# Zumo Assignment Report

#### **Interaction**

To control the Zumo I took the approach of using Unity as I felt as though it would be suitable for this situation as I have worked with handling the controller input with it before. This was greatly beneficial for creating the manual control for “Task 1”. The user has full control of the Zumo with the DPad on the controller.

The most challenging problem at this stage was putting together the logic for the DPad axis as it was not possible to interact with as a set of 4 buttons due to it being a PlayStation 4 controller.

This required a modifier to be passed in when called as to be able to inverse the negative half of the axis.

#### **Autonomy**

The autonomy is handled by “autoForward()” which will check the sensors for the boundaries of the path and adjust its position according to which side the contact was on. Should nothing be hit the Zumo will continue on its current path and checking for any interrupt calls.

There was not too much of a problem with this task as it was a lot of adjusting values so that the rotations would be reliable.

#### **Turning Corners**

When approaching a wall while in “Auto Mode” if it is detected by the sensor the Zumo will begin to rotate away from the wall as to continue down a path, or the player can take over control to also rotate to go the direction they choose.

#### **Searching Rooms**

When entering a room the user can decide to search left or right, this will do a large sweep and if there is an object detected in the room the buzzer will play. Should there not be anything in the room the buzzer will not be played.

I attempted to implement a GUI display to show when an object has been detected, though this was not finished in time so it has been removed. In its place I added the buzzer as an indicator.