

- All materials for labs are in this GITHUB repository.
<https://github.com/RiverGumSecurity/AILabs.git>. Either download and unzip or use GIT to clone it. I suggest using GIT.

```
$ sudo apt install git
$ git clone https://github.com/RiverGumSecurity/AILabs.git
$ cd AILabs
```

- All data science (jupyter notebook) labs were developed with an Ubuntu 24.04 LTS distribution on a WSL2 based install, and cross tested under MacOS with an M3 based ARM system.
- Labs are highly dependent on "miniconda", and "poetry". Miniconda must be installed and initialized correctly before attempting any lab.
- There exists a shell script called "Install_PreRequisites.sh" that will attempt to install Miniconda and "gcc" in the Linux context. GCC itself is not necessarily required but was an older required in prior versions of the course. Manual installation steps for Miniconda is listed below.
- Miniconda installation on Ubuntu 24.04 LTS Linux

```
$ sudo apt install wget
$ wget https://repo.anaconda.com/miniconda/Miniconda3-latest-Linux-x86_64.sh
$ /bin/bash Miniconda3-latest-Linux-x86_64.sh
```

- Miniconda installation on MacOS, visit this URL:

<https://www.anaconda.com/docs/getting-started/miniconda/install>

- After installing Miniconda, it must be initialized. Use the one time command "**conda init**" or even better just logout and log back in again on your Ubuntu system or MacOS terminal. Double check that there are "conda" shell script lines added in your ".bashrc" or ".zshrc" if unsure.
- For EACH lab, you must use the setup script. Example for LAB01 is as follows:

```
$ cd $HOME/AILabs
$ source ./Lab01_Setup.sh
```

- Each of the lab setup scripts WILL use the "poetry" command to properly install Python dependencies for that specific lab. You should never need to use "pip install" or similar to install a dependency.
- Each of the lab setup scripts will use the "**conda activate**" command to activate the associated miniconda environment. Your terminal prompt should change to reflect this in parentheses. For example:

```
joff$ source ./Lab01_Setup.sh
... Stuff omitted ...
(lab01)joff$ which python
/home/joff/miniconda3/envs/lab01/bin/python
```

- One common issue seen is using the wrong Python interpreter after the setup script and associated "conda" environment is created. This is most likely caused by an incorrect "conda" environment installation. Check if the "conda" setup commands exist in .bashrc or .zshrc.
- If you run the lab setup script a second time, the conda environment from the first run is automatically destroyed and then re-created.
- If you think that the lab setup script is failing, in particular regarding poetry, then make sure to remove the "**poetry.lock**" file and re-run the setup. The "**poetry.lock**" file will be left in the lab sub-directory itself.
- In the cases of Lab04 and Lab05, the "git" command is used to clone another repository for both labs. The poetry tool will still be leveraged to install required dependencies of the repositories cloned.