

Team 36 Code Reproduction Document

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1 Segmentation Task

1.1 Subsection Training

For the image→mask model, contact map10046@nyu.edu for clarification. To train the model, navigate to

```
./
├── unet_parts.py
├── unet_model.py
├── mask_model.ipynb
└── Dataset_Student/train/
```

Figure 1: Document Structure for Training Segmentation Task

mask_model.py and run the cells sequentially until the third cell. In Figure 2, the cell to change the training folder directory is provided.

```
[ ] os.chdir("/content/drive/MyDrive/DL1008_Final Competition")
    data_folder = os.path.join("/content/drive/MyDrive/DL1008_Final Competition/Dataset_Student/train")
    print(data_folder)
```

Figure 2: Cell to change data directory

Continue running sequentially. Training in cell after dataset constructed. First epoch took about 2 hours on V100 but the rest were quicker. Sometimes crashes so I restarted the notebook once every 10 epochs, but the saved state is local directory and named mask_model_stop.pth. Best model saved to best_mask_model.pth, included is our renamed best of 89valjac.pth.

1.2 Segmentation Inference

This generates the 11 segmentation masks from the hidden set. In figure 3 we show the directory structure for this notebook. In the above, change 89valjac.pth to best_mask_model.pth if you rerun with the original

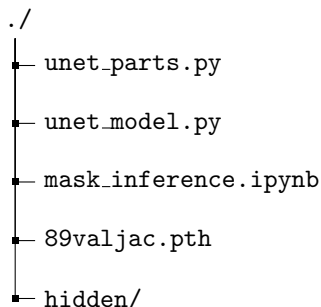


Figure 3: Document Structure for Segmentation Inference

naming. Figure 4 shows the cell to change to access the hidden directory. The notebook can be run

```
[ ] os.chdir("/content/drive/MyDrive/DL1008_Final Competition")
    data_folder = os.path.join("/content/drive/MyDrive/DL1008_Final Competition/hidden")
    print(data_folder)

/content/drive/MyDrive/DL1008_Final Competition/hidden
```

Figure 4: Hidden Directory for Segmentation Inference

sequentially and it saves the mask.pt file in the folder corresponding to that video from the hidden set. It originally ran on cpu but we tested and it should run on gpu as well.

2 Prediction Task

For the mask prediction model, kindly contact kl3108@nyu.edu if you run into any issues.

- To train the model, one can directly run trainPredictModel_seg.py. Please make sure that the current directory contains folders with name 'train' and 'val' that includes the training and validation dataset.
- The best model is saved as Sim_VP_best_model_segs_new_loss.9.pth.
- You might want to change the path to your current path in order to load the model/save the output properly.
- Evaluation of this mask prediction model could be find in the section below.

3 Prediction Generation & Evaluation Task

For generating the model prediction and evaluating the mask prediction model, kindly contact bz2428@nyu.edu if you run into any issues.

- To evaluate the prediction model on validation, please refer to Entropy_Evaluation.ipynb.
- To generate final model prediction on the hidden dataset saved from the previous step, please refer to Hidden_Generation.ipynb.
- Before running Hidden_Generation.ipynb, please make sure the hidden masks have already been generated in the first segmentation task, so there exists a folder with name 'hidden.'
- You might want to change the path to your current path in order to load the model/data and save the output properly.