

Supplementary Material

Per-Image IoU Analysis

| Image ID | Category | <i>F-UNet</i> | <i>F-UNet-mp</i> | <i>U-Net</i> | <i>U-Net++</i> | <i>DeepLabV3+</i> | <i>FCN</i> | <i>SegNet</i> |
|----------|----------|---------------|------------------|--------------|----------------|-------------------|------------|---------------|
| 1 | D05 | 0.1649 | 0.0000 | 0.0103 | 0.0260 | 0.0026 | 0.0000 | 0.0758 |
| 2 | D41 | 0.1923 | 0.0000 | 0.0000 | 0.0000 | 0.7113 | 0.0000 | 0.0000 |
| 2 | D05 | 0.2456 | 0.0442 | 0.0988 | 0.2903 | 0.1987 | 0.0000 | 1.8030 |
| 2 | D40 | 0.6630 | 0.4393 | 0.3503 | 0.6087 | 0.6243 | 0.2935 | 0.5514 |
| 2 | D70 | 0.1333 | 0.1571 | 0.1609 | 0.0000 | 0.1053 | 0.0000 | 0.2500 |
| 2 | D52 | 0.7464 | 0.7059 | 0.6385 | 0.6880 | 0.6190 | 0.3704 | 0.5721 |
| 3 | D41 | 0.5679 | 0.2369 | 0.5578 | 0.5016 | 0.5212 | 0.4735 | 0.3761 |
| 3 | D05 | 0.5884 | 0.2588 | 0.1873 | 0.2549 | 0.3445 | 0.0482 | 0.0137 |
| 4 | D20 | 0.8834 | 0.8643 | 0.8223 | 0.8118 | 0.8403 | 0.7393 | 0.7588 |
| 4 | D40 | 0.6097 | 0.5809 | 0.2958 | 0.2316 | 0.5449 | 0.1409 | 0.2319 |
| 4 | D70 | 0.5467 | 0.5470 | 0.4587 | 0.4072 | 0.5360 | 0.2752 | 0.2017 |
| 5 | D61 | 0.7588 | 0.7364 | 0.0000 | 0.3345 | 0.0138 | 0.0014 | 0.3723 |
| 5 | D62 | 0.2812 | 0.0000 | 0.0480 | 0.0000 | 0.0017 | 0.0000 | 0.0000 |
| 5 | D52 | 0.7865 | 0.7778 | 0.2082 | 0.5594 | 0.4611 | 0.3058 | 0.5995 |
| 6 | D61 | 0.9463 | 0.9349 | 0.5931 | 0.5067 | 0.3593 | 0.4341 | 0.5211 |
| 7 | D41 | 0.1204 | 0.0370 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 7 | D70 | 0.4713 | 0.4660 | 0.0000 | 0.2278 | 0.0000 | 0.0000 | 0.0000 |
| 7 | D62 | 0.7517 | 0.7305 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 8 | D70 | 0.9207 | 0.9094 | 0.8764 | 0.8857 | 0.8471 | 0.5611 | 0.7553 |
| 8 | D51 | 0.9794 | 0.9768 | 0.9703 | 0.9744 | 0.9740 | 0.8463 | 0.9475 |

Supplementary Table: Per-image, per-category IoU scores across eight images (Figure 6) for all models.

| Image ID | Category | <i>F-UNet</i> (20%) | <i>F-UNet</i> (10%) | <i>F-UNet</i> (5%) | <i>F-UNet</i> (1%) |
|----------|----------|---------------------|---------------------|--------------------|--------------------|
| 1 | D05 | 0.7149 | 0.5372 | 0.0278 | 0.0000 |
| 2 | D05 | 0.2150 | 0.0000 | 0.0000 | 0.0000 |
| 2 | D40 | 0.6259 | 0.1400 | 0.0063 | 0.0000 |
| 2 | D70 | 0.7966 | 0.4717 | 0.0000 | 0.0000 |
| 3 | D70 | 0.7853 | 0.0000 | 0.0163 | 0.0000 |
| 3 | D52 | 0.9713 | 0.4162 | 0.6087 | 0.0000 |
| 4 | D41 | 0.8268 | 0.0000 | 0.0000 | 0.0000 |
| 4 | D20 | 0.9304 | 0.8619 | 0.8790 | 0.0000 |
| 4 | D05 | 0.2675 | 0.0000 | 0.0000 | 0.0000 |
| 5 | D61 | 0.9677 | 0.6950 | 0.7763 | 0.0004 |

Supplementary Table: Per-image IoU comparison across labeling levels for Images in Figure 9