

**1**

## OVERVIEW

An autonomous four-wheeled robot traverses an unknown environment to pick up radioactive waste using a manipulator. After picking up the waste, it will be safely disposed of in a bin.

1. Autonomous trash picking robot in unknown environment
2. Software integration, Usage and Implementation documentation for ACME Robotics  
Expected deadline: 12/19/2023

**4**

## DELIVERABLES

## CAPABILITIES

**2**

1. Fully autonomous traversal in unknown environment
2. Identification of waste (Perception)
3. Gripping and detaching the waste from manipulator

The strategy involves utilizing a Turtlebot 3 Waffle Pi, which integrates an OpenManipulator-X gripper module. We plan to implement the Navigation stack to enable SLAM

## APPROACH

**3**