Instructions for CADE Lab

+ Access CADE machine remotely:

1) Via Terminal:

```
ssh -Y user_name@machine_name.eng.utah.edu
```

The naming convention for "machine_name" is: lab1-A, where A is a number from 1-35. More detailed instructions are available here.

Note: If you plan to access CADE machine with a Windows OS machine, *PuTTY ssh client* provides a much cleaner environment compared to *Command Prompt*. A simple tutorial on how to install and configure *PuTTY ssh client* can be found here.

2) Via NoMachine:

Follow these instructions.

+ Install and configure Pytorch for Jupyter Notebook: (this step only needs to be done once)

```
bash
python3 -m virtualenv env_dir_name                #create virtualenv
source env_dir_name/bin/activate                  #activate the virtualenv
pip install torch torchvision                     #install pytorch
pip install jupyter                               #install jupyter notebook
ipython kernel install --name=env_dir_name --user       #configure kernel
```

+ Run Jupyter Notebook:

1) Activate virtualenv (if it hasn't been done yet):

```
bash
source env_dir_name/bin/activate
```

2) Start Jupyter Notebook:

a) Via Terminal:

```
jupyter notebook --no-browser --port=8889
```

- On another terminal on your local machine, run:

```
ssh username@machine.eng.utah.edu -L 8889:localhost:8889 -N
```

- Copy the URL http://localhost:8889/?token=<token>
- Open a web browser on your local machine and paste the URL
- Create a new notebook or open an existing notebook
- Change kernel on jupyter notebook menu bar by select:

Kernel > Change kernel > *env_dir_name*

b) Via NoMachine:

- Open a terminal and run:

```
jupyter notebook
```

- Create a new notebook or open an existing notebook
- Change kernel on jupyter notebook menu bar by select:

Kernel > Change kernel > *env_dir_name*

3) Verify Pytorch and Jupyter Notebook Installation (Optional):

- Open Jupyter Notebook using the steps from section 2 above.
- Run *test_run.ipynb* (the file can be downloaded from Canvas)

+ Notes:

- Please don't use lab2 since its GPU is not compatible with PyTorch.
- Processes will be canceled after 8 hours of computation on CADE machines, so save your model while training to be able to recover it later. The timer starts at the opening of a notebook.
- Files can be sent and received from the CADE labs using *scp* command (examples on how to use in https://www.garron.me/en/articles/scp.html)