

6. Supplementary Material

6.1. Ablation of kernel-supervised learning

Here we add an external experiment for the ablation study of kernel-supervised learning to prove its performance improvement. It was tested on both Cityscapes and CTW1500 datasets. As shown in table 8, kernel-

Table 8. Ablation of kernel supervised learning.

| L_{ker} | Cityscapes | | | CTW1500 | | |
|-----------|------------|-----------|-----------|---------|-----------|-----------|
| | mAP | AP_{50} | AP_{75} | mAP | AP_{50} | AP_{75} |
| ✓ | 30.6 | 55.4 | - | 34.6 | 71.1 | 31.0 |
| ✗ | 29.3 | 54.3 | - | 32.8 | 69.5 | 29.3 |

supervised learning shows significant improvement on both two datasets, which, from the perspective of cross-domain, indicates that kernel supervision plays a complementary role to prevent over-fitting. Hence both two datasets are two different domains.

6.2. Compared with longer schedule DenseCL

The ResNet backbone is initialized with DenseCL. Hence it is much fairer for us to provide an experiment that compares our pre-training method with DenseCL with longer training schedule. The result shows that our pre-

Table 9. Comparison with a longer schedule DenseCL.

| DenseCL pt epoch | SP | mAP | AP_{50} | AP_{75} |
|------------------|----|-------------|-------------|-------------|
| 200 | ✓ | 23.5 | 41.4 | 23.7 |
| 300 | ✗ | 20.6 | 36.6 | 20.6 |

training method achieves better performance than DenseCL with comparable training time, which is shown in table 9.