(a) Lung artery slice   (b) GT   (c) WNet

(d) nnUNet   (e) FANN   (f) Ours

Fig. 6: Comparison with other state-of-the-art methods on PARSE22 lung artery dataset. Light red color: true positive. Light green color: false positive. Light blue color: false negative.
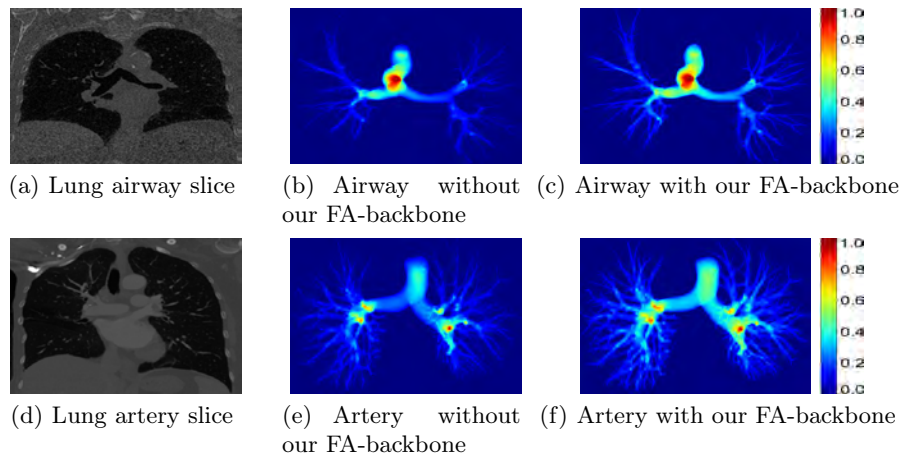

(a) Lung airway slice   (b) Airway without our FA-backbone   (c) Airway with our FA-backbone

(d) Lung artery slice   (e) Artery without our FA-backbone   (f) Artery with our FA-backbone

Fig. 7: Visualization with the proposed fuzzy attention-based transformer-like backbone or not on lung organ datasets.

(a) Lung artery slice (b) Without border rendering (c) With border rendering
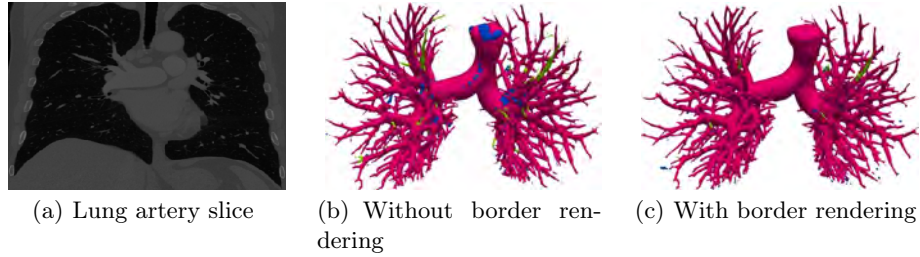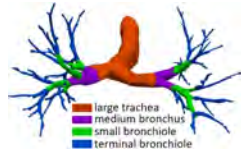
Fig. 8: Comparison with border rendering modules or not on PARSE22 dataset. Light red color: true positive. Light green color: false positive. Light blue color: false negative.

Table 3: Ablation studies of the proposed modules on Lung fibrosis dataset. BL: reproduced FANN. FA: fuzzy attention-based transformer-like backbone. GLCF: **g**lobal-**l**ocal **c**ube-tree **f**usion. △CCFs↑: the difference of adjacent two rows.

Proposed modules			Lung fibrosis						
BL	FA	GLCF	IoU ↑	Precision ↑	DLR ↑	DBR ↑	AMR ↓	CCFs ↑	△CCFs ↑
√	–	–	82.52/4.36	88.90/3.82	79.41/8.22	73.90/9.85	7.79/2.46	81.13/5.34	—
√	√	–	83.35/4.11	89.29/3.62	83.44/7.86	78.02/9.41	7.32/2.73	83.37/4.42	2.24/-0.92
√	√	√	83.81/4.64	89.87/4.12	85.10/8.58	80.01/10.17	7.10/2.33	84.39/5.58	1.02/1.16

Table 4: The efficacy of proposed module on border rendering on the pathological dataset AeroPath. △: the difference of adjacent two rows.

without GLCF	with GLCF	Accuracy	△Accuracy
√	–	71.63/16.12	–
–	√	76.35/16.46	4.72/0.34

Fig. 9: Varied branches.

Proposed modules			Branch sizes				
BL	FA	GLCF	Terminal	Small	Medium	Trachea	Average
√	–	–	86.63	91.78	91.98	95.77	89.11
√	√	–	88.43	93.03	93.63	94.74	90.70
√	√	√	89.11	95.05	95.65	97.83	91.67

Table 5: The DBR without standard deviation for varied branches on AeroPath dataset.