GESTURE CONTROLLED BOT(CAR)

GROUP MEMBERS

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INTRODUCTION

We are making a bot which will be controlled using hand gestures. The command signals are generated from these gestures using image processing.We will be using MATLAB for this purpose.The continuous images captured by the camera will be transmitted to the PC where they are processed and its output will serve as input for the bot and bot will move accordingly.

MOTIVATION FOR PROJECT

Motivation behind this project is to learn and discover new techniques of controlling electronic gadgets.Here we are trying to control a bot by using hand guestures and image processing.

CONCEPTS BEHIND THE PROJECT

1. IMAGE PROCESSING

We will take images as input and using colour detection(also detecting shape) which will create a specific set of commands which will be further given to the bot.

2.   WIRELESS COMMUNICATION

The commands generated will be transformed to the Arduino on the bot using a Bluetooth module or xbee wireless module.

3.   ARDUINO

We will be using the arduino programs to act as an interface between the commands generated by the C++ program and the commands that will be given to the bot.

Week 1
- Planning the design of the bot and electrical circuits and studying about wireless/Bluetooth module.
- Start learning about MATLAB which will be used for image processing.
- Buy the different components of the bot.

Week 2
- Completing the mechanical part of the bot.
- Starting the electrical part of the bot.

Week 3
- Complete the electrical part of the bot
- Complete the arduino coding.
- Start the coding for image processing.

Week 4
· Complete the coding part.
· Using Bluetooth/wireless module to transmit the input to the bot.

Week 5
· Testing of bot and fixing the problems (if any).
· Add some finishing touches i.e. in the coding or any other area where required.

Week 6
· This week is reserved for delay in any work.

Components required

- Arduino
- PCB and basic circuit components (resistors, capacitors, male connector, microcontroller ,IC's etc.)
- Motors
- Chassis
- Wheels
- Heat Sinks
- Bluetooth module or wireless module (Xbee).
- Camera (if possible mobile camera can be used)
- Multimeter
- Solder gun, etc.

Estimated Price : 7000INR