Uninstall existing anaconda

You might prefer miniconda (a small size version of anaconda) over anaconda
In this case, you need to uninstall anaconda first.
Please refer to : https://docs.anaconda.com/anaconda/install/uninstall/

$rm -rf ~/anaconda3
$rm -rf ~/.condarc ~/.conda ~/.continuum

Install miniconda (on RHEL 8)

Download miniconda
https://docs.conda.io/en/latest/miniconda.html

Install for multi-user
https://docs.anaconda.com/anaconda/install/multi-user
$chmod +x Miniconda3-latest-Linux-x86_64.sh

Install with sudo
$sudo bash Miniconda3-latest-Linux-x86_64.sh

During installation, choose “/opt/miniconda3”
[/root/miniconda3] >>> /opt/miniconda3

```
installation finished.
Do you wish the installer to initialize Miniconda3
by running conda init? [yes|no]
[no] >>> yes
no change     /opt/miniconda3/condabin/conda
no change     /opt/miniconda3/bin/conda
no change     /opt/miniconda3/bin/conda-env
no change     /opt/miniconda3/bin/activate
no change     /opt/miniconda3/bin/deactivate
no change     /opt/miniconda3/etc/profile.d/conda.sh
no change     /opt/miniconda3/etc/fish/conf.d/conda.fish
no change     /opt/miniconda3/shell/condabin/Conda.psm1
no change     /opt/miniconda3/shell/condabin/conda-hook.ps1
no change     /opt/miniconda3/lib/python3.9/site-packages/xontrib/conda.xsh
no change     /opt/miniconda3/etc/profile.d/conda.csh
modified      /root/.bashrc

==> For changes to take effect, close and re-open your current shell. <==

If you'd prefer that conda's base environment not be activated on startup,
   set the auto_activate_base parameter to false:

conda config --set auto_activate_base false
```

check available groups
$cat /etc/group

add conda group where you can add user to use miniconda
$sudo groupadd conda
$cat /etc/group | grep conda

Change the group ownership to “conda” on the entire directory where Anaconda is installed [1]
$sudo chgrp -R conda /opt/miniconda3

Set read and write permission for the owner, root, and the “conda” only:
$sudo chmod 770 -R /opt/miniconda3/

Add ***TargetUser*** to a group. Users added to the “conda” group now have the ability to access Anaconda, install packages, and create environments.
$sudo usermod -a -G conda <***TargetUser***>

Log out and log back.

Edit ~/.bashrc, add the path for miniconda
export PATH=$PATH:/opt/miniconda3/bin

$source ~/.bashrc

$ conda --version
conda 4.10.3

Set up deeplearning env

Create an env for deep learning work
with python 3.9
$conda create -n deeplearning python=3.9

```
#
# To activate this environment, use
#
#     $ conda activate deeplearning
#
# To deactivate an active environment, use
#
#     $ conda deactivate
```

To check the env list,
$conda env list

To remove
$conda remove --name deeplearning --all

To list the packages for the deepleaning env,
$conda list -n deeplearning

Edit ~/.bashrc, type in the following code

```
if [ -f "/opt/miniconda3/etc/profile.d/conda.sh" ]; then
    . "/opt/miniconda3/etc/profile.d/conda.sh"
fi
export PATH=$PATH:/opt/miniconda3/bin
```

Install tensorflow gpu
In the deeplearning env, run
$conda install pip
$pip install
https://storage.googleapis.com/tensorflow/linux/gpu/tensorflow_gpu-2.7.0-cp39-cp39-manylinux2010_x86_64.whl

For different whl file, check the following link
https://www.tensorflow.org/install/pip#conda

(TBD)

Tensorflow-gpu-2.4.1 : cudnn=7.6.5, cudatoolkit-10.1

To check the installed version, run the following script
/debug/ai_recon/check_version.py

You need to have an nvidia developer account and download the cudnn libraries as indicated below.

```
vctuser@ctl685pxrc:[~]$ conda list -n deeplearning  | grep -i cudnn
cudnn                     7.6.5                cuda10.1_0
```

Unzip the compressed files, copy files to the /usr/local/cuda-10.1/include and lib64
$sudo scp -rp cuda/include/cudnn.h /usr/local/cuda-10.1/include/
$sudo scp -rp cuda/lib64/libcudnn* /usr/local/cuda-10.1/lib64/

Make sure you have soft link /usr/local/cuda pointing to /usr/local/cuda-10.1/

Also, in your ~/.bashrc file, export cuda libraries as shown below.

export PATH=$PATH:/usr/local/cuda/bin
export LD_LIBRARY_PATH=$LD_LIBRARY_PATH:/usr/local/cuda/lib64

Install other packages

In the deeplearning env, install other packages for ai recon work.
$conda install -c conda-forge pydicom
$conda install matplotlib scikit-image scikit-learn

References:
[1] https://docs.anaconda.com/anaconda/install/multi-user/
[2]