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Image Instance Segmentation Using Modified Mask R-CNN

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Abstract : The Mask R-CNN is recently introduced by the team of Facebook AI Research (FAIR), which is mainly concerned with instance segmentation in images. Here, the Mask R-CNN is based on ResNet and feature pyramid network (FPN), where a single dropout method is employed. This paper provides a modified Mask R-CNN by adding multiple dropout methods into the Mask R-CNN. The proposed model has also utilized the concepts of Resnet and FPN to extract stage-wise network feature maps, wherein a top-down network path having lateral connections is used to obtain semantically strong features. The proposed model produces three outputs for each object in the image: class label, bounding box coordinates, and object mask. The performance of the proposed network is evaluated in the segmentation of every instance in images using COCO and cityscape datasets. The proposed model achieves better performance than the state-of-the-networks for the datasets.

Keywords : instance segmentation, object detection, convolutional neural networks, deep learning, computer vision
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