

Towards Cross-modality Medical Image Segmentation with Online Mutual Knowledge Distillation

Milestone 1b Presentation

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Problem reminder

Task

Our goal in this segmentation task is annotating seven cardiac substructures on CT (computed tomography) scans. We also have annotated MRI images.

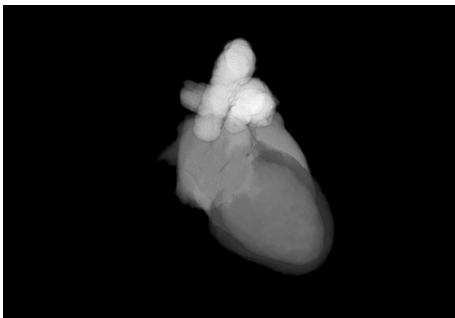


Figure: Label

The composed model

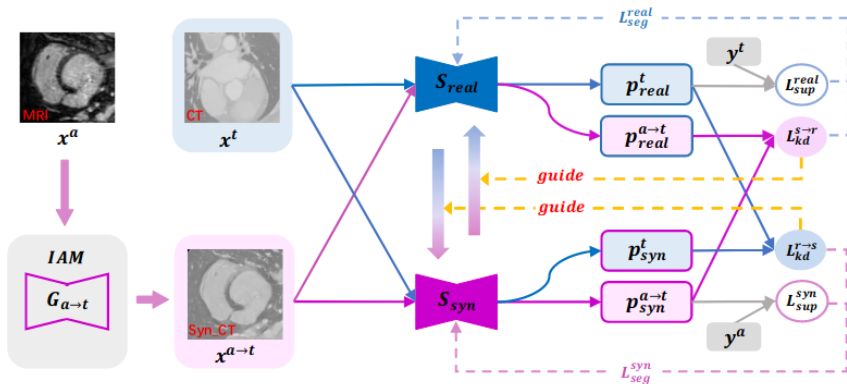
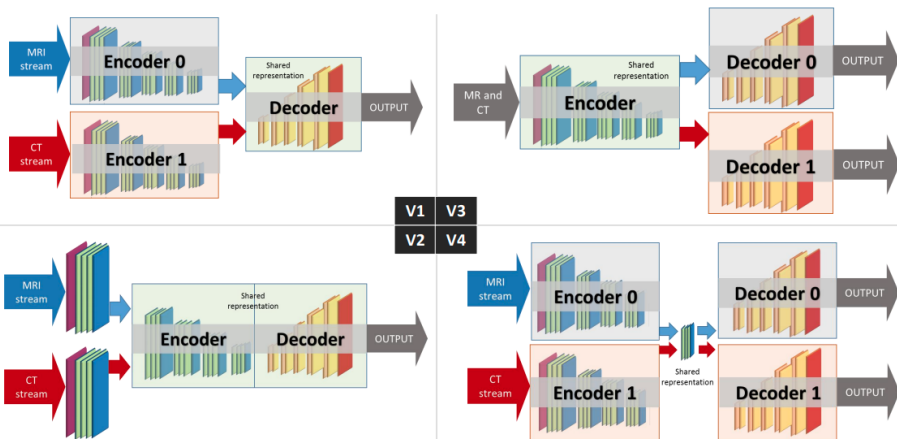


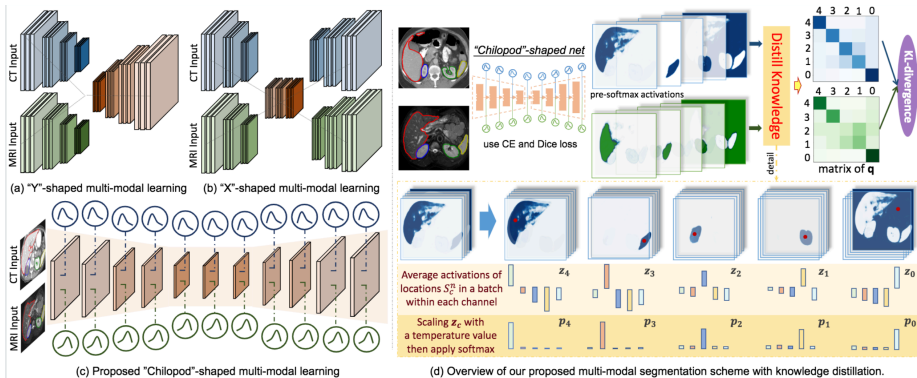
Figure: The architecture

Literature

Multi-Modal Learning from Unpaired Images: Application to Multi-Organ Segmentation in CT and MRI



Unpaired Multi-modal Segmentation via Knowledge Distillation

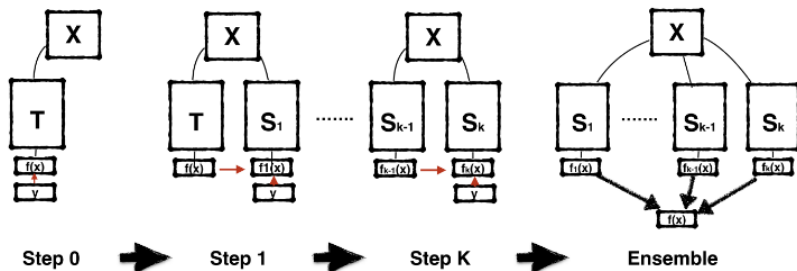


Unpaired image-to-image translation using cycle-consistent adversarial networks.

Covered last week

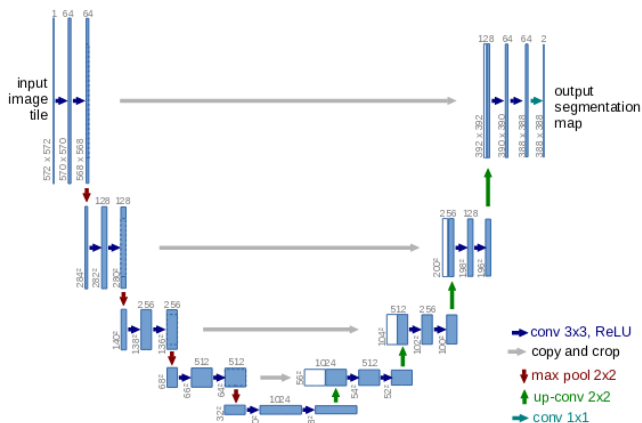
[2018] Furlanello, T.; Lipton, Z. C.; Tschannen, M.; Itti, L.; and Anandkumar, A. 2018. Born again neural networks. arXiv preprint arXiv:1805.04770

<https://arxiv.org/pdf/1805.04770.pdf>



[2018] Ronneberger, R.; Fischer, P.; Brox, T.; U-Net: Convolutional Networks for Biomedical Image Segmentation

<https://arxiv.org/abs/1505.04597>



Thank you!