

## Installing YOLOv8 environment on macOS with Apple Silicon (MPS) GPU:

### 1. Install Anaconda with Homebrew (<https://brew.sh>).

- a. If you need to install brew first the homebrew page above covers the following one-line install method.

```
> /bin/bash -c "$(curl -fsSL  
https://raw.githubusercontent.com/Homebrew/install/HEAD/install.s  
h)"
```

- b. When brew finishes it will prompt with the following next steps to add brew to the PATH:

```
> (echo; echo 'eval "$(/opt/homebrew/bin/brew shellenv)'"') >>  
/Users/rdzur/.bash_profile
```

```
> eval "$(/opt/homebrew/bin/brew shellenv)"
```

- c. At this point, you should be able to run brew commands such as:

```
> brew info
```

```
> brew doctor
```

- d. And brew install anaconda should now be possible for installation and wget (for data download).

```
> brew install --cask anaconda
```

```
> brew install wget
```

- e. If zsh is the default shell, the following commands will be required to add anaconda to the PATH or if the default shell is bash then add the PATH to .bash\_profile.

```
> echo 'export PATH="/opt/homebrew/anaconda3/bin:$PATH"' >>  
~/.zshrc
```

```
> source ~/.zshrc
```

Or

```
> echo 'export PATH="/opt/homebrew/anaconda3/bin:$PATH"' >>  
~/.bash_profile
```

```
> source ~/.bash_profile
```

- f. Anaconda commands should be available such as:

```
> conda list env
```

```
> conda init
```

- g. Close the terminal (shell) and reopen to see the base environment activated.

- 2. Use the terminal prompt on macOS to set up a new environment for YOLO with dependencies. And then activate that environment.

- a. Navigate to github repository with yaml and click code and copy link.

```
> cd /Users/<account>/Documents
```

```
> git clone https://github.com/fakurten94/Heightmap-Generation.git
```

```
> cd /Users/<account>/Documents/TEM/NC_P3_2015_Coleridge_SE
```

- b. It may be useful to check the ownership of the ~/.conda directory and set the ownership to the current <account>

```
> sudo chown -R <account> .conda
```

- c. An environment file (environment.yml) can be used to create the necessary environment packages.

```
> conda env create -n tem-env --file environment.yml -y
```

```
> conda activate tem-env
```

```
> conda list -n tem-env | grep numpy
```

- d. Check the numpy version if it is 2x it may be wise to uninstall and install an older version which may be more compatible with other library dependencies.

```
> pip uninstall numpy
```

```
> pip install numpy==1.26.4
```

- e. The next two libraries are necessary for TEM data preparation and prediction tasks.

```
> pip install ultralytics
```

```
> pip install rvt-py
```

```
> pip install fiona laspy[lazrs,laszip]
```

### 3. Test the environment

```
> python3
```

```
>> import rvt.default
```

```
>> import ultralytics
```