Joint EM Image Denoising and Segmentation with Instance-aware Interaction

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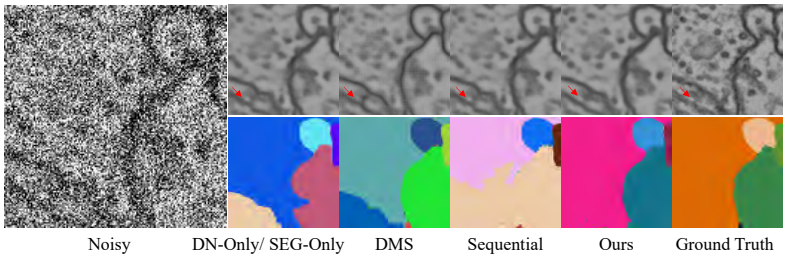

Fig. 1: Visual comparisons on CREMI-C dataset. Our method enables better preservation of cellular details. Furthermore, our segmentation result demonstrates higher structural precision.

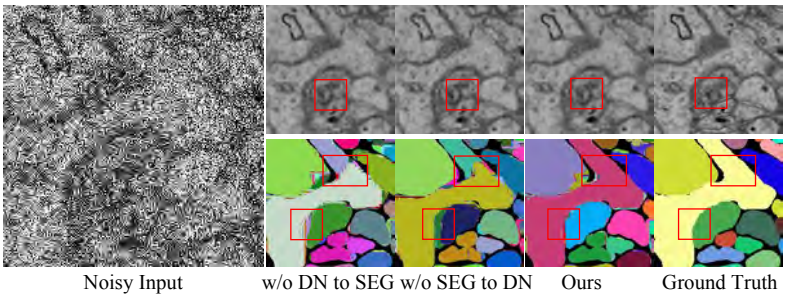

Fig. 2: Ablation results investigating the effectiveness of mutual benefit from interaction in our framework. Without denoising network(w/o DN to SEG) or without fusion network(w/o SEG to DN), both the denoising performance and segmentation performance would decrease. This demonstrates the rationality of our instance-aware interaction paradigm.

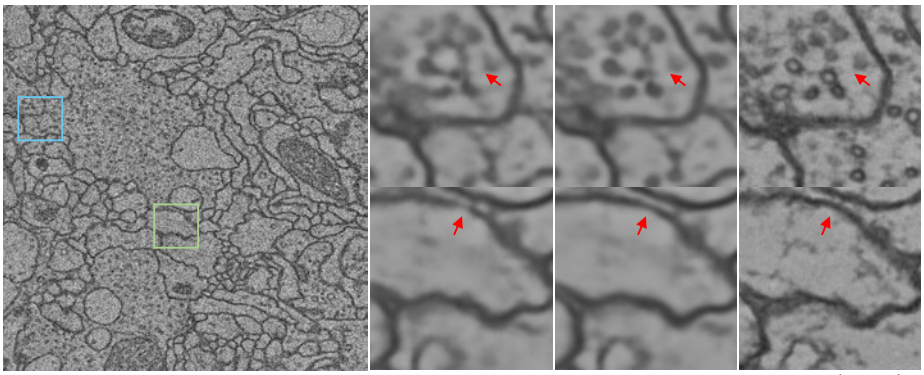

Fig. 3: **Additional qualitative comparisons on the CREMI-C dataset.** From the upper row, it is evident that our method preserves the structure of vesicles more effectively. The lower row demonstrates that our method, benefiting from the segmentation prior, better maintains the continuity of cell boundaries.

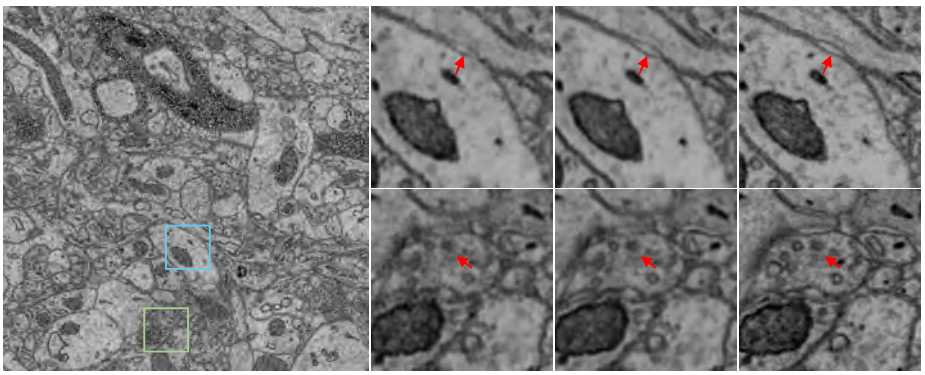

Fig. 4: **Visual comparison between denoising result on AC4 dataset with film noise.** Our method demonstrates superior performance over the best baseline, achieving enhanced preservation of structural integrity. This demonstrates the versatility of our method across different noise conditions.