Weakly Supervised Instance Segmentation using Class Peak Response

Yanzhao Zhou[1], Yi Zhu[1], Qixiang Ye[1], Qiang Qiu[2] and Jianbin Jiao[1]

[1]University of Chinese Academy of Sciences
[2]Duke University
{zhouyanzhao215, zhuyi215}@mails.ucas.ac.cn, {qxye, jiaojb}@ucas.ac.cn, qiang.qiu@duke.edu

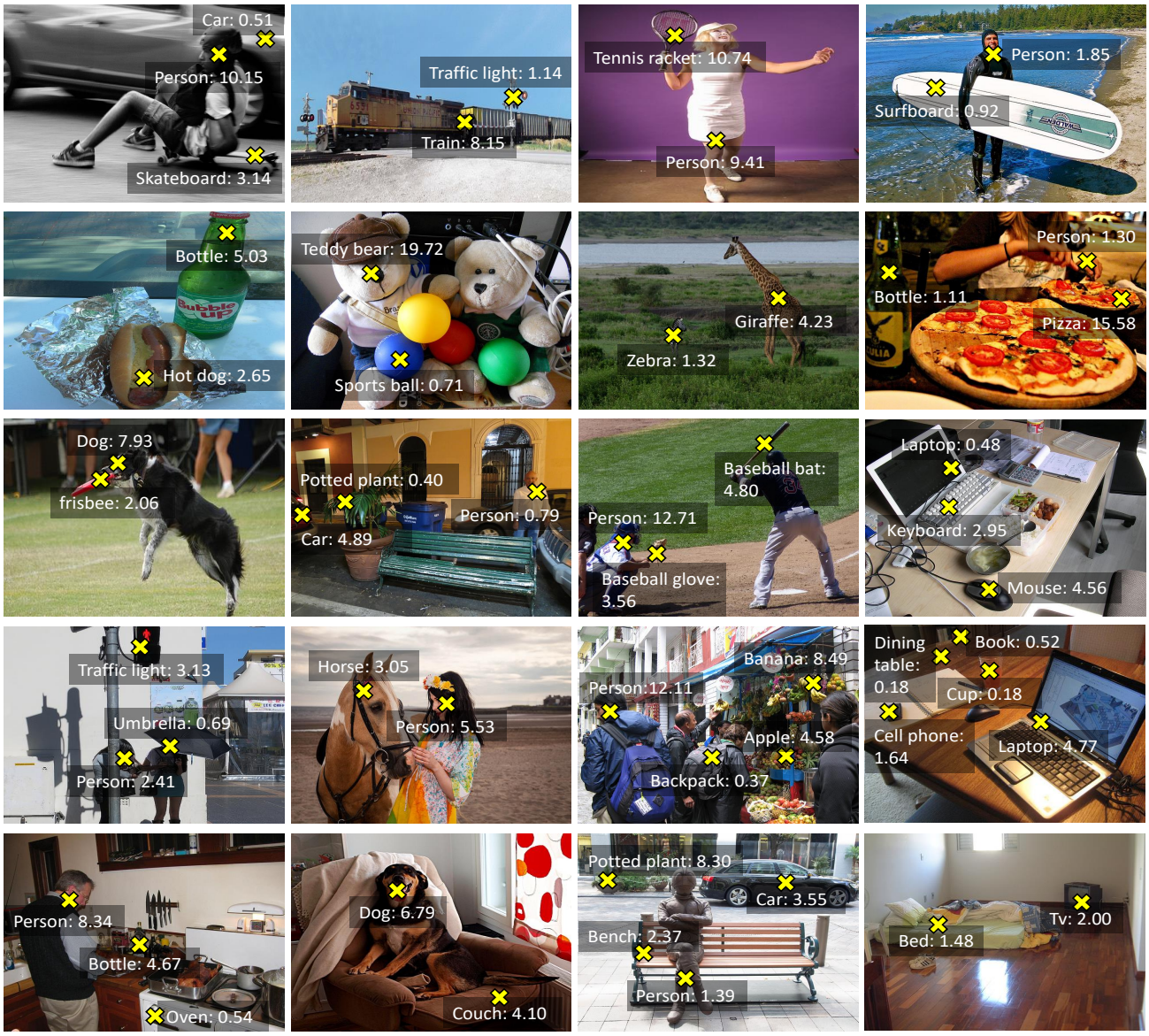

Figure 1: Pointwise localization results on the MS COCO 2014 val. set.

Figure 2: Peak Response Maps (PRMs) overlapped with the image. Different colors represent the response of different peaks. Texts show the predicted object category of the corresponding peak. PRMs clearly describe informative regions and fine-detailed boundaries of each instance which allow instance masks to be extracted.

Figure 3: Class-aware semantic segmentation results on the PASCAL VOC 2012 val. set.

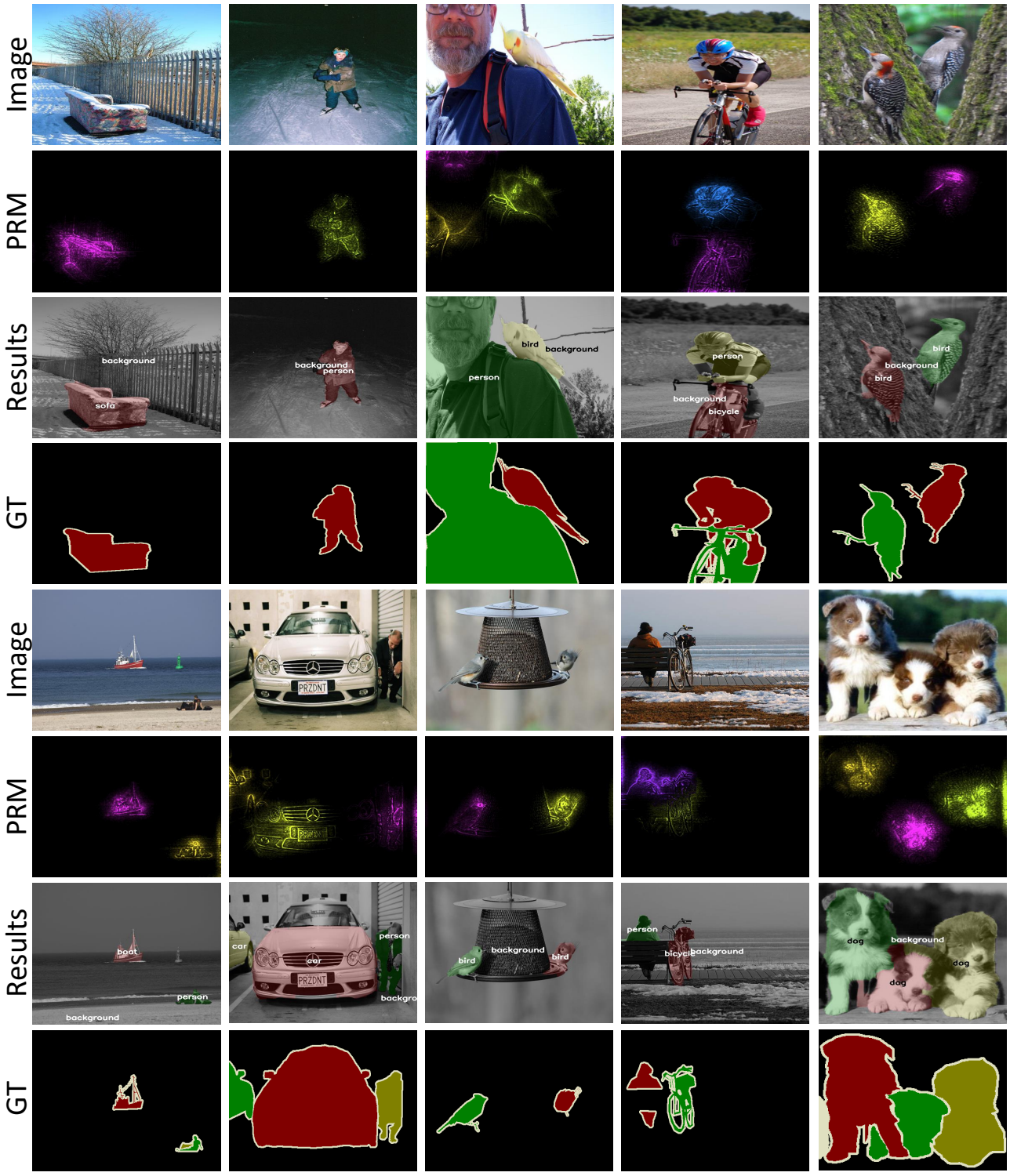

Figure 4: Instance-aware semantic segmentation results on the PASCAL VOC 2012 val. set.

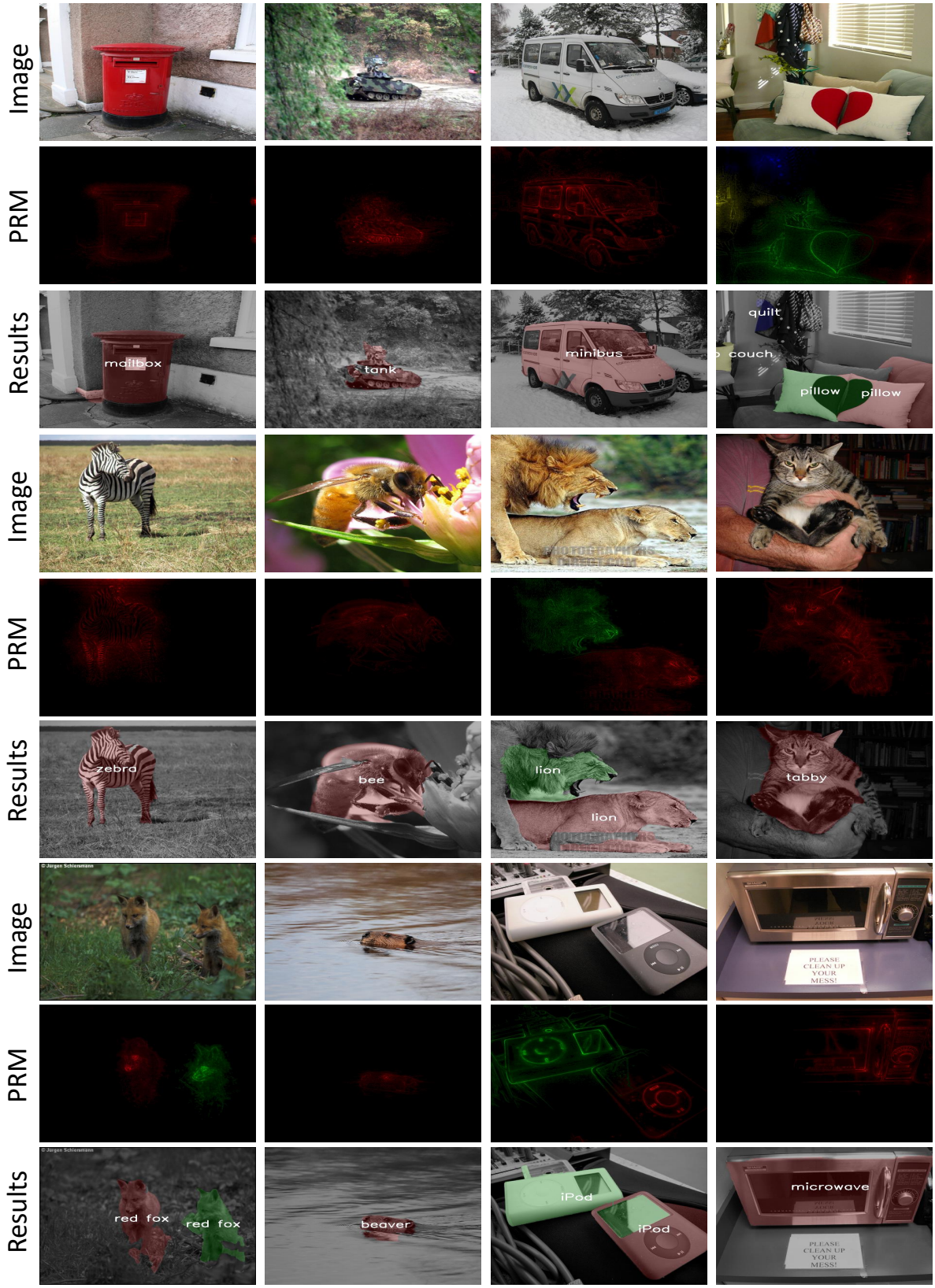

Figure 5: Instance-aware semantic segmentation results on the ILSVRC 2012 (ImageNet) val. set. The proposed method uses image-level supervision only; thus can be easily applied to large-scale and fine-grained instance segmentation tasks.