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# Eye Ball Controlled Wheel Chair for Paralyzed Patients

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**ABSTRACT:** A novel design of an embedded cardio-respiratory monitoring system for wheelchair users is proposed. The entire system is composed of a sensor node, and a cloud server. The sensor node contains two parts of an temperature and blood pressure sensor and panic button. The former is used to obtain continuous vital-sign signals, and the latter processes the sampled signals to estimate the pulse rate and temperature level, implemented in an embedded system to achieve a fully integrated radar system. This is used to sense the movement of the eye ball's direction using eye ball sensor (Straight Command, Left/Right Command, Stop Command).

**KEYWORDS:** Text detection, Inpainting, Morphological operations, Connected component labelling.

## I. INTRODUCTION

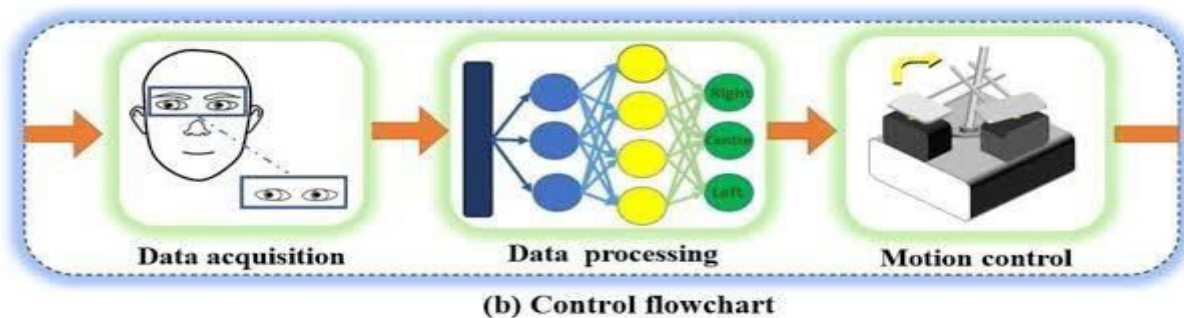
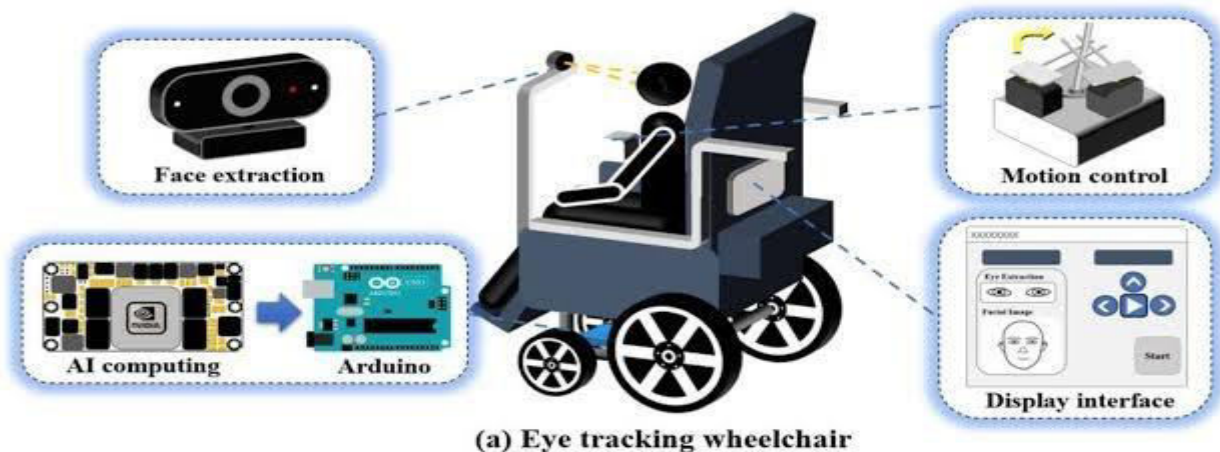
This project is an attempt to make lives of the people suffering from this phenomenon simple and by simpler which will thereby reinstate their confidence and their happiness. The idea is to create an Eye Monitored System(EMS) which allows movement of the patient's wheelchair depending on the eye movements. We know that a person suffering from quadriplegia can partially move his eyes and tilt his head, thus presenting an opportunity for detecting those movements. We have created a device where a patient sitting on the Wheel Chair assembly looking directly at the eyeball sensor, is able to move in a direction just by looking in that direction. The signals are monitored by a script, which will then guide the motors wired to the AtMega328 Microcontroller over the Serial Interface to move in a particular direction. The system is cost effective and thus can be used by patients spread over a large economy range.

## II. RELATED WORK

An eye-controlled wheelchair for paralyzed patients is a promising solution to provide greater mobility and independence to individuals with physical disabilities. The proposed system would utilize a camera mounted on the wheelchair to track the movements of the user's eyes, and use this information to control the direction and speed of the wheelchair. The system would require the user to wear a pair of eye-tracking glasses that would capture their eye movements and send the data to the camera on the wheelchair. The camera would then process the data and convert it into signals that would control the motorized wheels of the wheelchair. The user would be able to move the wheelchair in any direction by looking in the desired direction for a certain period of time. Additionally, the eye-controlled wheelchair would provide greater freedom and independence for users, enabling them to go where they want to go without needing assistance from others.

## III. EXPERIMENTAL RESULTS

Figures shows the results of eye ball controlled wheel chair for paralyzed patients the figure shows the exact experimental results. This is used to sense the movement of the eye ball's direction using eye ball sensor.



### III. CONCLUSION

This paper is implemented using various components, the project is just a proto type if we make this project as commercial project, then definitely useful to all the disabled people, who are unable to move and unable to drive normal wheel chair their own. With their eye movements they can move wheel chair right, left, front, and back directions with Eyeball sensor which is a highly sensitive sensor and capable of detecting the tilt. The system can be controlled by voice and the accidents are prevented by the use of ultrasonic sensor. The developed system is a supporting aid for paralyzed patients. The future scope of the project can be extended using wireless technology, and intelligent hand gesture wheel chair.

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