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**CSE 541: Computer vision**

**WEEKLY REPORT 4**

**[Group: 7]**

**SECTION – 1**

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Weekly report:

We referred to various research papers online and understood the models they used. On further understanding, we found out that two research papers stand out the best for our topic, namely:

1. PP-YOLOE-R: An Efficient Anchor-Free Rotated Object Detector.

This Research paper focuses on making an accurate model for the dataset DOTA 1.0

1. DAFNe: A One-Stage Anchor-Free Approach for Oriented Object Detection

This paper focuses on accurately detecting and annotating differently oriented and sized objects on dataset DOTA 1.5

1. DAFNe: The model introduces One-Stage anchor-free processing for oriented object detection, center-ness thresholding and corner detection. One-stage processing makes the model faster and less complicated by passing the images in one go. Though one-stage processing is faster and has a high inference speed, localisation and recognition accuracy need improvement.

Due to the fixed threshold for determining centre-ness, the detections with centre-ness closer to the threshold which might be required can be discarded, which can directly impact the accuracy of the model. Thus, we aim to improve the model’s accuracy by introducing dynamic thresholding.

The accuracy can further be improved by introducing two-stage processing. However, we cannot change the current model; we can implement this by including 2nd stage in the model we create. This will now have most of the parameters that were lost earlier. Also, it improves localisation and recognition accuracy.