This is the Part 2 of ROS task. In this task we have to connect two motors to Arduino and control the speed and direction of motors according to the values measured in Part 1.

To do this task I have created the following:

1. Arduino code: The code first takes the values from the joystick and sends them to the computer through rosserial as done in part one. The data received from the node is applied to control the speed of motor.
2. Motor Driver: L293D Motor driver is soldered in a PCB Board along with different wires,(enA, enB, in1, in2, in3, in 4, Vcc, Gnd , Vin). Then the driver is connected to the arduino via breadboard.
3. Subscriber Node: The program joy_sub_motor_pub.py first takes the values of the joystick from the topics and then publishes it to the new topics motor_x and motor_y which is subscribed by the Arduino.

- Command for terminal: First of all the joy_sub_motor_pub.py program should be saved in the catkin file the run the following code:

  - roscore
  - source/devel/setup.bash
  - rosrun rosserial_python serial_node.py /dev/ttyACM0
  - source/devel/setup.bash
  - rosrun joy_subs joy_sub_motor_pub.py

I have uploaded the following:

I. Arduino code: Joy_Motor_ros.ino
II. ROS Node: joy_sub_motor_pub.py
III. Video demonstration
IV. Picture of the Graph showing the Motor speed variation
V. Node Graph: rqt_graph.png
VI. Pictures of the Physical Model