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Vehicle Security System using Motion Sensors

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Abstract: ***A lot of advancements in science and technology have been observed in last decade. Children used to play in cars and by mistake they lock themselves in the car. As the parents were unaware of this, children face the problem of suffocation which may lead to their death. This concept is developed to avoid this kind of disasters by using the advanced technology such as motion sensors. when the sensor detects any abnormal motion in the vehicle the oxygen is supplied inside the vehicle through oxygen cylinders.***

Keywords: PIR Motion sensor, abnormal motion detection, suffocation, wireless connected device.

I. INTRODUCTION

Modern automobiles are geared up with a massive number of sensor systems that make sure a high stage of comfort and safety. Each sensor communicated with the electronic control unit of car with the aid of sending alerts to Its state. Mostly High resolution cameras are used to detect the human motion it requires a high maintenance and cost effective. Now a days the usage of the motion sensors and the wireless communication is much prior to any other. For the existing system the highresolution cameras and video based detection is used. To overcome the drawbacks, using the sensors.It is widely acknowledged that the safety measures should be taken while the car is parked .in this idea we are coming with the safety measures children who are playing around the vehicle when the vehicle is parked and sometimes they may get in to the car and locked themselves inside the vehicle by unaware of surroundings which may rises to certain consequences which is impossible to overcome due to lack of knowledge at their age so they need help from outside.If any individual like owner or parent notices that they are locked inside the vehicle that they are trying to come out of the vehicle so they can get the child out of the vehicle .in other case if no one noticed the child ,the child should wait till someone notices him or until the owner of the vehicle arrives if he can't get help with in certain time period it may leads to drop of oxygen levels which causes suffocation that may leads to unconscious and also it may causes death There are many vehicle security systems which are used for detecting the abnormal behavior of the driver like alcohol detection and sleepy gesture when the vehicle is in motion here we come to know that there are very less safety measures for the parked vehicles to overcome the above scenario by using PIR motion sensor which are placed inside the vehicles for detecting the abnormal behavior or motion inside the vehicle. Which has micro-controller and Bluetooth or wi-fi connected devices when the child has locked inside the vehicle and he tries to break and come out of the vehicle then the PIR motion sensor in the vehicle detects the motion and sends an alert message to the connected device .so that the owner can come to know that someone is present in the car and he may conform so that the child can get help from the owner so that the child can be rescued but this process takes some time to the owner to check the vehicle if it takes more time the child can't get enough oxygen supply inside the vehicle so we are placing oxygen cylinder inside the vehicle to supply the oxygen for the child . motion sensor detects the motion the oxygen cylinders valve opens with the help of the micro-controller and there by supplies the oxygen inside the vehicle so it provides some more time to the owner for rescue child.

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II. LITERATURE SURVEY

[1]video based abnormal driving behavior detection via deep learning fusions:

Abnormal driving is defined because the phenomenon that the motive force's capacity to force is distracted with his or her focus on other activities which are not related to normal driving there are some abnormal driving behavior's like distracting driving behavior that include physical comfort of driver like smoking drinking eating configuring the aircon.Abnormal behavior that leadsThe driver's need for distracting conduct, which includeusing cellular gadgets and so forth in this have a look at seen light digital cam is used to store high-end films of driving behavior of the driver and deep gaining knowledge of primarily based fusion models of three novels are full stuffed the video-based totally bizarre using conduct detection.

Draw backs:

The above existing system requires high maintenance and it only detects the motion in driver position.

The cost of manufacture and maintenance is so high. this system needs high technical support.

The implementation is little bit hard. It can't detect the presence of any if present inside the vehicle.

[2]Car alarm detection device:

Car alarm detection is nothing but it is like anti-theft solution for vehicles. if any thief break into the vehicle for committing any robbery inside then the led present inside the vehicle detects and then with the help of Arduino nano and GSM module and then the motion sensor detects the

thief and sends a message to the owner so that he can notice the car.so that he can catch the culprit. The thief who is doing robbery he can't know that the owner is arriving, this directly sends the notification to the owner and this doesn't make any sound inside the car.

Draw backs

It detects if only person tries to break the glass and enter when it is locked.but it can't detect if the person tried to open the car door with a fake key .in this case it doesn't know whether It is owner or the thief.

[3]ADVANCED SECURITY SYSTEM FOR CAR:

The superior vehicle security device is accomplished by the usage of an embedded device incorporated with a secret agent camera that is constant inside an automobile and fed with the input of the sensors and that is linked to all doorways of the auto. If the car door is open unknowingly or the snooped by using a thief then the spy digital camera turns to that aspect randomly and captures the individual's face and the pictures could be stored inside the database and it's going to ship a mail to the person's mail identity. So the user can document a complaint to the police with the evidence of those photos. By this system we will realize that who attempts to enter into the automobile and steal our automobile, similarly the statistics are uploaded to the cloud for future development and we will locate the place which is having this form of lawsuits, by using the usage of this gadget we are able to lessen crime stage for specific regions.

Draw backs

The spy camera which is fixed inside the car only captures the image or persons face but we cannot find the identity of the person if he covers himself with mask.

III. PROPOSED SYSTEM

The proposed system makes use of the PIR Motion sensor which makes easy to detect, when a person or child accidentally locked inside the vehicle then sensor sends an alert message to connected Bluetooth or wi-fi devices of owners and it may take certain amount of time to rescue child .till the owners arrival we can't expect the safety of child the situations like this causes drop of oxygen and it may leads to suffocation and also to death .so to eradicate the situation we can make use of the microcontroller connected to the sensor and the oxygen cylinder placed inside the vehicle will turn on and the child who is locked inside can get the supply of oxygen if it takes time duration also we can expect that the child can be safe.

IV. MODULES

A.PIR Motion Sensor

B.Wireless Bluetooth

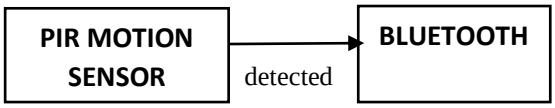
C. Alert Message

D. Microcontroller

E.Oxygen Supply

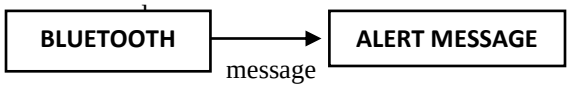
PIR Motion Sensor:

PIR sensor is a motion detection sensor which commonly used in human motion detection and other gadgets like controlling the car doors. PIR motion sensor uses the microcontroller connected to the vehicle and detects the motion passes the alert message through Bluetooth.



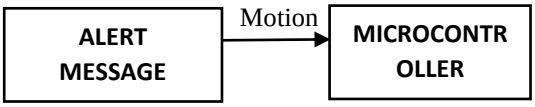
Wireless Bluetooth:

When the PIR sensor detects the motion it communicates through wireless Bluetooth or Wi-fi.



Alert Message:

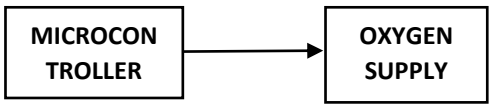
Alert Message is sent to the owner's mobile using Bluetooth or wi-fi that the action is required.



Detecti on

Oxygen Supply:

Using the microcontroller connected to the PIR sensor and oxygen cylinder. Oxygen supplied and therefore the life of child can be saved.



Turns On

Passive infrared sensor works with an microcontroller that connects the microcontroller of vehicle door and when door is stuck or locked without using an key then the microcontroller of vehicle passes the signal to the passive infrared sensor and sensor starts detecting the abnormal motion in the vehicle and passes a alert message to the owners mobile or any other connected devices through Bluetooth or wi-if and alerts the owner and the micro controller connected to the oxygen cylinders turns on the oxygen ports and oxygen is supplied in the vehicle to avoid the suffocation of child and therefore the child can be rescued.

V. ARCHITECTURE DIAGRAM

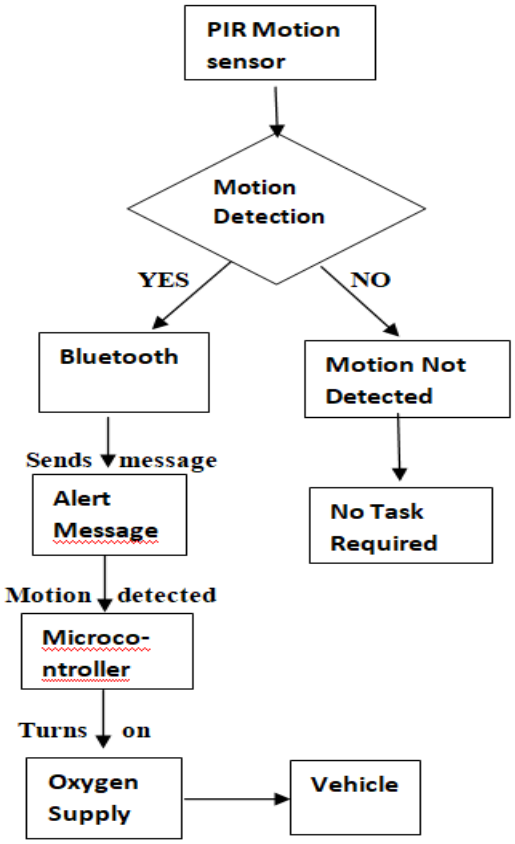
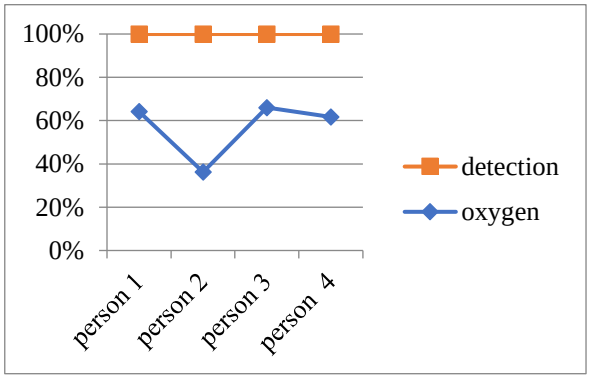


Fig. 1 Architecture diagram

A passive infrared sensor is an sensor that measures radiating infrared light from items in its subject of view. They are most commonly used in passive infrared sensor primarily based movement detectors. Passive infrared sensors are usually used in protection alarm and automatic to lighting packages. Passive infrared sensors detect standard motion however does not deliver facts that what or who was moved. For that motive, an energetic Infrared sensor is needed.When the passive infrared sensor detects the motion it communicates through wireless Bluetooth or Wi-fi.Alert Message is sent to the owner's mobile using Bluetooth or wi-fi that the action is required.Using the microcontroller connected to the PIR sensor and oxygen cylinder. Oxygen supplied and therefore the life of child can be saved.

VI. GRAPH



Oxygen supply

VII. CONCLUSION:

OurIOT system is tested. The device is able to detect motion in vehicle and sms alert is send to the owner's mobile and the oxygen supplied in the vehicle to avoid suffocationso that the child can berescued.

FUTURE ENHANCEMENT:

The system can be enhancedby adding sensors such as oxygen level detection and time duration alert.This could help the owner to reach vehicle with in time limit.

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