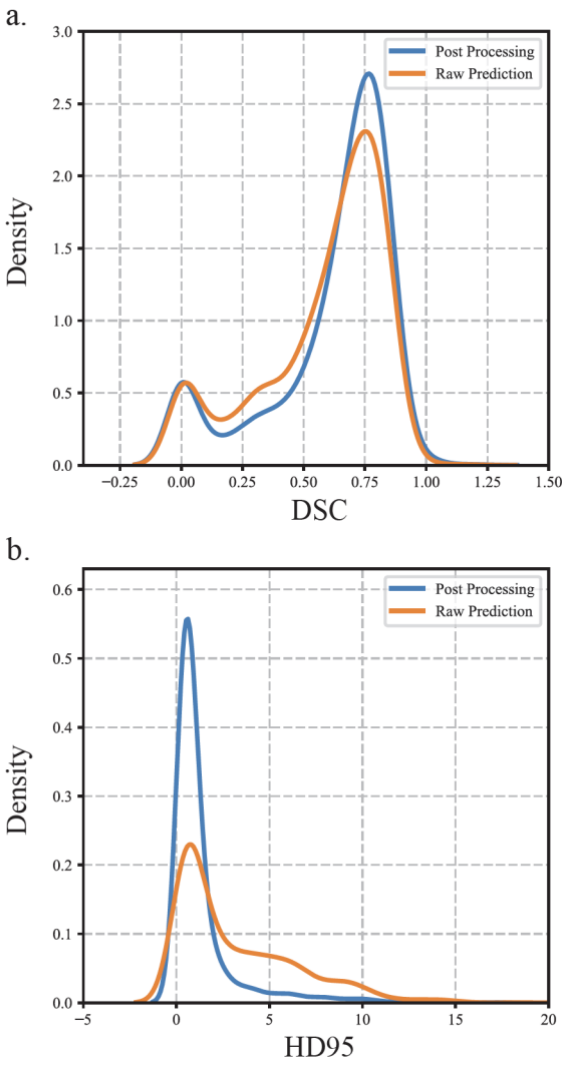
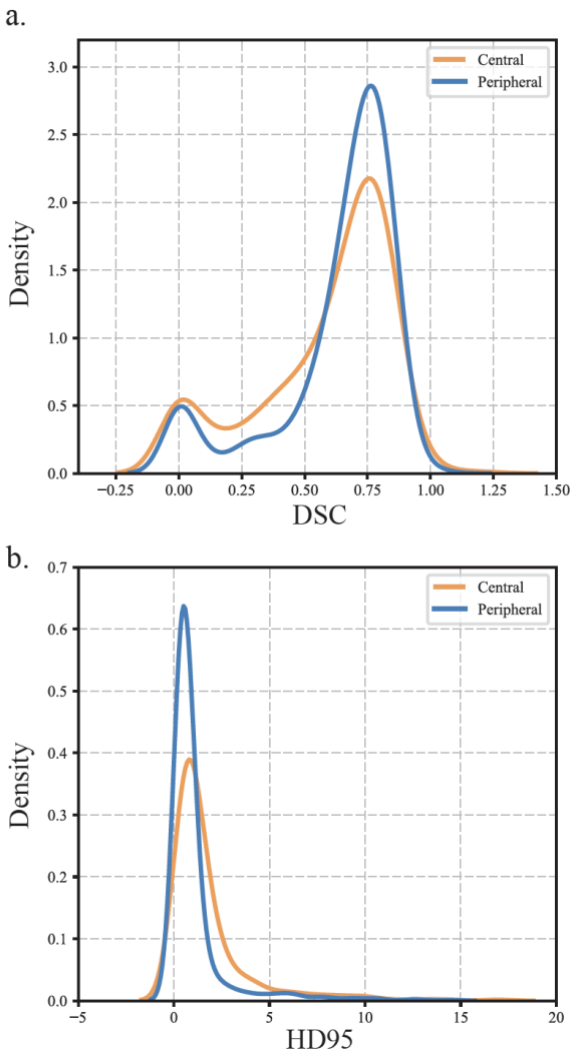
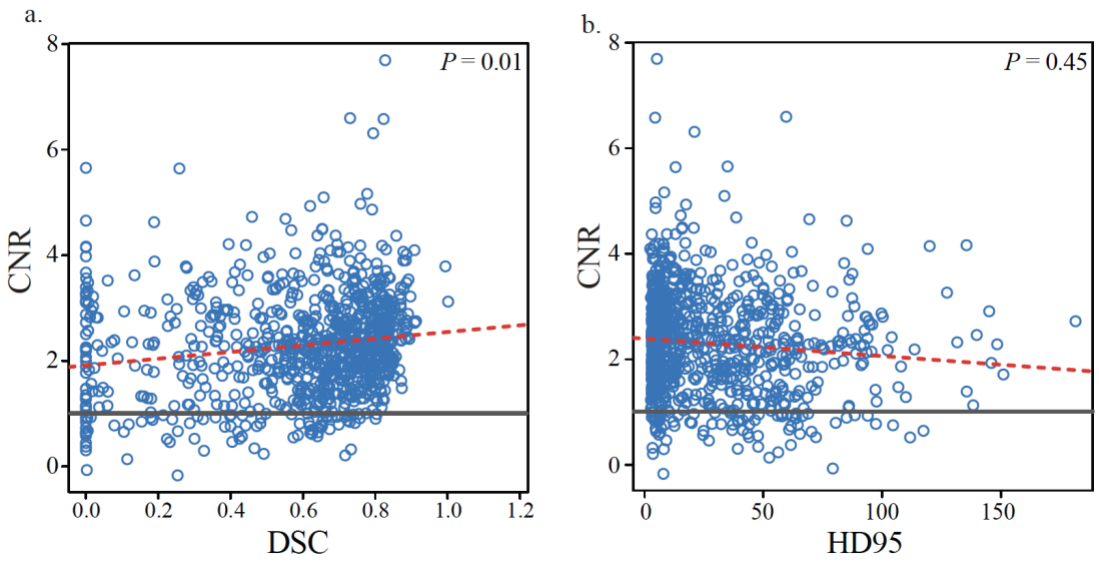
SUPPLEMENTARY FIGURES



Supplementary Figure 1. Post-processing enhanced segmentation performance by increasing overlap accuracy (DSC) and reduced boundary discrepancies (HD95). (a) Density plot of the (a) DSC and (b) HD95 for post-processed (blue) and raw prediction (orange) segmentations. Internal test and independent study data were used for these analyses.



Supplementary Figure 2. Peripheral tumors show improved segmentation accuracy and boundary precision compared to central tumors. Density plot of the (a) DSC and (b) HD95 for central (orange) and peripheral (blue) tumor segmentations. Internal test and independent study data were used for these analyses.



Supplementary Figure 3. Scatter plots depicting the relationship between Contrast-to-Noise Ratio (CNR) and segmentation performance metrics: (a) DSC and (b) HD95. Higher CNR values corresponded to a small improvement in DSC ($P = 0.01$; $m = 0.40$, y-intercept = 2.2), but not HD95 ($P = 0.45$). Data demonstrates that high-performance metrics can be obtained even at low CNRs, highlighting the robustness of segmentation performance across image contrast quality ranges. Internal test and independent study data were used for these analyses.

SUPPLEMENTARY TABLE

Supplementary Table 1. Comparison of iSeg Performance with Prior Deep Learning Models for Lung Tumor Segmentation

Study	Dataset Size	Institution(s)	Tumor Type	Architecture	Reported DSC	Notes
Zhang *et al*., 2020[18]	330	Single Institution	NSCLC	ResNet	0.73	No external validation
Isler *et al*., 2022[19]	277	Multi-institution	NSCLC	MC-Swin-U	0.48	Small cohort size, suboptimal performance
Mak *et al*, 2023[16]	461	Single Institution	NSCLC	SegNet + 2D and 3D U-Net	0.79	Single expert segments
This Study (iSeg)	1,002	Multi-institution, multi-scanner	Primary and Metastatic Lung Tumors	3D U-Net	0.73	Robust across scanner types, tumor types, motion segmentation, outcomes assessment