Oceans make up over 70% of the worlds surface. They are vital to all the planet’s life since a large majority of the Earth’s oxygen comes from phytoplankton that live near the surface of the water. It is estimated that over 10 million tonnes of litter end up in the ocean each year. Studies suggest that by 2050 the amount of plastic in the ocean will outnumber the fish in it, with about 15% floating on the surface (1.5 million tonnes). This on-surface rubbish is what the On-water Rubbish Collection robot with Automated sensing (O.R.C.A) targets.

Several solutions to this problem have been created, however, the O.R.C.A based solution offers a novel application that has not previously been explored. O.R.C.A aims to collect rubbish from in-land bodies of water, ‘plastic chokeholds’ , using a conveyor-based system to remove the rubbish from the water.

Keywords: Waste Collection, Microcontroller, Conveyor belt, C++