

PhD

FCOS Fully Convolutional One-Stage Object Detection ax1908 iccv19

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Similar to FoveaBox in predicting a detection for every single pixel location – encoded hereis case by offsets from the center and class confidences

Every single pixel that lies inside any GT box is considered a positive sample

FPN is claimed to have fixed the two main issues – ambiguous status of pixels lying inside multiple GT boxes and relatively low Best possible recall or BPR due to the impossibility of representing smaller boxes due to the large stride of the final feature map

Each GT box is assigned to a specific level of the feature pyramid using heuristics about the maximum and minimum object size that each level is responsible for

large number of low-quality detections far away from the center of the actual object is another problem that is solved by adding a single layered parallel branch that predicts the normalized distance of the pixel from the center of the object that it is responsible for

BPR was shown to be comparable to retinanet though not better

Overall performance is similar as well and a tiny bit better with all the tricks though such comparisons remain dubious due to the probably low-quality vanilla versions of competitors used

FCOS is also used to replace the region proposal network in standard 2 stage detectors with a small improvement in performance