

ACCIDENT DISCOVERY IN CAR WITH IRIS ACKNOWLEDGEMENT SECURITY

Dharini K

Department of Electronics and communication
M.Kumarasamy College of Engineering
Karur, India
dharinikandasamy@gmail.com

Gokulapriya P

Department of Electronics and communication
M.Kumarasamy College of Engineering
Karur, India
priyagokul19@gmail.com

Abstract— Car crashes are one of the main sources of fatalities. A basic pointer of survival rates after an accident is the time between the disaster and when emergency remedial staff are dispatched to the setback range. By wiping out the time between when a setback happens and when the masters accessible as needs be are dispatched to the scene reduces passing rate and we can save lives. One approach to manage wipe out the deferral between accident occasion and authority accessible if the need arises dispatch is to use in-vehicle customized disaster area and cautioning systems, which sense when a car crash is most likely going to happen and right away prompt emergency happened. . Air defilement and quality watching is basic these days as it specifically influences human prosperity. Air sullyng is on the climb as a result of different anthropogenic activities and its watching is of basic hugeness to ease certain measures to control it. In this paper we put forth a straightforwardness and low-control sensor based structure for air quality watching. Another objective of this paper is towards completing the Iris Recognition System (IRS) for ensuring security and also prosperity of proprietor of the vehicle. Iris Recognition is a methodology for biometric approval that uses outline affirmation frameworks in light of iris photos of an individual's eyes. It is seen as the most consistent, strong and exact biometric recognizing evidence system open.

Keywords— *In-vehicle automatic accident detection, Iris Recognition System, Security, Biometrics*

I. INTRODUCTION

The GPS based mishap distinguishing proof module contains a Micro Electro Mechanical System(MEMS), vibrating sensor, fire sensor, infrared sensor and a GPS module associated with the processor unit. Right now of mishap, the vibration sensor or MEMS or fire sensor identifies the mischance gives the data to the microcontroller, which will show the data on LCD, switch on the bell unit and sends the data to the rescue vehicle, police and proprietor/guardians through GSM organize.

The grouping of air contaminations, for example, CO₂, CO, SO₂, and so forth. The urban regions with overwhelming movement fixation and modern ranges considerably affect the nearby air contamination. Since the air contamination observing stations are exorbitant as are constrained in number, we have thought of this framework which is a little and compact estimation framework which incorporates different

gas sensors, (for example, CO, CO₂, NO₂, O₃ and so on.) and microcontroller that can be utilized by various individuals.

Among the beforehand specified physical qualities, the iris affirmation procedure is considered as the most unfaltering and reliable confirmation technique. Iris Recognition System is as an automated technique for biometric ID that uses logical case affirmation methodologies on pictures of both of the irises of an individual's eyes, whose sporadic cases are novel, stable, and can be seen from some partition.

A nice Iris affirmation biometrics is depicted by usage of a component that is; exceedingly exceptional so that the likelihood of any two people having a comparative trademark will be immaterial, stable so that the component does not change after some time, and be easily discovered remembering the true objective to offer solace to the customer, and expect trickiness of the component.

II. EXISTING SYSTEM

A. Road Accidents

The principle goal of this venture is to recognize the vehicle mishap and transmit the area of the mischance with the data of casualty and sort of mishap to the restorative help focus and police control room. So medicinal help focus and police control room will get the correct area by the topographical co-ordinates transmitted by means of message with the assistance of guide.

The primary point of is to outline an ARM based GSM and GPS mishap recognition and following framework. At the point when a mishap happens, MEMS gets irritated and sends yield flag to the processor LPC2148 so that the area is distinguished utilizing GPS. On the off chance that any fire mischance happens the fire sensor identifies the fire and educate to the processor which will send the points of interest to guardians/police/emergency vehicle through GSM arrange.

As the ARM processor requires 3.3 volts of supply, so a phase down transformer of 230/12V is used to get the required AC yield. To change over that AC supply to DC supply is done by using rectifier. To get yield voltages of +5v and +12v we are using voltage controllers 7805 and 7812.ARM processor involves two techniques for operation i.e., program mode and run mode. Program mode is used for dumping of the

program into ARM processor from any external contraption, for instance, PC. Run mode is used for the execution of program. This straightforward banner is changed over into modernized movement by using internal ADC of and accordingly the propelled banner is given to ARM processor.

We make usage of three pins of MEMS to be particular X-Co-Ordinatepin(1), readpin(2), writepin(3). Right when an ARM processor examines the banner from MEMS it shows that an incident has been happened remembering the true objective to discover the spot of mishap we use GPS, yield of GSM and GPS is given to MAX-232. Exactly when setback happens GPS is started and it gives the estimations of zone with respect to Latitude and Longitude.

The same above qualities are sent to the mobiles using GSM for which the convenient numbers are dumped in the program. Meanwhile those qualities are appeared on LCD Display. Along these lines by using MEMS, GSM and GPS setback territory is recognized and the information is sent to the flexible and also LCD Display.

B. Accidents Due To Harmful Gases

The vehicles gas spillage identifier framework can be separated into the equipment and programming framework improvement. The equipment framework advancement can be separated four sections, which are 1) the gas sensor circuit, 2) microcontroller on-board framework, 3) rationale identifier circuit, and 4) caution framework. Yield from the gas sensor circuit will then interfere with the microcontroller to send a flag to rationale identifier circuit.

The initial segment of this framework is the schematic of the gas sensor circuit. In this framework, the NEMOTO semiconductor kind of gas sensor NAP-11A is utilized as the gas sensor in this circuit. This sort of sensor (NAP-11A) can identify a low focus scope of CO produced by stoves or other feeding hardware in rooms. The other imperative element in the decision of the NAP-11A sensor is the sensors profoundly touchy to a low convergence of CO gas. After the gas sensor circuit has been effectively executed, the yield flag has been sustained to microcontroller on-board framework.

The heart of the framework is a 8-bit microcontroller of PIC16F84, which will keep running on pre-customized directions. The microcontroller (PIC16F84) has 18 stick terminals. In this equipment outline, the new form of this family microcontroller is utilized, PIC16F84A. The AC/DC connector gives the power supply to microcontroller on-board framework. To get steady a voltage, IC voltage controller (7805CT) gives the voltage direction on-board component.

The PIC16F84 microcontroller must be modified to distinguish gas spillage and interfere with the framework consequently. The microcontroller PIC16F84 on-board framework is an interface part between the gas sensor circuit and rationale discovery circuit, before the caution framework is activated. The programming for this venture is composed in C dialect and created utilizing MPLab v6.30 to change over to machine code before downloaded to PIC16F84A utilizing IC Program 1.05A programming application.

C. Iris Recognition

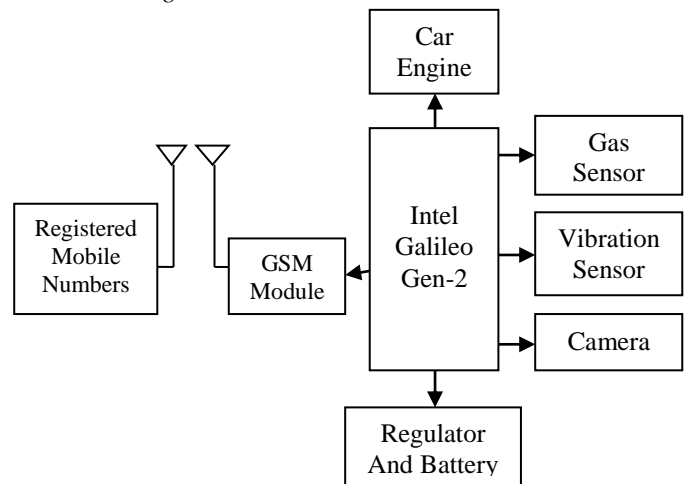
Iris affirmation is a system for biometric approval that usages outline affirmation methodology in light of high-assurance photos of the irises of an individual's eyes. It planned for use in a one-to numerous request environment, a key favored point of view of iris affirmation is its soundness security system especially auto .Iris affirmation method gives best execution over all other picture get ready structure.

Rajat Garg [2] presents three unmistakable yet solidly related thoughts viz. an Iris Recognition system, a Drowsy Driver Detection structure and a Distress Signaling structure using non-meddlesome machine vision based thoughts. Biometric security through Iris affirmation will help in approval and an upgraded rest acknowledgment and driver prepared structure by watching both the driver's eyes and what's more distinguishing the glow assortment of the body by method for infrared warm sensor.

Izem Hamouchenea, [5], has proposed another iris affirmation structure using a novel segment extraction strategy called as Neighborhood-based Binary Pattern which examines each neighbor of the central pixel with the accompanying neighbor to encode it by 1 if it is more conspicuous or 0 in case it is lower than the central pixel. The got twofold code is changed over into a decimal number to manufacture the NBP picture.

III. PROPOSED SYSTEM

A. Block Diagram



The system consists of oxygen sensor to detect the oxygen content in the car. In case of low oxygen content the sensor will sense it and will send a message to the registered mobile numbers through the GSM transmitter. Also it will produce a warning signal (alarm) for the person inside car. The frequency of the air balloon is programmed to the vibration sensor and at that particular frequency a message will be sent to the registered numbers through GSM. In order to protect the theft of car from unknown persons the face recognition is done. In case of unknown persons entering the car the engine will not get started.

B. Working Of The Project

Vibration sensor is interfaced with Intel Galileo board to detect the accident. During accident air balloons will arise to prevent the person inside the car from getting harmed. The frequency of the air balloon is programmed to the vibration sensor and is placed inside the car. At that particular frequency a message will be sent to the registered numbers through GSM transmitter. Gas sensor is interfaced with Intel Galileo board to detect the hazardous gas inside the car. In case of low oxygen content and increased carbon dioxide content the sensor will sense it. And the sensor will send a message and produces a warning signal (alarm) for the person inside car.

Interfacing Camera with Intel Galileo board to detect the thieves entering the car using matlab. In order to protect the theft of car from unknown persons the face recognition is done. The face of known persons is registered in the database. In case of unknown persons entering the car the engine will not get started. And an alert is sent to the owner as SMS. This face recognition is done with matlab.

IV. IMPLEMENTATION

A. Intel Galileo Gen-2 Kit

The Intel® Galileo Gen 2 progression board is a microcontroller board in perspective of the Intel®Quark™SoC X1000 application processor, a 32-bit Intel® Pentium® check system on a chip (SoC). It is the essential board in perspective of Intel® building proposed to be hardware and programming pin-consummate with shields planned for the Arduino Uno*R3.

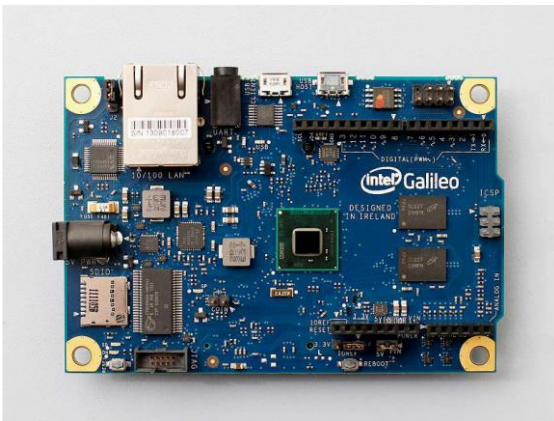


Fig 1. Intel Galileo Gen-2 kit

B. Vibration Sensor

The Vibration module in light of the vibration sensor SW-420 and Comparator LM393 to perceive if there is any vibration that past the edge. The utmost can be adjusted by the on-board potentiometer.

At the point when there is no vibration, this module yield rationale LOW the flag show LED light and the other way around. The utilizations of vibration sensor are vibration distinguishing, Burglary assurance framework.

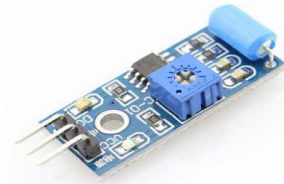


Fig 2.Vibration Sensor

C. Gas Sensors

The Gas Sensor Board is intended to work in conjunction with one of the gas sensors recorded beneath (excluded) permitting you to decide when a preset gas level has been come to or surpassed.

- CO (Carbon Monoxide) Gas Sensor
- CH₄ (Methane) Gas Sensor
- LPG (Propane) Gas Sensor
- C₂H₅OH (Alcohol) Gas Sensor

The gas sensor basically connects to the Gas Sensor Board, making it simple to utilize these sensors in implanted activities. The board can interface to a smaller scale controller with just two I/O pins, permitting the sensor to be controlled and observed consequently.



Fig 3.Gas Sensor

There are a few distinct sensors that can be introduced to recognize perilous gasses in a habitation. Carbon monoxide is an extremely risky, however scentless, dull gas, making it troublesome for people to identify. Carbon monoxide identifiers can be acquired for around US\$20–60. Numerous nearby locales in the United States now require establishment of carbon monoxide indicators notwithstanding smoke locators in living arrangements.

A test ought to comprise of uncovering the gas indicator to a known convergence of gas to guarantee that the gas locator will react and that the capable of being heard and visual cautions initiate. It is additionally essential investigate the gas finder for any inadvertent or consider harm by watching that the lodging and screws are in place to keep any fluid entrance and that the channel is perfect, all of which can influence the usefulness of the gas indicator. The key components are as per the following. Taste header interface with 0.1" dividing for

simple association with prototyping sheets or expansion links. Controllable interior warmer encourages exact estimations. Low-control standby mode diminishes control utilization for implanted ventures. Just two microcontroller I/O pins required for operation. The application thoughts are gas level over-cutoff caution, remain solitary/foundation detecting gadget, Environmental checking hardware.

D. GSM

The GSM engineering is only a system of PCs. The framework needs to parcel accessible recurrence and dole out just that part of the recurrence range to any base transceiver station and furthermore needs to reuse the rare recurrence as frequently as could reasonably be expected. GSM was initially characterized for the 900MHz territory however after some time even the 1800MHz territory was utilized for cell innovation. The 1800MHz territory has its engineering and particulars practically same to that of the 900MHz. GSM innovation yet assembling the Mobile trades is simpler and the high recurrence Synergy impacts add to the upsides of the 1800 MHz go.

E. GPS

The Global Positioning System (GPS) is a U.S. space-based radio course system that gives strong arranging, course, and timing organizations to standard resident customers on a relentless general start - transparently available to all. For anyone with a GPS beneficiary, the structure will give territory and time. GPS gives correct territory and time information for countless in all atmosphere, day and night, wherever on the planet.

F. Iris Recognition System

The proposed Iris Recognition System for approval of driver in vehicles relies on upon picture dealing with technique to ensure the uniqueness of driver. Picture get ready frameworks can be used to isolate the unique iris outline from a digitized photo of the eye, and encode it into a biometric design, which can be secured in a database.

Exactly when the driver is recognized by iris affirmation structure, their eye is at first caught, and after that a design is made for their iris area. This organization is then differentiated and exchange designs set away in a database until either a planning format is found and the driver is perceived, or no match is found.

V. OUTPUT AND RESULTS

During accident air balloons will arise to prevent the person inside the car from getting harmed. The frequency of the air balloon is programmed to the vibration sensor and is placed inside the car. At that particular frequency a message will be sent to the registered numbers through GSM transmitter. The project consists of gas sensor to detect the oxygen content in the car. In case of low oxygen content and increased carbon dioxide content the sensor will sense it. And the sensor will send a message and produces a warning signal (alarm) for the person inside car. Using the Canny Edge Detection technique available in MATLAB, the edges of iris

and pupil regions are detected which is the very first step for Iris Recognition.

VI. CONCLUSION AND FUTURE WORK

This vehicle setback recognizable proof and prepared systems give emergency responders basic information and no more prompt possible time. Reducing the time between when a setback happens and when it is perceived can diminish demise rates. Customary in-vehicle mischance recognition and notice frameworks, for example, On Star, are compelling in decreasing the time crevice before specialists on call are sent to the scene. These frameworks, in any case, are costly and not accessible in all vehicles. To further expand the use of programmed mischance discovery and notice frameworks, this framework can be utilized to in a roundabout way distinguish mishaps through sensors, for example, accelerometers.

Air Quality Monitoring framework will be found in an ever increasing number of vehicles in the coming years. Makers will request solid, minimal effort sensors that will have the capacity to distinguish sub-ppm gas focus levels. The frameworks will get to be distinctly more astute via consequently selecting HVAC ventilation settings and will give both visual and capable of being heard alert abilities to avoid driver exhaustion.

Iris Recognition is thought to be most tried and true and stable. The results got from the amusement endorse the edge acknowledgment for iris constrains by getting the iris picture. The case affirmation of iris picture is performed using the MATLAB programming. The Image Processing Toolbox energized the edge revelation of iris picture which can then be institutionalized and facilitated with substitute iris pictures in the databases.

In future, we can interface diverse sensors with this framework, for example, liquor indicator, languor identifier, heart rate locator, and so forth. Regarding these we can truly counteract mishap and spare life. The future work for iris affirmation can be disclosure of state of sluggishness using a comparable count for by getting complete closeness of both eyes. This can ensure the prosperity of driver in exhaustion cases close by security while driving.

REFERENCES

- [1] P. Sreekala., V. Jose, J. Joseph and S. Joseph, "The human iris structure and its application in security system of car", IEEE International Conference on Engineering Education: Innovative Practices and Future Trends (AICERA), 2012.
- [2] V.Kavitha, V.Palanisamy, "New Burst Assembly and Scheduling T technique for Optical Burst Switching Networks", Journal of Computer Science, Vol. 9, Issue 8, pp.1030-1040, 2013.
- [3] R. Garg, V. Gupta and V. Agrawal, "A Drowsy Driver Detection and security system", International Conference on Ultra-Modern Telecommunications & Workshops, 2009.
- [4] V.Kavitha, V.Palanisamy, "Simultaneous Multi-path Transmission for Burst Loss Recovery in Optical Burst Switching Networks", European Journal of Scientific Research, Vol. 87, Issue 3, pp.412-416, 2012.
- [5] Jian Xiao, Haidong Feng, "A Low-cost Extendable Framework for Embedded Smart Car Security System", Proceedings of the 2009 IEEE International Conference on Networking, Sensing and Control, Okayama, Japan, March 26, 2009.

- [6] S.Palanivel Rajan, K.Sheik Davood, "Performance Evaluation on Automatic Follicles Detection in the Ovary", International Journal of Applied Engineering Research, Vol.10, Issue 55, pp.1-5, 2015.
- [7] Joseph A. O'Sullivan, Robert Pless, "Advances in Security Technologies Imaging, Anomaly Detection, and Target and Biometric Recognition", Microwave Symposium IEEE/MTT-S International Volume, Page(s):761 – 764, 2012.
- [8] S.Mohanapriya, M Vadivel, "Automatic retrieval of MRI brain image using multiqueries system", 2013 International Conference on Information Communication and Embedded Systems (ICICES), INSPEC Accession Number: 13485254, Electronic ISBN: 978-1-4673-5788-3, DOI: 10.1109/ICICES.2013.6508214, pp. 1099-1103, 2013.
- [9] S.Palanivel Rajan, "Review and Investigations on Future Research Directions of Mobile Based Tele care System for Cardiac Surveillance", Journal of Applied Research and Technology, Vol.13, Issue 4, pp.454-460, 2015.
- [10] S.P.Pingats, Shubham Rakhecha, Rishabh Agrawal, Sarika Mhetre, Pranay Raushan, "Real Time Smart Car Security System by Using Biometrics", Volume-2, Issue-4, March 2013.
- [11] S.Palanivel Rajan, M.Paranthaman, Dr.C.Vivek, "Design and Enhancement of Wideband Reconfigurability using Two E-Shaped Patch Antenna", Asian Journal of Research in Social Sciences and Humanities, ISSN : 2249-7315, Vol.6, Issue 9, pp. 317-327, 2016.
- [12] C.Vivek, S.Palanivel Rajan, "Z-TCAM : An Efficient Memory Architecture Based TCAM", Asian Journal of Information Technology, Vol.15, Issue 3, pp.448-454, 2016.
- [13] V.Saravanan and R.Sindhuja, "Iris Authentication through Gabor Filter Using DSP Processor", IEEE Conference on Information and Communication Technologies, pp. 568 -571, 2013.