Project log - Robotica

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Contents

1 Setup

OS	Ubuntu 18.04
	Ubuntu 20.04
ROS version	melodic
	noetic
Webots	R2020b revision 1
Target hardware	Raspberry Pi 4B
	Raspberry Pi 3B+

2 Name

Our team has chosen the name **Change**, which resembles **Chang'e 4** [1], the spacecraft mission part of the second phase of the Chinese Lunar Exploration Program, which achieved humanity's first soft landing on the far side of the moon.

3 Libraries and environment

We have used the **webots_ros** [2] package in order to gain deeper understanding of how to interface ROS nodes with the standard ROS controller for Webots.

We have also studied the ROS documentation [3] in order to install and configure the ROS enviroment and also to understand fundamental ROS concepts related to nodes and topics. Moreover, we set-up the ROS interface in Webots following the cyberbotics documentation [3].

4 Task

Our robot will be deployed in a room (such as the one showed in our demo) and its aim is to identify humans and estimate their relative positions. If the distance between said humans is less that a specified value, the robot will go towards them and invite them to respect social distancing (with both visual and audio output).

5 Extention slots

The robot selected for the given task is the **Pioneer3**.

6 ROS

Our team decided to write all the ROS related code in the file `ros_interface.cpp`.

6.1 Init

References

[1] *https://www.theguardian.com/science/2019/jan/03/china-probe-change-4-land-far-side-moon-basin-crater.*
The Guardian. 3 January 2019. Archived from the original on 3 January 2019. Retrieved 3 January 2019.

[2] *https://github.com/cyberbotics/webots_ ros.*
Github page for the `webots_ros` package from *cyberbotics*.

[3] *https://wiki.ros.org/ROS/Tutorials.*
ROS documentation from ROS.org.

[4] *https://www.cyberbotics.com/doc/guide/tutorial-8-using-ros.*
Cyberbotics documentation.