

“VOICE RECOGNIZATION AND ACCELEROMETER BASED WHEELCHAIR”

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*A project report submitted in partial fulfillment of the requirement for the
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ABSTRACT

This project describes the significant design to build a voice-controlled wheelchair. This project is intended to increase the ease of mobility for disabled/injured people. In India there are about 80 million people with various disabilities. Among this population about 18.4 million people suffer with locomotive disability, 32.8 millions suffer with various physical disabilities and 8 million are visually impaired. Hence the idea of voice or joystick or accelerometer activated automation system emerged to make physically challenged people independent to operate wheelchair. The design would allow these people to live more independently. Presently, people use blow-tubes or chin-joysticks to control motorized wheelchairs. Speech recognition is a prominent technology which can give an alternative to people to interact with machines or devices especially to those who are quadriplegics. This system can control movements of a wheel chair with voice commands or joystick or accelerometer.

We have resolved the disabled problems by implementing voice control interfacing over a microphone, or fingers movements over the joystick, or head movements over a 3D accelerometer for the wheelchair. In this project, the manual wheelchair has been modified so that it can be actuated by two DC motors. The motions of the wheelchair are then controlled by the verbal instructions or finger or head movements of the user.

The results show that the design is applicable and feasible. This project processing can be done in real-time and is therefore deemed a viable alternative to present methods of motorized wheelchair control. Key feature of this system is that it can be trained in native languages.