# NORTH SOUTH UNIVERSITY


# City Traffic Object Detection from Aerial View by Drone Using Computer Vision

A DISSERTION
SUBMITTED TO THE DEPARTMENT OF
ELECTRICAL AND COMPUTER ENGINEERING
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IN THE PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE DEGREE OF BACHELOR OF SCIENCE IN
COMPUTER SCIENCE AND ENGINEERING

**Date**
31st December 2022, Saturday

# Declaration

It is hereby acknowledged that:

- No illegitimate procedure has been practiced during the preparation of this document.
- This document does not contain any previously published material without proper citation.
- This document represents our own accomplishment while being Undergraduate Students in the **North South University**

Sincerely,


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# Approval

I certify that I have read this dissertation and that, in my opinion, it is fully adequate in scope and quality as a dissertation.

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# Abstract

Deep learning algorithms have created a new wave of technologies that are affecting the world as we know it .From movie sites,food sites to international security, deep learning has been used in every case. As we said before, its use is very versatile. We can also use it in traffic object detection which we have tried to do in our project. Using this detection method we can count the number of vehicles on any road using its images or video footage and find the density of it.We used YOLOv5 and Faster R-CNN algorithms for doing this and we have successfully identified the vehicles on the roads. Object detection on drone podium abide a challenging assignment due to various factors such as plot of lookout, alter, barrier, balance. In dainty, large-scale drone-based A dataset boast 8,599 images (6,471 for training, 548 for validation, and 1,580) extravagantly glossed including object bounds for arduous Boxes, object categories, occlusion, truncation caliber, etc. One such algorithm is YOLOv5, developed in 2020. In this delving, every existing YOLOv5 architecture for small target detection is improved by modifying the YOLOv5 configuration. Better performance for small objects by adding a new feature fusion layer in the feature pyramid part of YOLOv5.