**Workflow and solutions to implement Optimized UNet**

**Here is the workflow I tried to implement the Optimized UNet. I write this workflow according to my blurred memory. If it is incomplete or has wrong information, please insist on your own ideas. Hope this document can help you anyway.**

**Btw, thanks Sebquet, who told me I can delete the related codes if they are relying on some difficult-to-install packages.**

**1. Unzip the data** (commands in terminal)

For me, I just unzip the “RSNA\_ASNR\_MICCAI\_BraTS2021\_TrainingData\_16July2021.zip” and rename the folder as “data”. In “data”, I splitted the 1251 cases into two folders: ‘BraTS2021\_train’ and ‘BraTS2021\_val’.

**2. Running data preprocessing** (commands in terminal)

**2.1 data prepare**

I built a data prepare script according to author’s notebook (BraTS2021.ipynb), please see the attached “prepare\_dataset.py”. If you want to use it, please remember to change the path.

**2.2. data preprocessing**

running python3 preprocess.py --task 11 --ohe --exec\_mode training

running python3 preprocess.py --task 12 --ohe --exec\_mode test

Remember to change to path in “preprocess.py”

**3. prepare for training** (commands in terminal)

3.1 You may need to install packages according to the “requirements.txt” provided by the authors.

Also, you need to install “monai” by pip.

3.2 change “data” and “results” path in “args.py” so that it can access your data and save results

3.2 In “utils.utils.py”, modify the “get\_config\_file” function so that it can build correct path to your data. As well as other config-related functions.

3.3 In “utils.utils.py”, delete “set\_granularity” function, as well as the related usage in “main.py”.

3.4 In “nn\_unet.nn\_unet.py”, comment the “apex”, and change the optimizers to pytorch’s optimizers.

**4. Training (submit bash script)**

If everything works well, we can train the model with the following bash script. Here I use apply to use regular GPU nodes instead our reserved nodes.

#!/bin/bash

#SBATCH --account def-training-wa

#SBATCH --gpus-per-node=t4:1

#SBATCH --cpus-per-task=4

#SBATCH --mem=24G

#SBATCH --time=16:00:00

module load python/3.9

source /home/guest182/hackathon/bin/activate

python main.py --brats --deep\_supervision --depth 6 --filters 64 96 128 192 256 384 512 --min\_fmap 2 --scheduler --learning\_rate 0.0003 --epochs 30 --fold 0 --amp --gpus 1 --task 11 --save\_ckpt