ReadMe

There is a folder called camera\_data which has .npy files pertaining to the camera's inherent properties. There is no need to make any modifications to the contents of this folder, as I have already calibrated it to the positioning and features of the camera being used in the project.

The files in the folder are as follows:

1. calibration\_code.py- This is used to calibrate the camera, for a specific position. The rest of the code all runs based on the current positioning of the camera. If you were to change its location, then you'd have to take pictures of the checkboard again, with the new camera position, and use those images in the calibration code.

2. initial\_perspective\_calibration.py- This code involves manually calculating the height from the focal length of the camera. This has also been done, using the images of the dots in the main folder. This also does not have to be changed unless you decide to move the camera itself.

3. image\_recognition\_singlecam.py- This is the code that identifies the object and places a bounding box around it. X and Y coordinates are the result of this program. You would have to modify this code such that it works with your YOLO model, rather than for generic object detection.

4. camera\_realworldxyz.py- This code is where the translation of X and Y to X,Y,Z happens. You don't have to change this either, this is just imported in Program 3.