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map is evaluation matric for object detection model. It measures how well a model performs in detecting objects across different categories by considering both precision and recall.

Precision = TP TP+PP

where TP = True Positive PP = Palse Postive

Recall = TP .

retire best TR+ FH mail 2 more just a sole

where PN= Palse Megalive.

Aveg Average Precision (AP):Avg Precision is computed Brom the
precision-reall curve. The wave is plotted with recall values on the x-axis.

2 precision values on the y-axis AP is:

the area under this curve.

Mean Averigage Precision (mAP):mAP is a mean of AP values Par all classes. If theme are N classes, it is  $mAP = 1 \times AP$   $i = 1 \times AP$ 

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•	improves the effeciency of the detection					
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<b>②</b>	Pon euc	position	in the Rea	twee map		

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APN generates multiple anchor boxes of different scales & aspect ratios Jeading to 9 anchors per position.

3 for each anchor, the APN simultaneously predicts an objectness score & and refines the anchor's countries through bounding box regression.

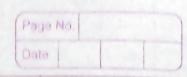
region proposal & detection tooks through unified training. 9

Reducting the no. of proposals via
Non-Maximum Suppression, minimizing
computational load in detection stage.

18. Tou measures the overlap blu two bounding boxes: a predicted bounding box and a ground truth boucking box. It is defined as the ratio of the area of the intersection of the two bounding boxes to the oreact their union.

> IOU = Area of Intersection AHEA OF Union

Importance of Iou:-1) It helps in setting thresholds for evaluating the trade positive & Palse positive.



It is used in loss punctions during training to improve model perpormance.

It plays a key role in post - processing steps: Like Noh- Maximum suppression.

and doublett solonibunds situation and

In object detection, multiple bounding boxes can be often be proposed for the same object. These bounding boxes usually usually house different compidence of scored & inclicating the containing an object. NMS helps in selecting the most accurate bounding box. Roy each object. 19.

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Significance of NMS: Impriored Accuracy Reduction Expirerency

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