Anatomical Three-Dimensional Style Transfer Enabling Efficient Federated Learning with Extremely Low Communication Costs
Supplementary Materials

1. Detailed information about hyperparameters

The training and testing batch sizes are set to four and two respectively on four NVIDIA V100 GPU. Regarding BigAug implementation, we added Gaussian noise and changed the scale, zoom, rotation, contrast, offset, and smoothness of each volume randomly.

2. ASD scores in the in-federation setting

In the main paper, due to space constraints, we included the ASD scores for the out-of-federation setting. Here, we present the ASD accuracy for the in-federation setting in Tab 1. It can be observed that the proposed method outperforms existing baselines across various organs and communication settings. Additionally, in settings where communication cost is restricted, existing methods often show unstable accuracy and fail to converge during training for smaller and more difficult-to-identify organs. In contrast, the proposed method consistently achieves high accuracy.

Table 1. ASD scores in the in-federation setting.

Model	# Rounds	ASD					
		Liver	Kidney	Pancreas	Spleen	Gallbladder	Global
FedAvg [2]	400	**1.80**	**0.91**	1.75	1.14	1.23	1.36
	5	5.51	4.07	34.74	3.28	5.42	10.61
MENU-Net [3]	400	2.03	1.03	1.67	1.15	1.11	1.40
	5	4.98	3.28	4.97	161.98	**2.22**	35.49
MENU-Net + BigAug [3,4]	400	2.52	1.26	**1.66**	1.60	2.24	1.86
	5	3.02	4.81	10.83	**2.43**	3.21	4.86
MENU-Net + FedDG [1]	400	2.30	0.96	1.81	0.81	1.24	1.43
	5	3.62	6.97	2.60	17.50	9.52	8.04
Ours	400	1.94	1.03	1.84	**0.76**	**1.05**	**1.32**
	5	**2.84**	**1.56**	**2.93**	7.69	2.75	**3.55**

References

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