ITSP 2016

IMAGE PLOTTER

DESCRIPTION:

Our project's aim is to create an image plotter which draws images fed to it via a microcontroller.

The given image would be processed by MATLAB. The processed image would be sent to arduino which would control the motors accordingly.

the image (text or drawing) will be drawn.

FUTURE EXTENSIONS:

1. Image plotter to be used to write text in different fonts.
2. Integrating the device with an app which sends the image to the plotter.
3. Option of plotting a multi-coloured image will also be added to it.

COMPONENTS:

1. Arduino
2. Servo motors.
3. Stepper motors.
4. Rack and pinion.
5. Aluminium bars.
6. Other hardware(nuts, bolts,etc)
7. Electronic items (wires,pcb,etc)

COST:

Estimated cost around Rs 6000.
approximate cost of major components:
arduino : 500
stepper motors : 450
servo motors : 600
motor drivers(2) : 1200
aluminium bars : approx. 1000
bearings : approx 1000

aprox price of other components(eg.nuts bolts, wires, gear racks, adapters, relimates etc.) = 1500

PLAN OF ACTION:

(Working Dates : 15 May – 30 June)

WEEK 1:
1. Getting the required components.
2. Deciding the mechanism of the hardware.
3. Learning arduino based coding and image processing.

WEEK 2 :
Getting the mechanical aspect done.
1.Search for the right materials.
2.Deciding the dimensions.
3.Cutting the material into pieces.
4.Build the mechanical part.

WEEK 3:
continue with the mechanical part.
Doing the electronic part.
1. Connecting the motors with the mechanical parts.

WEEK 4:
Coding
1. Learn MATLAB.
2. Learn how to use serial communication between MATLAB and arduino.
3. Program the bot.
4. Learn how to convert images to motion of the bot in MATLAB and send it to Arduino

WEEK 5:
Testing and debugging,
1. Test for simple figures.
2. Tes***t for images , texts and fonts.***
3. Test for coloured images.

SKILLS TO BE LEARNT:
1. Image processing,
2. Arduino based coding.
3. Controling servo and stepper motors.

TEAM MEMBERS:

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