**Project Weekly report**

**Topic : - Evaluate Performance of Faster-RCNN and its variants in case of small object detection**

**Group Name: Tech Trio**

**Project Definition: 1**

**Group Member’s names:-**

**Kaushik Gohil, Richa Saraiya, Parth Mevada**

* Model Analysis for Small Object Detection: -

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| Model name | Techniques | How it works |
| * Faster R-CNN with Feature Pyramid Networks (FPN) | * Feature Pyramid Networks (FPN) | * Uses multi-scale feature maps to improve small object detection by capturing features at different resolutions. |
| * M2F2-RCNN | * Multi-Scale Feature Fusion in Faster R-CNN | * Enhances Faster R-CNN by integrating multi-scale feature fusion for better accuracy in detecting small objects. |
| * CNN with Multi-Scale Feature Fusion | * Multi-Scale Feature Fusion in CNN | * Improves small object detection by combining feature information from multiple layers. |
| * Coarse-to-Fine Proposal Generation Model | * Coarse-to-Fine Proposal Generation + Imitation Learning | * Generates initial rough object proposals and refines them iteratively using imitation learning to detect small objects. |
| * DCN with Faster R-CNN | * Deformable Convolutions, Adaptive Receptive Fields, Spatial Sampling Offsets | * Replaces standard convolutions in Faster R-CNN with deformable ones, allowing adaptive receptive fields that improve feature extraction and localization for small objects. |

* Next week - Model selection and reading papers