Project Weekly Report - 5

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

Group Name: Tech Trio

Project Definition: 1

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- **Last week progress:**

⇒ Last week, we completed searching the models' information and research papers related to our models related to our project. Also, we understood the processes for implementing the processes for the CFINet and M2F2 - RCNN. Also, we have found some libraries for pytorch and tried to import those libraries by git bash and command prompt. In that process, we have faced the errors in importing libraries and connecting it with the software and we got connected with the github by giving commands. Therefore, we learnt some commands for solving all those issues. Finally, we have got the correct connections.

⇒ Also, we have completed the feature pyramid network (FPN) model. After that, we came to the other two models of multi scale feature fusion and contextual feature interaction network model.

- **Current week progress:**

⇒ In this week, we have developed the model - Multi Scale Feature Fusion RCNN (M2F2 - RCNN). Also, we are developing the CFINet using coarse region proposals and cascades. In M2F2 - RCNN, we have almost done the model in the coding part, but we are facing some issues like the bounding boxes are overlapping and the output looks very complex. We are trying to apply NMS for the correct output of the model. In CFINet, we are facing issues like saving the model. So, we are unable to save that model, therefore we are trying to work further and more deeply in this model to get a better output.

⇒ Also, this week, we are watching further syntaxes for our models and improving the code by implementing it as same as the processes on which the models are actually working. We are going through some methods related to our model and keep trying to make changes in the wrong portion of our models and some further improvements in programming. In M2F2 - RCNN, we are going through the non maximal suppression method to reduce overlapping bounding boxes

and passing the model through a convolution block attention module for reducing background noise. In the CFINet, we are trying to save our model and reduce the computational complexity and also we are trying to implement a coarse region proposal in our model.

- **Next week planning:**

⇒ In the next week, we are planning to complete these two M2F2 - RCNN and CFINet models and also completing another two other models - PANet and Libra RCNN. For that, we will research some further for those two models and completely get the information about the model starting two days of the week and import some libraries and connection with software by git bash and command prompt commands. After that, we will implement the other two models and complete those models.