EXE"
    Library: "C:\Users\seanroginskiuser\miniconda3\envs\pls_toolbox_windows_38\python38.dll"
    Home: "C:\Users\seanroginskiuser\miniconda3\envs\pls_toolbox_windows_38"
    Status: NotLoaded
    ExecutionMode: InProcess
```

- For further testing with the Command Line, try out the following scripts that use Python methods that reside in PLS_Toolbox:

- anndldemo.m
- anndldademo.m

- tsnedemo.m
- umapdemo.m

Python Integration Removal

Open the MATLAB Command Window to perform the following.

- Virtual Environment Removal

- The function `undo_config_pyenv` can be used to remove your PLS_Toolbox Python virtual environment. Simply run

```
undo_config_pyenv
```

in the Command Window. A status will return whether or not the removal was successful or not. Some files may pose permission issues and deny access, one will have to manually remove these files to ensure a 100% removal.

- Miniconda3 Removal

- To remove Miniconda3 altogether, which deletes all virtual environments associated with Miniconda3, use the same function above with the 'all' parameter: `undo_config_pyenv('all')`. Again, some files may pose permission issues and deny access, one will have to manually remove these files to ensure a 100% removal.