Self-Attentive Spatial Adaptive Normalization for Cross-Modality Domain Adaptation

Requirements

- python >=3.6
- pytorch >=1.6
- tensorflow == 1.15
- medpy
- kornia

Training

- To launch the training please run `train.py`. The hyperparameters can be updated in `def main` function as a dictionary.
- For faster convergence, please pretrain the attention module for the domain whose segmenation labels are available, by running `python train_segmentation.py attention_mr`
- For training the upper bount U-Net on MRI modality, use the following command - `python train_segmentation.py mr`
- To evaluate the trained model, please run `python run_evaluation.py sasan ct` for evaluating the performance of **MRI to CT** domain adaptation. For the other direction **CT to MRI**, run `python run_evaluation.py sasan mr`.

Pre-trained models, datasets, code:

- Link to our pre-trained models on Whole Heart Multimodal dataset and code.
- Link to Whole Heart Multimodal dataset pre-processed training tf_record files can be found here. The test mr data is available here and test ct data is available here

Data preprocessing

- To convert the tf_records training data to `.npy` format please use the script `convert_tfrecords.py <modality>`, where `<modality>` is either `mr` or `ct`.