

# Appendix: Anatomy-guided Pathology Segmentation

Alexander Jaus<sup>1,2</sup>, Constantin Seibold<sup>3,4</sup>, Simon Reiß<sup>1</sup>, Lukas Heine<sup>3</sup>, Anton Schily<sup>3</sup>, Moon Kim<sup>3</sup>, Fin Hendrik Bahnsen<sup>3</sup>, Ken Herrmann<sup>4,5</sup>, Rainer Stiefelhagen<sup>\*1</sup>, and Jens Kleesiek<sup>\*3</sup>

<sup>1</sup> Karlsruhe Institute of Technology, Karlsruhe, Germany  
{firstname.lastname}@kit.edu












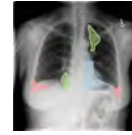
<sup>2</sup> HIDSS4Health - Helmholtz Information and Data Science School for Health,  
Karlsruhe/Heidelberg, Germany

<sup>3</sup> Institute for AI in Medicine, University Hospital Essen, Essen, Germany  
{firstname.lastname}@uk-essen.de

<sup>4</sup> Department of Nuclear Medicine, University of Duisburg-Essen  
{firstname.lastname}@uk-essen.de

<sup>5</sup> German Cancer Consortium (DKTK)- University Hospital Essen, Essen, Germany

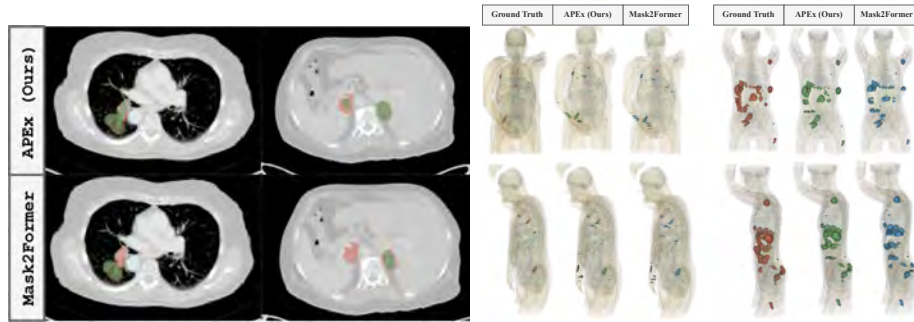
## 1 Qualitative Results

Input	MaskRCNN	PointRend	M2F	APEX (Ours)	Target
					
					

**Table 1.** Examples of qualitative segmentation results on ChestXDet. Each class is represented by a distinct color. Best viewed on screen with zoom and in color.

---

\* shared last author



**Fig. 1.** (Left:) We show qualitative comparisons against a Mask2Former baseline. The red ground truth is compared against model predictions in green. (Right:) We show two patients in a coronal and sagittal view below. Volumes shown in red, green, and blue denote the lesion ground truth, APEX predictions, and Mask2Former baseline predictions. Best viewed on a screen and in color.

## 2 Detailed Results for Chest X-Ray

**Table 2.** ChestXDet Results. We highlight the best performance in **bold** and the second best by underlining.

Pathology	MRCNN	Casc. MRCNN	PointRend	MaskDino	M2F	Ours
Atel	3.92 ± 1.15	3.97 ± 0.90	<u>4.22 ± 1.20</u>	2.77 ± 0.77	3.83 ± 0.60	<b>4.38 ± 0.476</b>
Calc	5.37 ± 1.72	6.39 ± 1.89	<b>6.72 ± 1.75</b>	6.29 ± 0.86	5.62 ± 0.91	5.80 ± 1.39
Card	44.47 ± 2.51	<u>45.82 ± 2.15</u>	<b>50.03 ± 1.7</b>	37.18 ± 1.22	34.24 ± 5.69	48.00 ± 1.63
Consol	16.87 ± 0.412	17.65 ± 1.04	17.74 ± 0.51	18.79 ± 1.01	<u>19.06 ± 1.14</u>	<b>21.32 ± 0.59</b>
D.Nod	10.89 ± 2.70	13.12 ± 2.54	12.93 ± 2.96	18.33 ± 3.15	<u>18.72 ± 2.88</u>	<b>25.82 ± 2.27</b>
Eff	8.56 ± 1.10	8.28 ± 1.27	8.29 ± 0.35	10.78 ± 1.09	<u>12.33 ± 0.63</u>	<b>11.94 ± 1.47</b>
Emph	44.47 ± 2.31	42.89 ± 2.40	42.46 ± 3.43	45.9 ± 4.38	45.30 ± 2.04	<b>54.94 ± 2.61</b>
Fib	10.48 ± 2.11	10.71 ± 1.32	9.76 ± 1.69	10.31 ± 2.13	<u>11.23 ± 1.85</u>	<b>12.55 ± 1.39</b>
Fract	7.65 ± 1.08	6.36 ± 1.46	<b>10.61 ± 0.59</b>	8.527 ± 0.845	7.28 ± 0.86	<u>9.76 ± 0.502</u>
Mass	11.59 ± 2.89	11.93 ± 3.07	<b>15.66 ± 1.73</b>	12.39 ± 1.86	8.03 ± 1.40	11.94 ± 1.75
Nod	<u>5.72 ± 0.53</u>	5.41 ± 1.00	<b>6.97 ± 0.79</b>	<u>5.646 ± 1.47</u>	5.14 ± 0.59	5.48 ± 0.688
Pl.Thick	4.32 ± 1.32	4.43 ± 0.74	<b>5.12 ± 1.23</b>	4.28 ± 0.73	3.70 ± 0.50	<u>4.61 ± 0.66</u>
Pneumo	4.10 ± 0.804	3.21 ± 1.03	<u>6.40 ± 0.92</u>	5.64 ± 1.65	5.84 ± 1.24	<b>6.93 ± 1.06</b>
mAP	13.72 ± 0.41	13.86 ± 0.70	15.14 ± 0.44	14.38 ± 0.74	13.87 ± 0.53	<b>17.20 ± 0.33</b>