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# Smart Movement Using Eyeball Pupil Position

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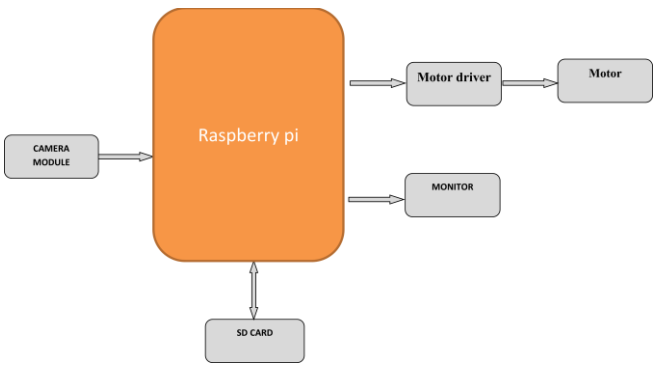
***Abstract :***

***There are different reasons for which people need an artificial of locomotion such as a cursor. The number of people, who need to artificially move with the cursor. Moreover implementing a controlling system in it enables them to move without the help of any other hardware. The idea of eye controls of great use to not only the future of natural input but more importantly the handicapped and disabled. Camera is capturing the image of eye movement. First detect pupil centre position of eye. Then the different variation on pupil position get different command set for cursor. The signals pass through the PC to automatically cursor move itself. The movement of the cursor capture and control the direction to enable the cursor to move forward, left, right and stop.***

## I. INTRODUCTION

The power of automation has a wide range in changing the life of disabilities. Some peoples cannot able to operate wheelchair because of an illness. The idea of eye controls of great use to not only the future of natural input but more importantly the handicapped and disabled. Moreover implementing a controlling system in it enables them to operate wheelchair without the help of another person. It is more helpful to handicapped peoples. Those are need to operate wheelchair without hand this one is most useful those can operate cursor by movement of eye.

## II. BLOCK DIAGRAM




## III. DC MOTOR

A DC motor is a type of electrical machine that converts electrical energy (DC) to mechanical energy. DC motor uses the magnetic forces for the conversion. The internal current flow is periodically changed by using some internal mechanism. The external magnetic field is used to produce the rotary motion. The Dc motor works on the principle that when a current carrying conductor is placed in an external magnetic field it will experience a force proportional to the current flowing through the conductor and the strength of the external magnetic field. There are two types of DC motors. They are brushed DC motors and brushless DC motors. In our project we are using a brushed DC motor which will operate in the ratings of 12V DC 0.6A which will drive the flywheels in order to make the robot move.

The basic component of a DC motor is a current carrying armature which is connected to the supply end through the commutator segment and brushes. The armature is placed between two permanent magnets which produce a magnetic field

## IV. MOTOR DRIVER

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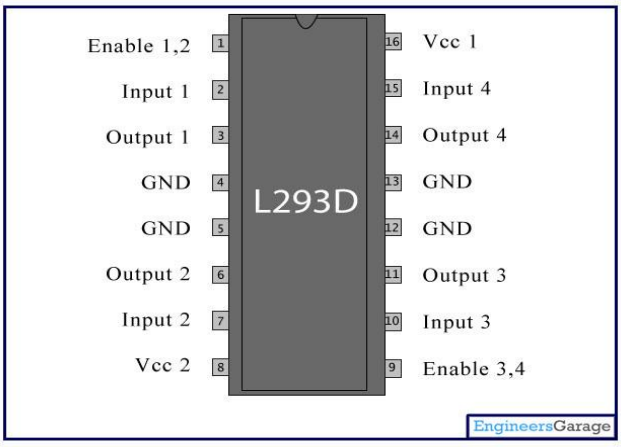


L293D is a dual H-bridge motor driver integrated circuit (IC).Motor driver's act as current amplifiers since they take a low-current control signal and provide a higher-current signal. This higher current signal is used to drive the motors.

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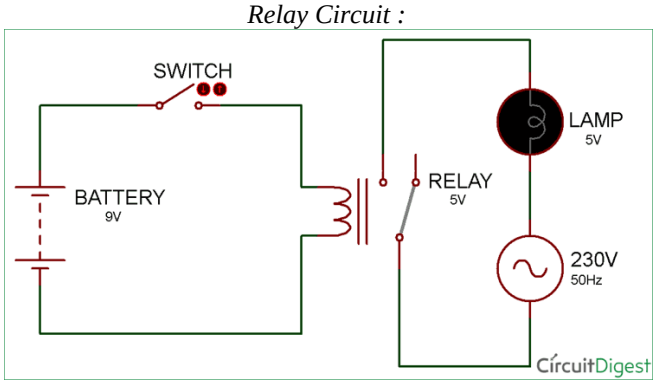
L293D contains two inbuilt H-bridge driver circuits. In its common mode of operation, two DC motors can be driven simultaneously, both in forward and reverse direction. The motor operations of two motors can be controlled by input logic at pins 2 & 7 and 10 & 15. Input logic 00 or 11 will stop the corresponding motor. Logic 01 and 10 will rotate it in clockwise and anticlockwise directions, respectively. Enable pins 1 and 9 (corresponding to the two motors) must be high for motors to start operating.

## V. RELAY

Relays are switches that open and close circuits electromechanically or electronically. Relays control one electrical circuit by opening and closing contacts in another circuit. As relay diagrams show, when a relay contact is normally open (NO), there is an open contact when the relay is not energized.

*Relay Circuit :*




## VI. SOFTWARE PART

OpenCV is an open source C++ library for image processing and computer vision, initially developed by Intel and now supported by Willow Garage. It is mainly used for developing advanced image processing and computer vision applications. OpenCV-Python makes use of Numpy, which is a highly optimized library for numerical operations with a MATLAB-style syntax. All the OpenCV array structures are converted to and from Numpy arrays. This also makes it easier to integrate with other libraries that use Numpy such as SciPy and Matplotlib. Image Processing with OpenCV. Image processing is a method to perform some operations on an image, in order to extract some useful information from it

## VII. PYTHON

Python is an easy to learn, powerful programming language. It has efficient high-level data structures and a simple but effective approach to object-oriented programming. Python's elegant syntax and dynamic typing, together with its interpreted nature, make it an ideal language for scripting and rapid application development in many areas on most platforms. The Python interpreter and the extensive standard library are freely available in source or binary form for all major plat forms .

Application:

- BIO-GADGETS applications
- Human-computer interaction in universal computing
- Motor driver
- Eye trackers
- Controlling wheelchair.

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