Project environment setup instructions

The emotion recognition project requires the package managers Anaconda and Pip in order to install the correct versions of Pytorch, Numpy and Opencv. Anaconda creates virtual environments such that new package installations are isolated and do not affect existing packages. Anaconda environments can be activated with *conda activate [env name]* or deactivated with *conda deactivate*. Pip also installs packages isolated to the active conda environment. To view currently installed packages, use *conda list*

Pytorch can be installed with CUDA support, which allows the use of a Nvidia GPU to substantially speed up machine learning workloads. If you do not have a Nvidia GPU, do not worry, you can still complete this project, you will just need to use models with smaller numbers of parameters and be a little patient.

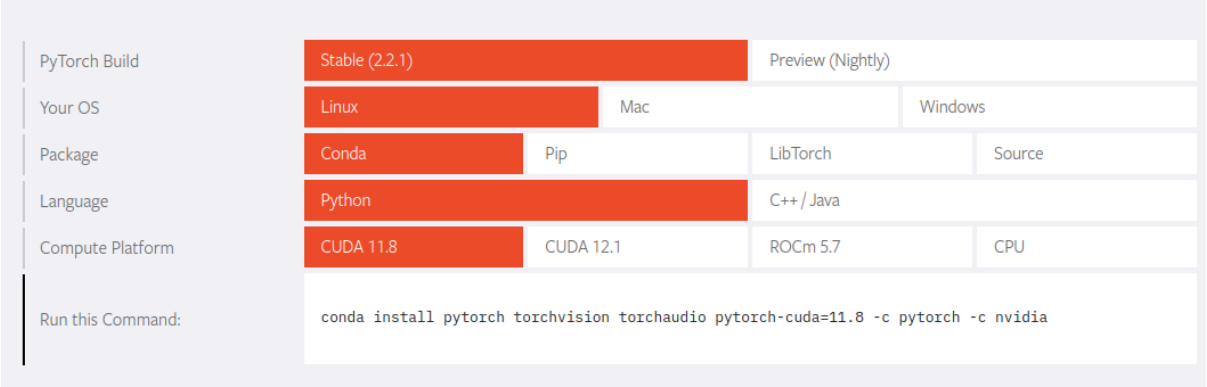
1. Install anaconda

a. Download for your operating system https://www.anaconda.com/download
b. Follow installation instructions. If you are on linux, you need to make the anaconda.sh file executable, then run "./anaconda.sh" in the terminal.

c. In the Anaconda prompt (windows) or a new terminal (linux/osx), create a new conda environment *conda create --name cs731 python=3.9*

d. Activate your environment *conda activate cs731*. **You will need to repeat this step every time you want to activate your environment.**

2. Install Pytorch



a. Navigate to https://pytorch.org/
b. Under the Install PyTorch section, select the *stable* build, the OS you are using, *Conda* for type of package and *Python* for type of language. If you have a Nvidia GPU, select *CUDA 11.8* for the compute platform, otherwise select *CPU*.
c. Copy and paste the command into your anaconda prompt/terminal. Ensure you are still in the cs731 environment. This will take some time.

3. Install remaining packages

a. In your cs731 environment, use pip to install the correct versions of opencv, ultralytics, numpy and other packges:

   pip install opencv-python==4.7.0.72
   pip install ultralytics
   pip install numpy==1.24.4
   pip install google-cloud-dialogflow
   pip install openai

4. Verify installation

a. In your conda environment, enter the following commands:
   python
   import torch

b. There should be no errors.
c. ONLY if you installed pytorch with CUDA, *torch.cuda.is_available()* should return True. Skip this step if you did not install with cuda or do not have an Nvidia GPU.
d. Type *exit()* to exit the python interpreter