Human Robot Interaction
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11/20/20

Smart Vehicle Club Chatbot

This chatbot informs you who is in the Smart Vehicle Club, SVC. Using that information, you can assign tasks to members of SVC. Moreover, you can move the SVC simulation vehicle, the GEM, in Gazebo via the chatbot. Finally, there is a funny response implemented into this chatbot.

Functionalities:

1) To find out whose on the team, ask the chatbot some form of, “Who is on the team?” or “Who are the members?”

2) To assign a task, say something like “Task Ben with perception” or “Make Omar work on integration”. You can also say “Task someone with cleaning”. Then the chatbot will ask you who you want on the cleaning task.

- Technically any task should work but here are some of the example tasks the chatbot was trained for: sensor mounts, perception, integration, embedded software, electronics, Lidar, control systems, software, etc

3) To move the GEM vehicle in the Gazbeo simulation, you have 6 options: Left, Right, Forward, Reverse, Flip, and Fast. The chatbot will recognize a simple statement of those entities, like just saying “Flip” or “Forward”. But you can also say things like, “Do a flip”, “Make the GEM turn right”, or “Move the robot fast”.

4) For fun, ask the robot something like, “What are you thinking?” or “Whats on your mind?”. This demonstrates the power of AI as the robot will say something it “wasn’t even programmed to say” (LOL).

Instructions:

1) In order to get the GEM simulation, clone this repository into your ROS workspace (Not into the package folder). Link: https://github.com/robustify/igvc_self_drive_sim

2) Run the commands to export the google application credentials and instantiate gcloud.

3) Run this command: roslaunch homework3 homework3.launch

4) That's it, but note... the mic client is enabled by default. If you wish to disable it, go into the launch file and comment it out. It's clear what lines you need to comment out.

4.5) If you choose to disable/not use the mic client, publish to the chatbot using this command: rostopic pub /dialogflow_client/requests/string_msg std_msgs/String "data: ' '"