Getting Started on JupyterHub GPUs

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1. Request NERSC access to a GPU node on JupyterHub:
   - Link to JupyterHub: https://jupyter.nersc.gov/
   - Under the NERSC Help Portal, go to 'Service Catalog → Request Forms → GPU node access' and fill out the form to get GPU access
2. Create a custom Conda environment and kernel (on Cori terminal/command line):

```
$ module load pytorch/v1.5.0-gpu
$ conda create -n pytorch_gpu_env python=3.7 ipykernel
    numpy scipy
$ source activate pytorch_gpu_env
$ python -m ipykernel install --user --name pytorch_gpu_env
    --display-name pytorch_gpu_kernel
```

   - More information here about creating custom Conda environments and kernels here: https://www.nersc.gov/assets/Uploads/13-Using-Jupyter-20200616.pdf
3. Install necessary packages to run the MNIST and waveform convolutional autoencoder Jupyter notebooks:

```
$ pip install torch pytorch_model_summary gzip-reader
    pickle5 pathlib requests matplotlib tsnecuda
```

   - Can also install pygama inside this Conda environment with:

```
$ git clone https://github.com/legend-exp/pygama.git
$ pip install -e <path_to_local_pygama_directory>
```

4. Once you have access to a GPU node, log into JupyterHub and start a "Shared GPU Node." Make sure the Jupyter notebooks are in some directory within Cori and open them. Switch the kernel (on the upper right section of the screen) to "pytorch_gpu_kernel" and run the notebook cells.