

# MID SEMESTER REPORT

VISUAL DETECTION OF  
DRONES BY  
INTEGRATION OF FOG TIME  
IMAGES WITH AI



INTRODUCTION



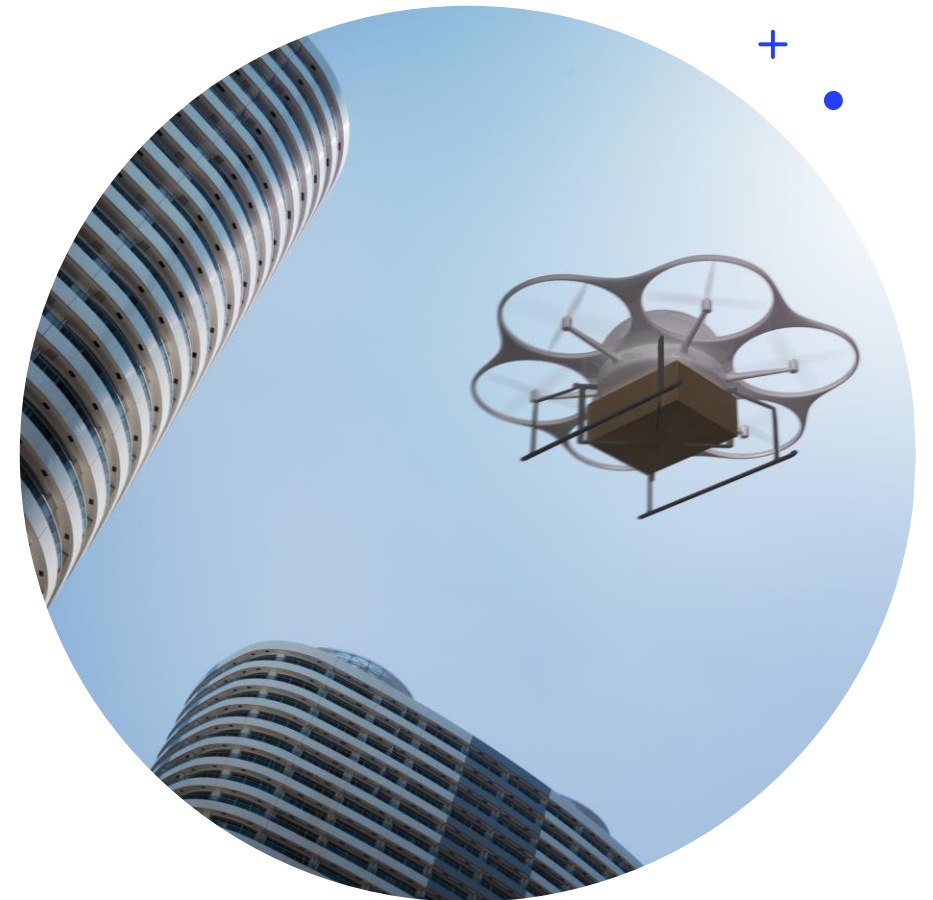
LEARNING OUTCOMES



FUTURE WORK

# Introduction

As drone attracts much interest, the drone industry has opened their market to ordinary people, making drones to be used in daily lives. However, as it got easier for drone to be used by more people, safety and security issues have raised as accidents are much more likely to happen colliding into people by losing control or invading secured properties. For safety purposes, it is essential for observers and drone to be aware of an approaching drone. Our project is a step in this very same direction. The Indian Army should be aware of hostile drones approaching in regions which have low or reduced visibility during. Fog Time, Day Time, and Thermal AI Detection combined will provide well rounded drone detection system to the Indian Army



# Learning Outcomes



- Since we were unable to get a dataset of fog time drone images, We used a normal day time data set of drone images and used the albumentations library to simulate fog on the images virtually.
- Once we had the fog time data set, we were trained our AI program using YOLOv4 library which detects objects through a bounding box. A bounding box is an imaginary rectangle that serves as a point of reference for object detection and creates a collision box for that object.
- Users can put any link of an image from the internet in the inference.ipynb file and the program will display the results accordingly
- Softwares/Programs Used:-
  - Python
  - Goggle Colab
  - YOLOv4 algorithm
  - Albumentation Library
  - Google Tensorboard

# FUTURE WORK AND WORK PLANS

## For Week 5:

Model Compression and increasing inference speed for on device deployment. If we want to have real world usage of this program, we will have to reduce its size so that we can get the program up and running on drones.

## For Week 6:

Testing of the product will be done, and the bugs or glitches if found will be fixed. We will also create a readme file for the program and then final product, along with the entire source code will be submitted to our PS instructor





# THANK YOU

27/5/2022

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Links to all the files including the  
GitHub repo has been shared in the  
Midsemester Project Report