

**AN ADVANCE TOWARDS SCHEMING OF ELECTRIC VEHICLE****Bichala Annapurna¹, Anil Sooram²**¹M.Tech Student, Dept of ECE, Vidya Vikas Institute of Technology, Chevella, R.R Dist, T.S, India²Associate Professor & HOD, Dept of ECE, Vidya Vikas Institute of Technology, Chevella, R.R Dist, T.S, India**ABSTRACT:**

Independent mobility is an important constituent in preserving physical as well as psychosocial health of a person. The designing of an electric vehicle is separated into quite a lot of systems and which are yet again subdivided into numerous subsystems to decrease difficulty. Designing of electric vehicle scheme is power-driven by two batteries accumulated below seat that permit chair to cross additional obstructions than would or else be probable, however it moreover complicates system dynamics as well as makes control additionally tricky. For persons having blind, autonomous mobility augment vocational as well as educational opportunities, diminish confidence on caregivers and endorse feelings of self-sufficiency. Hence an intelligent vehicle was introduced for blind which is powered by rechargeable battery and period of charging is extremely less and can be functional in usual as well as in manual mode. The recommended design of an instantaneous and absolute face recognition system consists of subsystem of face detection, a down sampling component in addition to a face detection subsystem. The vehicle is used for blind as well as elders and most important benefits are: The text to speech as well as speech to text servicing is offered for GSM communications; the face recognition is moreover added by means of methods of digital image processing; the vehicle efforts on basis of voice commands; Electronic Control Unit is heart of vehicle which manages the entire functions of electric vehicle.

Keywords: Electric vehicle, Face recognition, Independent mobility, Intelligent vehicle, Voice commands.

1. INTRODUCTION:

Even though advantages of powered mobility are recognized, the safety concern connected with process of powered vehicles often put off rehabilitation practitioners from recommending powered mobility. Hence an intelligent vehicle was introduced for blind which is powered by rechargeable battery and period of charging is extremely less and can be functional in usual as well as in manual mode [4]. The designing of an electric vehicle is separated into quite a lot of systems and which are yet again subdivided into numerous subsystems to decrease difficulty. The ultrasonic sensor is employed for measuring how distant an object is. One of the recommended ultrasonic sensors is Ping which is used in vehicle to become aware of the problem. The Ping sensors send a concise chirp by its ultrasonic speaker and make it promising for BASIC Stamp to compute time taken for the return of echo towards its ultrasonic microphone [13]. The BASIC Stamp commence by sending Ping sensor a pulse to commence dimension. Light Detection and Ranging is an optical distant sensing knowledge that can calculate remoteness to or other properties of a target by illuminating target by light, regularly using

pulses from a laser [8]. Uncovering of road boundaries as well as obstacle is essential in support of independent vehicle navigation. The Light Detection and Ranging is used to take out line segments from raw information of sensor in polar coordinates. We are using ARM Processor in support of digital image processing, thus we expand an android application run in ARM in support of speech to text as well as text to speech [1]. So person can make use of voice commands for GSM communications. The message after received is renewed to speech by this application. An android application in support of speech recognition is also prepared to distinguish every command. A text-to-speech system converts usual language text into speech. Synthesized speech is created by concatenating pieces of confirmed speech that are accumulated in a database [11]. By means of android, a voice guided navigation scheme is made by interfacing with GPS map thus blind can discover destiny and can turn up at place with assistance of vehicle. The recommended design of an instantaneous and absolute face recognition system as shown in fig1 consists of subsystem of face detection, a down sampling component in addition to a face detection subsystem [3].

The subsystem of face recognition makes use of Eigen face algorithm. The complete system interface by means of a camera, transmit the video information towards face recognition subsystem, which in turn transmit noticed faces towards face recognition subsystem using the down sampling component. The face detection system repeatedly identifies a person from digital image otherwise a video source. Pre-processing will load image and make sure contrast, as well as clarity [14]. If the parameters are off from needed values, alterations are performed and this will make sure that image is appropriate for processing. If pre-processed picture doesn't convene the needed configurations then it might not be capable to make out if there is any sign in image [9] . The electronic control unit is heart of vehicle that manages general performance of vehicle.

2. METHODOLOGY:

Independent mobility is an important constituent in preserving physical as well as psychosocial health of a person. For persons having blind, autonomous mobility augment vocational as well as educational opportunities, diminish confidence on caregivers and endorse feelings of self-

sufficiency. A group of features in this vehicle which makes it noticeable from previous suggested vehicles [7]. The vehicle is used for blind as well as elders. The most important benefits are: The vehicle is considered in such a way that it can go up footpaths; The GPS with map is employed to discover the location; Sonar, as well as IR sensors are used to notice and keep away from obstacles; digital image processing based traffic signal recognition is used to become aware of traffic signals; The text to speech as well as speech to text servicing is offered for GSM communications; The face recognition is moreover added by means of methods of digital image processing; The vehicle efforts on basis of voice commands; Electronic Control Unit is heart of vehicle which manage the entire functions of electric vehicle [2] [16]. The vehicle can be functional manually in addition to automatically. If vehicle is in automatic means, subsequently while starting sonar begin to sense obstruction, if obstacles are not there in front of vehicle subsequently it make sure whether it is in road or not. If it is in road subsequently vehicle will make sure for traffic signals. If any traffic signal is set up subsequently traffic guidance unit direct vehicle movement besides vehicle is

directed by GPS code guidance component [12]. When any obstruction is noticed subsequently it will make sure is there any sonar non-active. If yes, subsequently vehicle will shift towards direction to keep away from obstruction else vehicle stops. The person can make use of voice commands in support of GSM communications. With assist of text to speech as well as speech to text function person can read as well as send messages besides calling [5]. With assist of face detection, blind can become aware of persons.

3. DESIGN OF ELECTRIC VEHICLE:

The electric vehicle includes a car seat, two pneumatic tyres as well as two castor wheels that are mounted on metal framework. The scheme is power-driven by two batteries accumulated below seat that permit chair to cross additional obstructions than would or else be probable, however it moreover complicates system dynamics as well as makes control additionally tricky [15]. Optical position encoders are set up in casings of wheelchair motor. These sensors make available response in support of speed as well as position control. There are circuits in support of power supply filtering, motor

procedure, reaction control, as well as independent control. The alternative of operate with short voltage motors is associated with protection concerns [10]. The DC-DC converter is to control power delivered towards motor; the controller produce a square voltage waveform according current error; the gate drive circuit advice the state of switches of DC-DC converter; the output filter decrease ripple current in motor to make available small losses [6]. The power supply of motors comes from two power converters that are supplied by three batteries in a sequence connection which can be recharged from mains system.

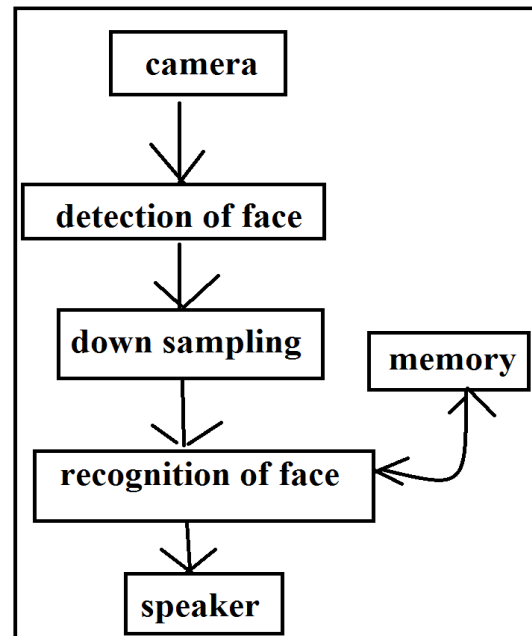


Fig1: An overview of Face Recognition

4. CONCLUSION:

Although benefits of powered mobility are recognized, the safety concern connected with process of powered vehicles often put off rehabilitation practitioners from recommending powered mobility. The power supply of motors comes from two power converters that are supplied by three batteries in a sequence connection which can be recharged from mains system. The most important benefits are: The vehicle is considered in such a way that it can go up footpaths; The GPS with map is employed to discover the location; Sonar, as well as IR sensors are used to notice and keep away from obstacles; digital image processing based traffic signal recognition is used to become aware of traffic signals. An android application in support of speech recognition is also prepared to distinguish every command and a voice guided navigation scheme is made by interfacing with GPS map thus blind can discover destiny and can turn up at place with assistance of vehicle. The electronic control unit is heart of vehicle that manages general performance of vehicle. The DC-DC converter is to control power delivered towards motor; the controller produce a square voltage waveform according current error; the gate

drive circuit advice the state of switches of DC-DC converter; the output filter decrease ripple current in motor to make available small losses.

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