Supplementary Material: DA-CIL: Towards Domain Adaptive Class-Incremental 3D Object Detection

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In this supplementary material, we provide visualizations of inference results with our proposed approach and compare it with the baseline method. As illustrated in Fig. 1, our method is able to accurately detect both old and novel classes in the target domain, overcoming the domain shift in old classes. Moreover, our model consistently outperforms the baseline SDCoT in both scenarios, *i.e.*, class-incremental learning (CIL), and domain adaptive class-incremental learning (DA-CIL). Besides, our method identifies partially occluded and cluttered objects, which are very challenging targets.

In Fig. 2, we present failure examples of our approach on the SUN RGB-D validation set. In the first row of Fig. 2, our method fails to detect the bookshelf in the point clouds. The failure is due to the loss of geometric structure of the bookshelf in the point cloud data, which is partially occluded by books and other objects. Besides, the gap between source and target domains in the bookshelf class is also an obstacle to accurate detection. In the second row of Fig. 2, the desk object is misclassified as a table, which is likely due to geometric similarities between the 2 classes. In the last row of Fig. 2, the bounding box of the desk object deviates from the ground-truth, which can be attributed to the large size and irregular shape of the object.

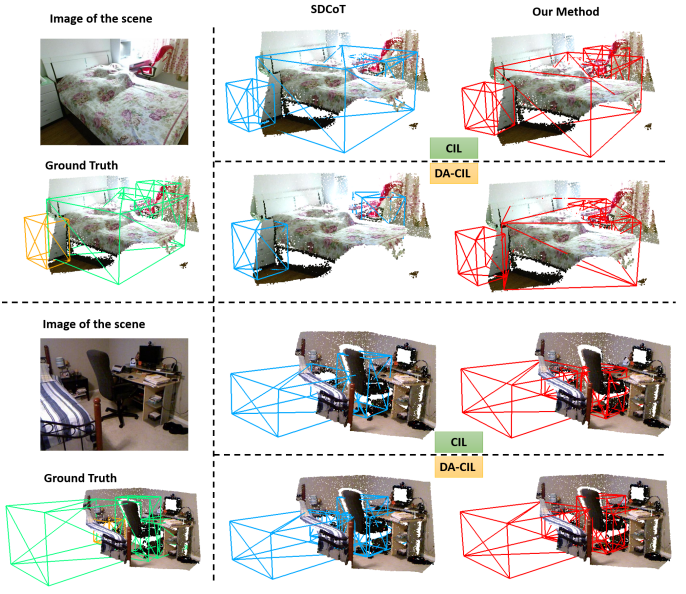

Figure 1: Qualitative results on SUN RGB-D validation set. Green and Yellow represent ground-truth annotations of base and novel classes, respectively. CIL refers to models trained on the same domain and DA-CIL refers to models trained on source and target domains with domain shift.

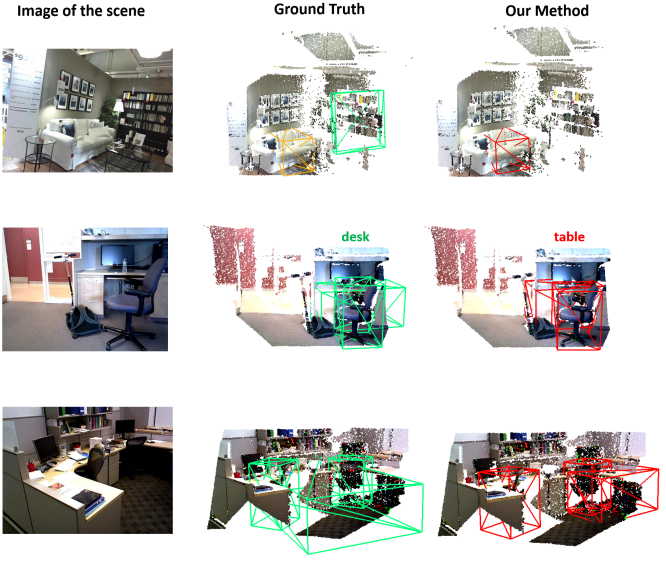

Figure 2: Failure cases on SUN RGB-D validation set under the DA-CIL setting. Green and Yellow represent ground-truth annotations of base and novel classes, respectively. We show three examples from top to bottom.