Google Summer of Code: 2019

JdeRobot

Application to JdeRobot's projects

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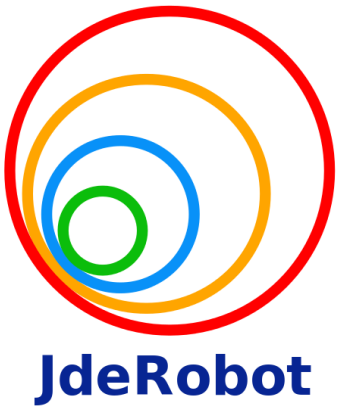

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1 Presentation

I'm Pablo Moreno Vera, a Graduated in Telecommunication Tngineering and Business Administration and Management in URJC. Actually i'm studying a Master's Degree in Telecommunications Engineering. My TFG was based in Robotics, especially in drones and mobile robots in your community, Robotics-Academy. I'm interesting in work with your.

2 Project 1: Robotics Academy: Migration to ROS and Jupyter of exercises on drones

I've done a similiar project in my TFG ROSificating a drone model "iris" so i have some idea on the project. I'll search the TOS-topics of the drones and subscribe to them to get and set commands to control the drones. Tipically the topic used to move the drone is "velocity" and to get the position is "odom". To connect with topics, I'll use the topics messages and send the orders to the drone. Once the topics are subscribe and the message are done, it's necessary to develop the JdeRobot drivers to make the drone usefull in "Robotics-Academy".

For Jupyter, it's necessary to make some changes in the "Robotics-Academy" practice code to load the classes and the functions. First of all, you must open the Gazebo's stage in Juupyter, second, you must import the practice code and just letting one cell with the execute function to program the solution.

3 Project 2: Robotics Academy: Migration to ROS and Jupyter of exercises on mobile robots

This project is similar to the previous project, Project 1, but instear of use the drone topics you must subscribe to the mobile robot topics. The rest of the project is quite similar.

4 Project 3: Robotics-Academy: Robotic arm manipulation with moveit!

For this project, you mmust subuscribe to the Robot-topics and see the message they use. With this messages you can control de movement of the robot. Once this is done, i'll use the "OpenCV" libreary to process the images of the camera and filter the objecto the robot must take. When the object are filtered, you have to control the robot with messages to the topics and take the objects.