RNS INSTITUTE OF TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Personal Assistant Robot

The robot is AI powered and voice controlled. It will recognize the source of the voice issuing the command, follow them around and helps then find objects specified in the voice command.

Methodology:

The robot will be coded in Three main modules, object detection, object tracking and motor control. Object Detection: This module has 2 main functions:

It stores the features of the person issuing the command

If specified, it is responsible of detecting the object issued in the voice command

Object Tracking: This module is responsible for keeping a track of the main identified person and their movement. It will also be responsible for directing the motor movement with coordinates, speed, and angle. It will also play an important role in returning the robot back to the speaker in the shortest path, after finding the object specified (if found). Motor Control: This module consists of the pan and tilt module for camera movement and the motor driver for robot movement. This module is responsible for acting as the eyes and legs of the robot. The pan and tilt module can move up to 300 deg-pan and 180 deg-tilt and using the object detection and tracking module, find/track required object. The motor movement is controlled both the pan and tilt and the object tracking module for various movements. These five motors will be controlled by an Arduino processor. The detection and tracking will run on Raspberry pi 3B +, which will be the brain of the robot

The Robot will be expected to wake up on “ROVER” command and follow the speaker around. When issued the “FIND [OBJECT]” command, it is expected to look around and find the specified object and return to the speaker in the shortest time possible

Name of Team Members

Sl.No	USN	Name
1	1RN17CS058	NIKITHA NARENDRA
2	1RN17CS065	POOJA A
3	1RN17CS057	NIKHIL L
4	1RN17CS121	AKASH B NEELGAR