Appendix

A. More Visual Samples about UIIS Dataset

We show more examples of the UIIS dataset in Figure 1, where the different instances in the image are labeled with different color masks. As can be seen, the images in the UIIS dataset cover a wide range of underwater scenes with different saturation, chromatic aberration and quality degradation. This data is effective for training an instance segmentation network adapted to a general underwater scene.

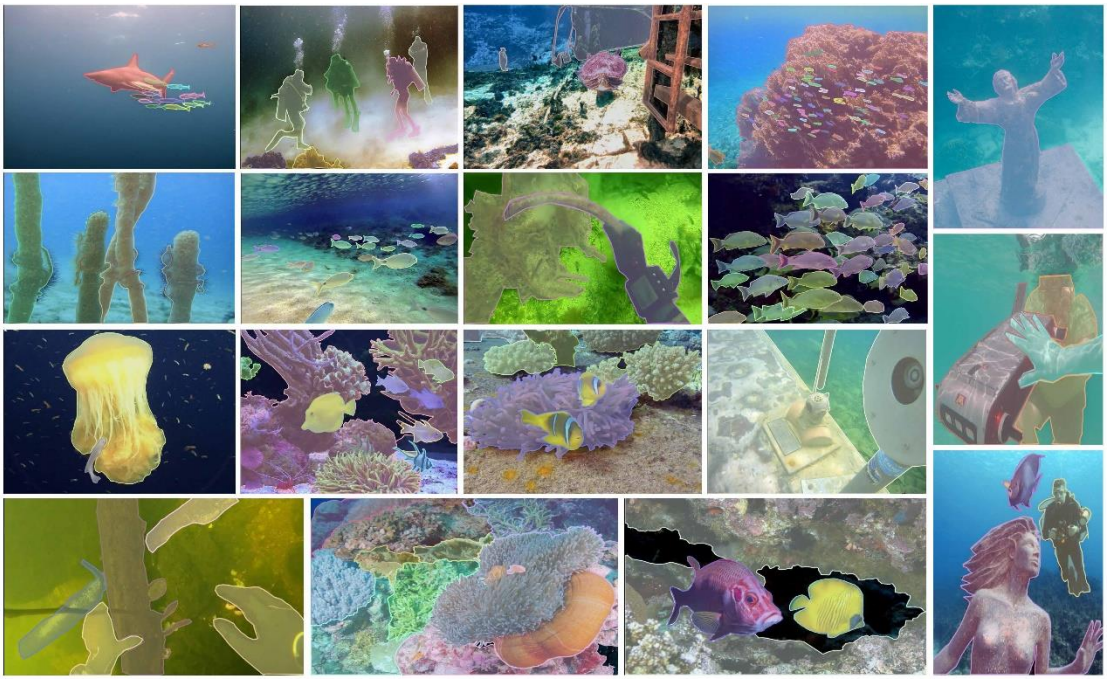

Figure 1: More visual samples of annotated images with pixel-level instance segmentation in the UIIS dataset.

B. More Qualitative Comparison Results

We also show more visual comparisons with Mask RCNN [1] and QueryInst [2] on UIIS dataset in Figure 2 to demonstrate the effectiveness of our model. Benefiting from the Boundary Mask Strategy and Boundary Learning Loss, the proposed WaterMask is able to successfully segment the boundary masks of the fitting instances, such as those depicted in the second, third and last columns of the figure. Moreover, even in challenging regions, our network always predicts the correct and reliable output masks completely, such as those depicted in the fourth and fifth columns of the figure. In conclusion, WaterMask exhibits a pleasing performance.

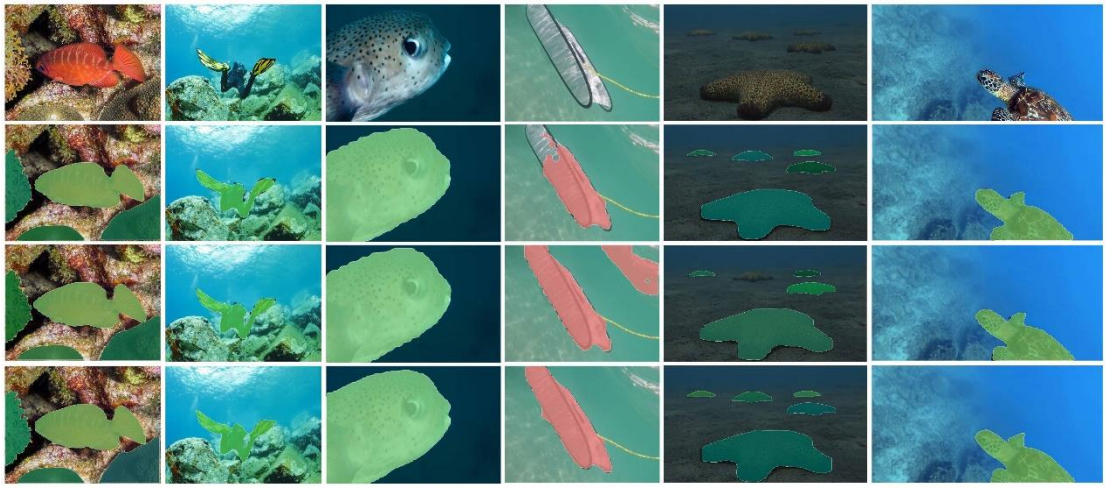

Figure 2: More qualitative comparisons on UIIS dataset. The first row represents the original image, and the second, third and fourth rows represent Mask R-CNN, QueryInst and our results, respectively.

References

[1] Yuxin Fang, Shusheng Yang, Xinggang Wang, Yu Li, Chen Fang, Ying Shan, Bin Feng, and Wenyu Liu. Instances as queries. In IEEE International Conference on Computer Vision, pages 6910–6919, October 2021. 1

[2] Kaiming He, Georgia Gkioxari, Piotr Dollar, and Ross Girshick. Mask r-cnn. In IEEE International Conference on Computer Vision, pages 2961–2969, 2017. 1