Finger Driven Bot

Idea

This project is about making a four wheeled bot which can be operated a using the motion of a person's finger. It will translate the motion of user's finger in to control commands by detecting and classifying them utilizing a small permanent magnet, secured on the finger, and an array of magnetic sensors mounted on a platform around the finger.

Project Overview

This Project consists of a Microcontroller Units, a four wheeled bot and Hall Effect sensors. The bot is made up of High torque Geared DC Motors, the Motors Directions can be changed through the set of instructions given from the Hall Effect sensor and the action of these Instructions is already loaded into the Microcontroller using Embedded C programming.

An embedded system is a combination of software and hardware to perform a dedicated task. Some of the main devices used in embedded products are Microprocessors and Microcontrollers.

Microprocessors are commonly referred to as general purpose processors as they simply accept the inputs, process it and give the output. In contrast, a microcontroller not only accepts the data as inputs but also manipulates it, interfaces the data with various devices, controls the data and thus finally gives the result. The project consists of the Hall Effect sensors, microcontroller, H-Bridge driver.

Implementation steps -

- Hardware Assembly and soldering.
- ADC implementation
- PWM implementation
- Algorithm and Integration of all modules

Parts required –

- Hall effect Sensors
- H-Bridge Driver
- Dual Gear Box
- Two DC motors
- 12V Battery
- Vector Board
- Breadboard
- Few connecting wires
- microcontroller

Broad Vision

The same logic which is used in this project can be extended to create a Tongue Driven Wheelchair.

The Tongue Drive Assistive technology for paralyzed persons using microcontrollers is an exclusive project that can move the wheel chair

according to the instructions given by the tongue and output commands by above said microcontroller.

Cost estimate – Rs. 2000

Team –

- Vishal Meena
- Shreyansh Barodiya
- Vishal Saini
- Tapish Kothari