

AN INTELLIGENT ROBOTICS SYSTEM FOR PICKING UP OF FLOWERS AND VEGETABLES

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ABSTRACT

Humankind has always struggled to give life like qualities to its handicraft. In an aggressive environment it works, in an attempt to find surrogate for himself to carry out his orders. A Robot works as a human. In current state the industries move on automation in robotics to increase productivity and delivery uniform quality. Codification of robotics are commonly used in industries is manipulated, a robotic arm known as place and pick robot. It is open or closed mechanics chain. It rigid link connected by movable arm. In this project, place and pick robot is being plotted by Bluetooth and ATmega328 microcontroller. The arm captures the object by using android application.

KEYWORDS-Robotic arm, Microcontroller(ATmega328), Bluetooth module, DC motor.

I. INTRODUCTION

Place and Pick robotic system is the act of picking up and placing down. It is widely used in industries. Robotic is a limb of physical engineering science and technology. The robotics minimize the human efforts in the tricky operations for lifting heavy weights. For examples in manufacture unit, to pick the items from the conveyor belt and place those for packaging is done by robotics. It is a reprogrammable, multifunctional manipulator designed to move the parts, item, and many special things based on the programmed motion to perform different tasks. In a monotonous task to be done in many times and where rightness should be maintained every time in single task. While executing the robotic system, the cost also will be dominant over based on the function.

II. EXISTING SYSTEM

In the existing system complex mechanisms are used for place and pick operations. The existing system has a very low success rate. And the objects that can be arm by the robot are of definite shape. Hence there are several constraints in the existing system of place and pick robot.

III. PROPOSED SYSTEM

In the proposed system the place and pick robotic arm, according to cost the size of arm will vary. In our system, we are executing a robotic manipulator which can hold small items with

its arms and placethem according to the given control command by the user.

The robotinvolve, they will appear become more flexible, reproduce the human ability and capacity to switch job function is easily.

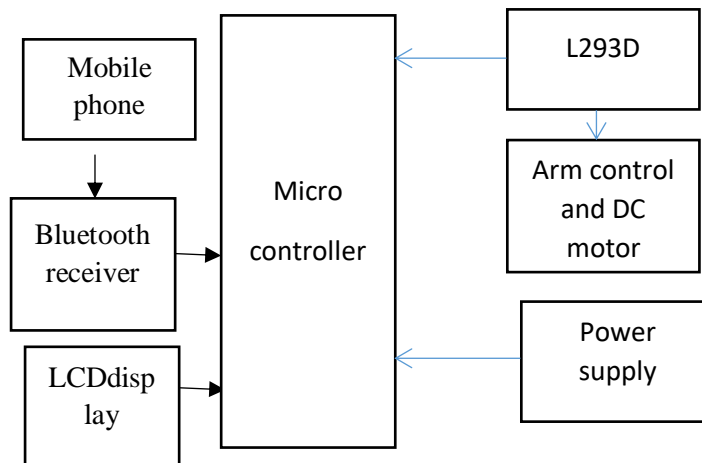


Fig: 1 **Block diagram**

IV.LITERATURE REVIEW

“Arm” indicates an action to pick an object consisting in preventing its motions relative to the hand, possibly in the face of disturbance forces acting on the object itself . Different types of arm have been suggest to improve manipulability of the robotic hands for arm tasks. These are controlled by using wired or wireless systems.In thiswe used to obtained the commands sent by bluetooth to improve the arm process.

V.WORKING MECHANISM

Hardware Description

The pick & place system architecture consists of two main sections. They are,

Robot Section Operation

This robot section consists of moving arm with flexible arm , Bluetooth transceiver; dc motor and LCD interface . The robot will be operated using commands from pc connected through Bluetooth. The arm holds an object on receiving commands ‘a’ it place the flower then by receiving ‘b’ it pick the flower. The DC motor gives the value that is getting applied by the grasper at each and every instant of time. Those commands can be monitored by the Bluetooth operator at the mobile phone.

Control Section Operation

In control section contains bluetooth transceiver and mobile phone. mobile sends user

commands to robotic section through bluetooth Robot Section.

Control Section

The major components in robot section and control section is in robot section we have micro controller and the components like Bluetooth transceiver, LCD and motor driver .In the control section we have only Bluetooth receiver.

MICROCONTROLLER(ATmega328)

ATmega328 is a microcontroller

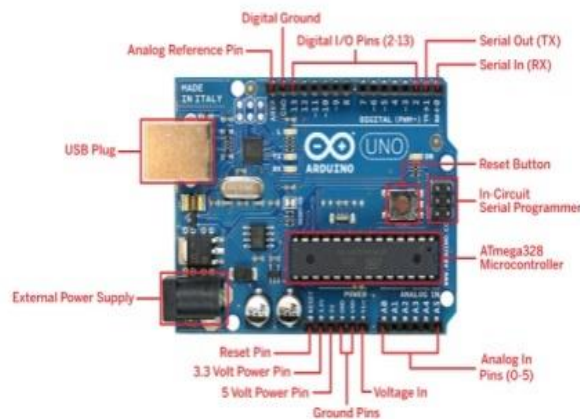


Fig.2 (ATmega328)

L293D DRIVER

The Device is a fossilized integrated high voltage, high current four channel driver at frequencies up to 5khz. H-Bridge circuit is an electronic circuit that allows an voltage to be applied across load in any direction. The driver IC deals with heavy current and due to so much current flow the IC gets heated.



Fig .3(L239D)

PICK AND PLACE

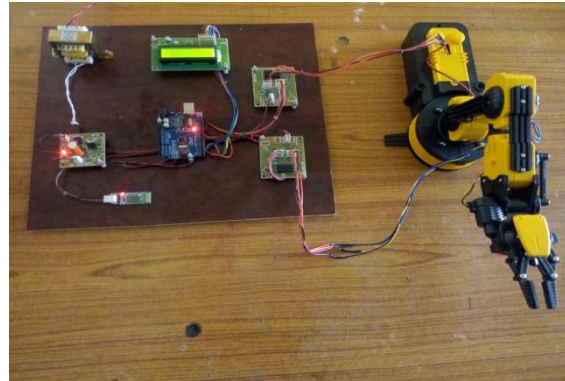


Fig.4(Experimental setup)

The kit consists of the robotic arms to hold an object and also consists of DC motors for arms movement. The kit will have two motors. One is for controlling the arm movement up and down. Another motor is for tighten and loosen the picked object. Those two motors have to drive their input current from the L293D. The kit will have a jaw teeth modeled arms to hold the object strongly. While moving the robot, we can simultaneously perform the place and place functionality if needed.

BLUETOOTH MODULE

Bluetooth module requires a physical and protocol standard. Bluetooth will connect with maximum of 8 devices at a time of radius 10m. This system is called “spread spectrum frequency hopping”. Those the frequency changing almost 1600 times/second.

HC-OS BLUETOOTH

It has used in slave configuration and an substantial solution

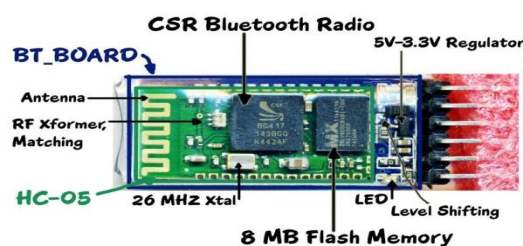


Fig. 5(Bluetooth module)

for wireless transmission. It 6pins has TX, RX, GND,Vcc key and LED. The non- payment transmission rate is 9600kbps.

LCD DISPLAY



Fig.6(LCD display)

LCD exist for liquid crystal; this is a yield device with a finite viewing angle. The high quality of LCD is an output device.when compared with LED of 7 segments, it occurs cost of usage and better with alphabets. Now a days, We have use many kinds of LCD display and our application requires a LCD contain with 2 lines and 16 characters of per line,it gets data from the microcontroller and shows the display command.

DC MOTOR

This is planed to run on dc electric power. These two examples of unmixed designs in ball bearing motor, which is (so long way) and Michael Faraday's homo polar motor (which is unusual), and a newness. So they are not unmixed DC machines in a firm sense.



Fig.7(DC Motor)

VI.CONCLUSION

The arm gives success rates of 93.2% by performed in various real time objects with two features self -adaptively and flexibility. In industrial fields every mechanical part in the proposed grasper is used. This is an advantage over other robotic hand with respect to mass production, with considerable reduction in manufacturing cost. Future Scope: Further improvements will be done for the following two issues in future. First one is enhanced planning that minimize the change of the object orientation. Currently the orientation of the object is formed during the enveloping stage.



Fig.8 (Picking of flower)

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