Enhancing New Multiple Sclerosis Lesion Segmentation via Self-supervised Pre-training and Synthetic Lesion Integration - Supplementary Material

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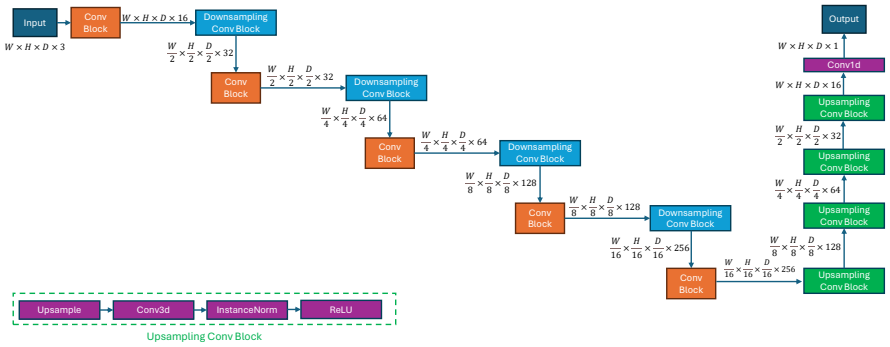

Fig. 1. Diagram of VNet model modified for self-supervised pre-training. The last encoder block was followed by four upsampling blocks before the final convolution.

Table 1. Five-fold cross-validation results for different α values. The α value represents the contribution of boundary loss for new lesion segmentation losses Ls_1 and Ls_2.

Boundary loss coefficient	**Dice**(%) ↑	**HD**(mm) ↓	**F1**(%) ↑
$\alpha = 5$	48.35±8.29	60.32±9.63	47.76±8.98
$\alpha = 10$	**56.15±7.06**	**37.13±13.29**	**56.69±9.12**
$\alpha = 20$	47.81±9.11	58.73±15.57	46.13±7.71

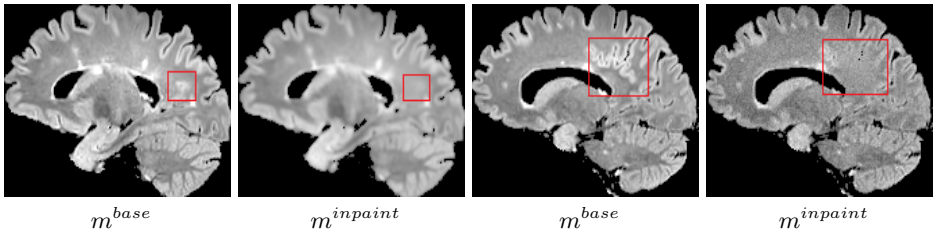

Fig. 2. Additional examples of inpainting for two different MRI scans.

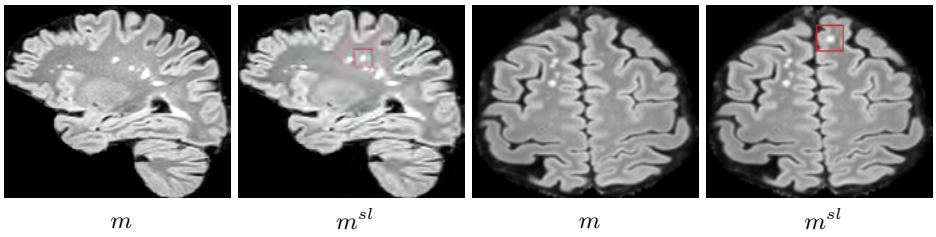

Fig. 3. Additional examples of adding synthetic lesions into two different MRI scans.

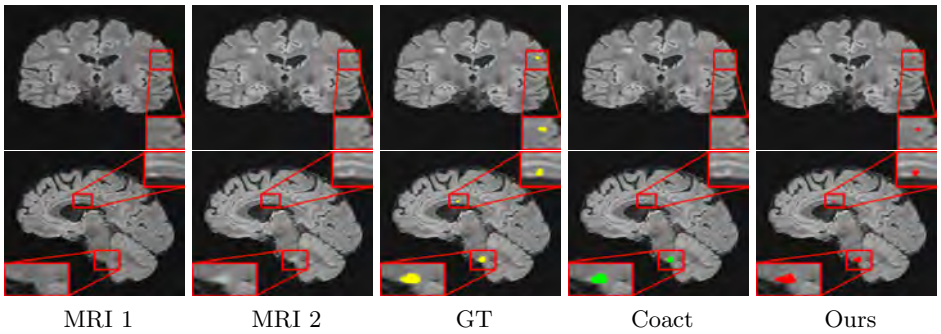

Fig. 4. Additional comparative visualization of predictions by the proposed model and Coact. GT: Ground Truth