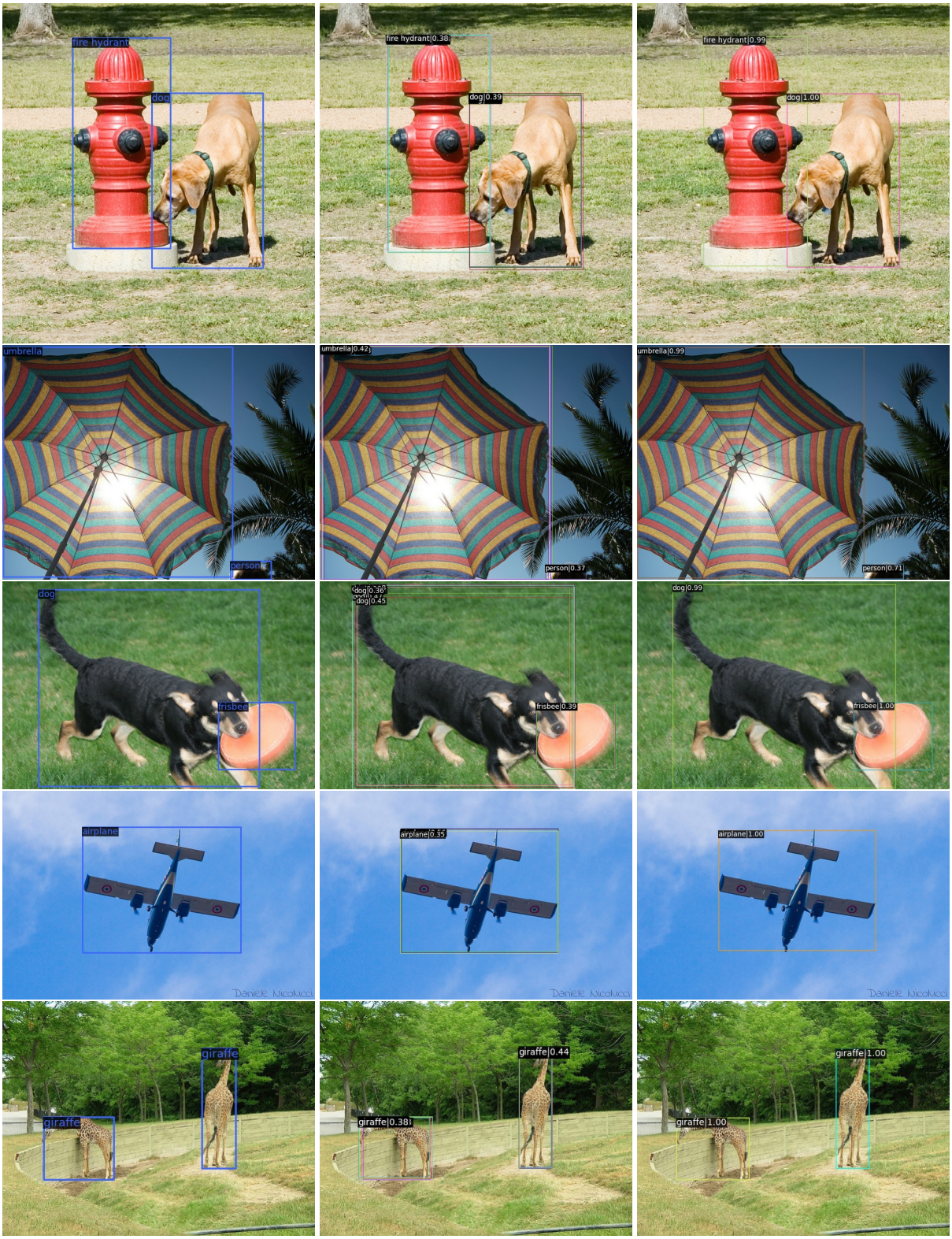
Supplementary Materials to "One-to-Few Label Assignment for End-to-End Dense Detection"

In this supplementary file, we present more visualization results on COCO detection, CrowdHuman detection and COCO instance segmentation.

Fig. 1 shows the detection results of FCOS and our method on COCO val set. The official FCOS is trained with one-to-many label assignment. We can clearly see that such a strategy can cause duplicated predictions when NMS is not used in inference. In contrast, our method can directly predict one unique bounding box for one object without using NMS.

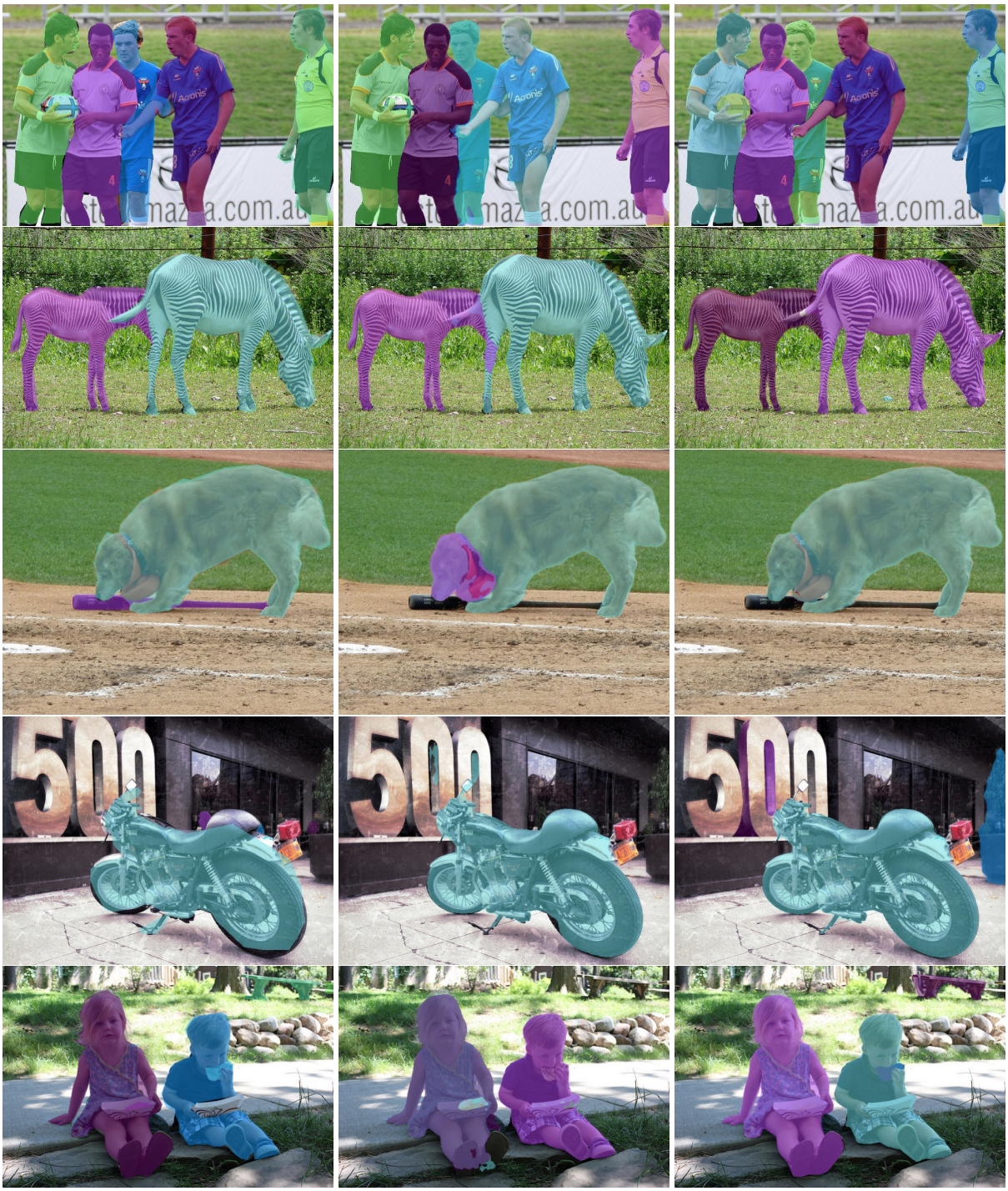
Fig. 2 shows the instance segmentation results of POTO and our method on COCO val set. POTO adopts one-to-one label assignment strategy during training and it can avoid NMS in inference but it predicts unsatisfied masks, especially in the overlapped regions as shown in Fig. 2. Thanks to the dynamic soft label assignment strategy, our method is able to predict one **unique** and **precise** mask for one object.

Fig. 3 presents the detection results on the CrowdHuman dataset. We can observe similar phenomenons that FCOS suffers from severe duplicated predictions without NMS, while our end-to-end detector obtains much fewer duplicated predictions.



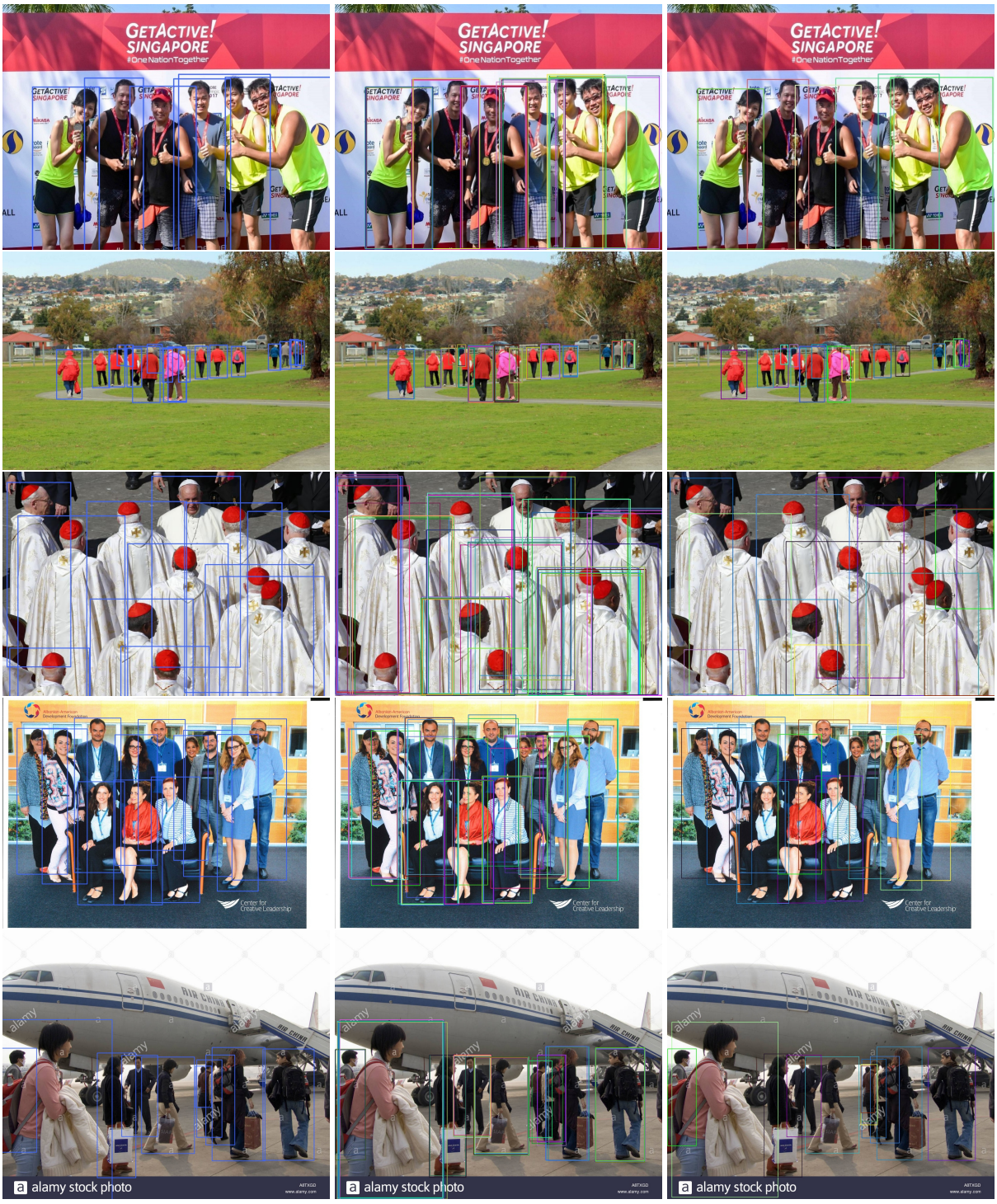
(a) Ground-truth (b) FCOS w/o NMS (c) Ours

Figure 1. The prediction visualizations of different detectors on COCO val set.



(a) Ground-truth (b) POTO (c) Ours

Figure 2. The prediction visualizations of different instance segmentation methods on COCO val set.



(a) Ground-truth (b) FCOS w/o NMS (c) Ours

Figure 3. The prediction visualizations of different detectors on CrowdHuman val set.