

Task 7: ROS Architecturr Design

In this assignment, you are going to design a ROS architecture for an autonomous wheel chair.

You have the following sensors, actuators and modules:

Sensors (Inputs):

- Camera
- Ultrasonic Sensors
- Motor Encoder

Actuators:

- Motor
- Sound Alarm

Modules:

- Obstacle Detection and Classification
Input: Camera
Output: Array of detected objects and their locations
- Path Planning
Input: Camera, ultrasonic sensors and obstacle detection and classification
Output: Control signals to the motor.
- Obstacle Avoidance
Input: Camera, ultrasonic sensors, path planning
Output: Control signals to the motor.
- Emergency System
Input: Camera, ultrasonic sensors, obstacle avoidance and path planning
Output: signal to trigger the sound alarm in case of a critical problem