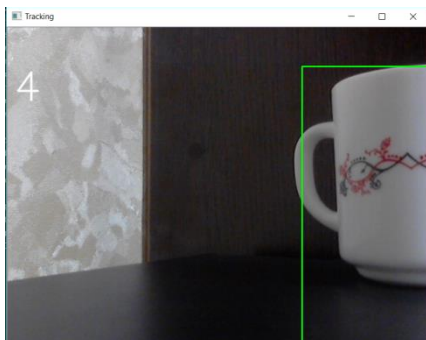


**Figure 6.** Object is overlapped partially

When the object is overlapped partially by the black block, the tracker often continues to track, but the detector sometimes cannot find the object. This is due to specific tuning of the detector YOLO for recognition many classes of objects. It recognizes black block as TV or monitor with high probability, which greater than probability of the target object. We plan to solve this problem in the future through additional tuning of the detector.



**Figure 7.** Object partially out of frame

When the object partially out of frame the tracker loses it, but the detector can find the object. Thus, our algorithm solves problem of redefinition the target object in case the object disappeared from the frame and came back.

In the future, it is planned to scale the platform, as well as increase the performance and quality of the algorithm due to using NVidia Jetson.

## 5. Conclusions

During this work, an algorithm was developed to track objects of two classes. The program can be used to control mobile robot using relative object position on the video frame and it can obtain information from different sensors such as range sensors or motor encoders and uses it to compute control signal for the robot.

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