Sprint Retrospective, Planning and Daily Stand Ups

# Week 1

Due to current conditions my project plan has changed slightly. I will first work on implementing an object detection and recognition algorithm and then I will attempt to simulate a robot with a stereo camera. I am doing the object detection first so that I can do that in conjunction with researching robot simulation software that will be adequate.

On this first week I intend to set up a git hub and link my project supervisor to it.

Following that I will start playing around with object detection and recognition algorithms in Jupiter notebook.

Because of the lack of hardware I have decided to try to use Webots (a Robot Simulator) to simulate a robot with a stereo camera on the top. I will need to retrain any object recognition algorithms once the hardware has been received.

## Monday

I spent most of the day researching YOLO and how to use the libraries. I set up a git hub and linked my supervisor to it. But due to internet problems I could not accomplish as much as I intended.

Tomorrow I hope to have a preliminary YOLO implementation.

## Tuesday

<https://www.pyimagesearch.com/2018/11/12/yolo-object-detection-with-opencv/>

<https://www.pyimagesearch.com/2014/11/17/non-maximum-suppression-object-detection-python/>

<https://www.pyimagesearch.com/2017/11/06/deep-learning-opencvs-blobfromimage-works/>

<https://pjreddie.com/darknet/yolo/>

<https://arxiv.org/pdf/1804.02767.pdf>

Today I managed to implement YOLO using Darknets pretrained model. It uses the webcam currently to detect objects in the live feed.

Tomorrow I hope to have made a simulation environment. Maybe begin to move the object detection code over.

## Wednesday

I have managed to create a Webots project that has a “stereo camera” set up. I was able to use python for the controller. The cameras feed there input into an opencv function that can display adjusted content for a numpy image. This is how I will display the bounding box’s made by YOLO.

Tomorrow I need to move the YOLO algorithm over to Webots. This may be fairly challenging, especially if the pretrained YOLO model can’t detect the OpenGL generated objects !!.