

Cleaning Robot - cleaning the world with the support of a mobile artificial intelligence platform

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Goal: Develop a garbage collecting robot to autonomously detect and collect waste, enhancing waste management efficiency.

Achievements:

- It can navigate efficiently with good accuracy of object detection implementing Yolov5s Model for faster inference using Nvidia jetson nano and pickup waste successfully .
- It is entirely mobile and can be control or commands can be given remotely using Raspberry Pi4 working as communicator.
- It currently handles and detect one object at a time, focusing on systematic approach for cleaning/gathering trash.



Future Possible Development:

- Battery issue needs to be fixed to enhance operational capabilities of robot, ensuring sustained performance without draining much power during platform movement and arm movement and carrying it out smoothly.
- Detection results can be further used to analyze type of waste in the neighbourhood differentiating recyclable and Non-recyclable waste for more cleaning efforts.
- Its navigation capabilities can be improved for diverse terrain, increasing its overall versatility and adapting to surroundings in handling environmental challenges.

