# BOUNDING BOX REFINEMENT AGENT FOR OVERLAPPING OBJECTS

A progress report for Mid-Sem Evaluation Phase-II
Of
M. Tech (Signal Processing) 2020-2022
By
Anindya Ghosal (2020PSP3007)

Under the supervision of Prof. Jyotsna Singh



Division of Electronics & Communication Engineering NETAJI SUBHAS UNIVERSITY OFTECHNOLOGY (Formerly NSIT) NEW DELHI-110078

#### **CERTIFICATION**

This is to certify that this report titled "Bounding Box Refinement Agent for Overlapping Object Detection" being submitted by ANINDYA GHOSAL (2020PSP3007) to the Division of Electronics and Telecommunication Engineering, Netaji Subhas University of Technology (NSUT) for the mid semester dissertation evaluation for the award of M. Tech. degree, is record of bona-fide work carried out by him under the supervision and guidance. The matter embodied in this report has not been submitted for the award of any other degree.

**Supervisor** 

Prof. Jyotnsa Singh Division of ECE, NSUT, New Delhi, India

#### Acknowledgement

We would like to express our sincere gratitude to Prof. Jyotsna Singh, Department of Electronics and Communication Engineering, Netaji Subhas University of Technology, for granting me this chance to work on a trending research area as a part of my Master's Thesis Project.

Without her thoughtful guidance, meticulous supervision, and incessant encouragement, this thesis would not have emerged as it has. Her insights and experience have been the guiding source for our research and study. I would also like to thank the entire Department of ECE for providing an opportunity to study this project and enhance my knowledge on relevant industrial skills. I also want to thank the department for ensuring an environment conducive to learning.

This project has not only provided me with in-depth knowledge of relevant and new-age technologies but also provided a platform for me to work together with her as a team. I would like to thank my parents for encouraging and supporting me in the pursuit of my thesis work.

ANINDYA GHOSAL 2020PSP3007

## List of figures

1)	Image Classification Example	4
2)	Object Detection Example	4
3)	Intersection Over Union	5
4)	COCO Box AP over the years	6
5)	PASCAL mAP over the years	6
6)	R-CNN	7
7)	Bounding Box Regression	7
8)	Fast R-CNN	8
9)	Faster R-CNN.	.10

### Contents

1.	Introduction	1
2.	Literature Review.	4
	Problem statement	
	Work Done Till Date	
5.	Future Work	14
	References.	