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Coastal Guardian Detection

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Abstract: The Coastal Guardian Detection system is an innovative project aimed at addressing the growing issue of water pollution in coastal regions. This project involves the development of an intelligent waste collection boat equipped with both automated and manual operational modes. The boat features a built-in waste collection mechanism that efficiently gathers floating debris from the water surface and directs it into an attached waste container for storage. To enhance its functionality, the system integrates an ultrasonic ranger to measure distances and ensure safe navigation. Additionally, a human detection sensor is incorporated to identify the presence of individuals in the vicinity, enhancing safety and enabling real-time monitoring. The detected human activity is displayed on a radar interface, providing situational awareness to the operator. This hybrid system, combining waste management with detection capabilities, offers a practical solution for maintaining cleaner coastlines and promoting environmental conservation.

Keywords: Waste Collection Boat, Ultrasonic Ranger, Human Detection Sensor, Automatic and Manual Operation, Environmental Monitoring

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