Aerial Robotics Kharagpur Task Round 2022 Documentation

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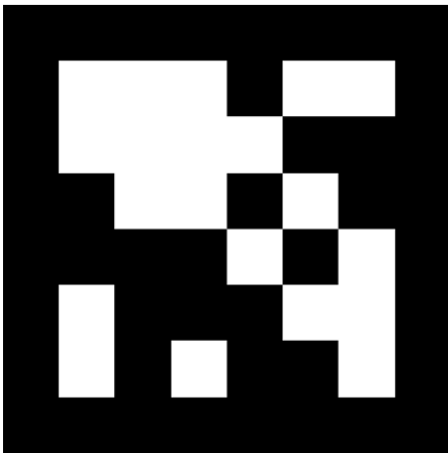*Abstract*—**I have done task 2.2 and 3.1 of the Task Round 2022 of ARK and will be elaborating on it, in this document.**
You will read about object detection, template matching and aruco detection

I. INTRODUCTION

I had to get the relative pose of the aruco marker provided, using aruco detection

II. PROBLEM STATEMENT

3.1 DETECTION AND POSE ESTIMATION A fiducial marker is an artificial landmark added to a scene to facilitate locating point correspondences between images. We use fiducial markers extensively in computer vision to estimate the object's position and orientation. Part 1: In this task you have to take a picture of the ArUco marker given below and estimate its relative pose. You need to print the pose and tag id on the image. You can use inbuilt functions to find the pose of the ArUco tag, however you should be able to tell how they work, its limitations and the different parameters it takes up and how it affects its working. You also need to detect and estimate the pose using live video capture from your webcam at different distances.

by the respective size and borders The detection can easily be done with open cv inbuilt function on python
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IV. FINAL APPROACH

My code was not working properly for the image, and the web cam was also not opening for the video program, both of which I got from and understood from the github repository of GSNCodes

V. RESULTS AND OBSERVATION

I will surely update the results by as soon as I am able to debug the code

VI. FUTURE WORK

I have to debug my code and them use it to detect the aruco markers even with my webcam I am very eager to do so!

CONCLUSION

The problem gave us an overall idea of how to go about doing aruco detection and finding its relative pose.

III. RELATED WORK

I had to watch videos about how the aruco markers work and looked at how they are useful, in general. It also involves mathematics dealing with matrices whose sizes are decided

*Write anyone who might have helped you accomplish this eg any senior or someone