PyTorch

Installing PyTorch can be a little different on the Jetson as there don't seem to be prebuilt wheels available on default channels. Prebuilt wheels can be obtained here: https://forums.developer.nvidia.com/t/pytorch-for-jetson-version-1-8-0-now-available/72048.

Installation

```
# Go to https://forums.developer.nvidia.com/t/pytorch-for-jetson-version-1-8-0-now-available/72048 to find the
wheel to download.
# The versions below (taken from link above) may work for you

sudo apt-get install python3-pip libopenblas-base libopenmpi-dev
pip3 install Cython

# For Jetson Xavier (with JetPack 4)
wget https://nvidia.box.com/shared/static/p57jwntv436lfrd78inwl7iml6p13fzh.whl -O torch-1.8.0-cp36-cp36m-
linux_aarch64.whl
pip3 install numpy torch-1.8.0-cp36-cp36m-linux_aarch64.whl

# For Jetson Orin (with JetPack 5.1.3):
wget https://developer.download.nvidia.cn/compute/redist/jp/v512/pytorch/torch-2.1.0a0+41361538.nv23.06-cp38-
cp38-linux_aarch64.whl -O torch-2.1.0a0+41361538.nv23.06-cp38-cp38-linux_aarch64.whl
pip3 install numpy torch-2.1.0a0+41361538.nv23.06-cp38-cp38-linux_aarch64.whl

# For Jetson Orin (with JetPack 5.0.2):
wget https://developer.download.nvidia.com/compute/redist/jp/v50/pytorch/torch-1.12.0a0+2c916ef.nv22.3-cp38-
cp38-linux_aarch64.whl -O  torch-1.12.0a0+2c916ef.nv22.3-cp38-cp38-linux_aarch64.whl
pip3 install numpy torch-1.12.0a0+2c916ef.nv22.3-cp38-cp38-linux_aarch64.whl
```

Try running "import torch" in a Python session

1. If you encounter the error, "OSError: libcurand.so.10: cannot open shared object file: No such file or directory" you may need to upgrade jetpack
2. To upgrade jetpack, sudo vi /etc/apt/sources.list.d/nvidia-l4t-apt-source.list
3. You should see lines like

    deb https://repo.download.nvidia.com/jetson/common r32 main
    deb https://repo.download.nvidia.com/jetson/<platform> r32 main
4. Replace r32 with r32.4

    deb https://repo.download.nvidia.com/jetson/common r32.4 main
    deb https://repo.download.nvidia.com/jetson/t194 r32.4 main
5. Then sudo apt-get update, sudo apt-get dist-upgrade

Installing torchvision

```
sudo apt-get install libjpeg-dev zlib1g-dev libpython3-dev libavcodec-dev libavformat-dev libswscale-dev

cd ~/workspace/programs

# For Jetson Xavier:
git clone --branch v0.9.0 https://github.com/pytorch/vision torchvision
cd torchvision
export BUILD_VERSION=0.9.0  # where 0.x.0 is the torchvision version

# For Jetson Orin (with JetPack 5.1.3):
git clone --branch v0.16.2 https://github.com/pytorch/vision torchvision
cd torchvision
export BUILD_VERSION=0.16.2  # where 0.x.0 is the torchvision version

# For Jetson Orin (with JetPack 5.0.2):
# the torchvision repository was cloned without any branch specification and built at the following checkout
# git checkout: da3794e90c (Fri Jun 17 16:48:47 2022)
git clone --branch v0.9.0 https://github.com/pytorch/vision torchvision
cd torchvision
git checkout da3794e90c

python3 setup.py install --user
cd ../  # attempting to load torchvision from build dir will result in import error
```

Installing PyTorch-Encoding

Note for Orin: it looks like PyTorch-Encoding was not installed and not needed

1. sudo apt-get install python3-scipy
2. pip3 install tqdm nose
3. git clone https://github.com/zhanghang1989/PyTorch-Encoding.git #Note that git may not work directly on the Jetson due to SSL issues, so you might have to clone it somewhere else and scp it over
4. cd PyTorch-Encoding
5. python setup.py install # can run with sudo if you like
   a. If run with sudo, then you'll need to add yourself to the staff group, sudo usermod -a -G staff jetson
   b. Then logoff and log back on to allow the group change to take effect
   c. sudo chmod -R g+w <installed_torch_encoding_dir> # this directory will likely be somewhere like /usr/local/lib/python3.6/dist_packages