

Review on Smart Helmet

Akash Pandey, Mansi Jane, Abhishek Markande, Kalyani shingane , Lochana Yelekar, Sayali Haridas Kakade⁶, Prof. Shelke⁷

^{1,2,3,4,5,6}Student, Department of Electronics and Telecommunication Engineering, Priyadarshini J. L. college of Engineering, Nagpur, India

⁷Assistant Professor, Department of E&TC Engineering, Priyadarshini J. L. college of Engineering, Nagpur, India

Abstract - The impact when a motorcyclist involves in an accident without wearing a helmet is very dangerous and can cause fatality. This paper will be designing helmet with some new innovative ideas. Like for accident purpose, alcohol detection, ignition concept. This helmet parameters are reliable for making any helmet to complete. Smart helmet is an innovative concept which makes motorcycle driving safer than before. The circuit in each helmet is designed in such a manner that the bike won't start unless the rider had not worn the helmet. Some author has discussed on speed of a vehicle and alcohol detection. As soon as the alcoholic rider wear the helmet alcohol will be detected. But alcohol is not the main reason for the accident many other circumstances we will be working on that issues also. The smart and safety helmet will be the combination of all the features which are been studied n applied by the other author and there will be many more other additional features developed by us in this paper.

Key Words: GSM and GPS module, ARM controller, sensor, display device

1 INTRODUCTION

The thought of developing this project comes to do some good things towards the society. Day by day the two wheeler accidents are increasing and leads to loss of many lives. The reasons may be many such as no proper driving knowledge, no fitness of the bike, fast riding of bike, drunken and drive etc. Roads accidents are on the rise day by day and in countries like india where bikes are more prevalent many people die due to carelessness caused because of not wearing helmet. In order to put an end to this misery we have developed the smart helmet for motorcycle the motorcycle will not start without helmet. It is being featured with the GPS and GSM based tracking system in order to track location of accident. The project is being implemented with all the sensor which will send the information to the module connected with the bike engine wirelessly .This smart bike helmet system has two module, one on the bike. Accident sensor, helmet sensor are attached on the helmet.

2 LITERATURE SURVEY

2.1 Smart Helmet Using GSM and GPS Technology

Tushar Raut¹, Indrani Nikose², Reena Bisen³, Varsha Deshmukh⁴, Ashwini Damahe⁵, Pranoti Ghotekar⁶

The Author has discussed safety and security of the bikers against road accident. Smart helmet has special idea which makes motorcycle driving safety than before, this is implemented using GSM and GPs technology. Other advantages of this project is to measure the alcohol level of the drunken people who is riding the bike. Whenever the alcohol level crosses the predefined value, the alarm starts and get notification about the drunken driver. The author have also discussed about the accident detector and the sensor will active the GPS and find the location and further SMS will send to ambulance or family members.[1]

AS they have used microcontroller for controlling their overall operation due to that the project will might be fail to upgrade newer versions.

2.2 Helmet using GSM and GPS technology for accident detection and reporting system. (May-2016)

Lakshmi Devi P¹, Bindushree R², Deekshita N M³, Jeevan M⁴, Likhith⁵

According to the author this project is specially developed as to improve the safety of the motorcycle's rider. The objective of this project is to study and understand the concept of RF transmitter and RF receiver circuit. The project uses ARM7, GSM and GPS module. The project also uses buzzer for indication purpose. This project is only concentrated on only one specific purpose that is an accident. Whenever the accident will occur then accident spot will be note down and information will send out on the noted mobile number. [2]

The major disadvantage of this project is they are not using any display device for showing the current status. Also the cost of helmet is still high since helmet is designed for only one purpose.

2.3 Microcontroller based smart wear for driver safety (April-2015)

Abhinav Anand¹, Kumar Harsh², Kushal Kumar³, Sourav Gouthi⁴

In this paper author has discussed on the speed of the vehicle. In this application the project will be monitoring the areas in which the vehicle will be passing. On entering any cautionary areas like schools, the speed of the vehicle will be controlled to a predefined limit. He worked on the phenomenon of speed of vehicle along with some security factor. LCD is used for showing the various types of messages after wearing the helmet.

The author has worked only on the phenomenon of accident which is generally happens due to drunk and drive. But as we know that the accident in the area is not happens only due to consuming alcohol but also other parameters are also responsible.

2.4 Smart Helmet (March-2016)

Saravana Kumar K¹, Anjana.B.S², Litto Thomas³, Rahul.K.V⁴.

In this paper the prime objective of author is to force the rider to wear the helmet throughout. Considering the increasing number of motorcycle riders in our country and the number of accident happening each year. In this competitive world one of the survey says that the death tolls due to motor bike accidents are increasing day by day out of which most of these casualties occurs because of the absence of helmet. Traffic police cannot cover remote roads of city. That's why over primary target is to make the usage of the helmet for two wheelers "compulsory". Thus, no one other than the owner himself, who doesn't have "password" which would have been created by the owner, can use the bike. In this author has proposed the feature that the bike will not start unless the helmet is not worn by the rider. The other this module basically deals with the checksum of rider if he is wearing the helmet or not on first place to achieve this ultrasonic sensor is been used. based on this the signal are been sent to the next module voice recognition module use for authentication purpose. Arduino is also used in this project which is an open source tool for making computer that can sense and control more of physical world than your desktop computer.

Hence they have use ultrasonic sensor it is very expensive and the microcontroller is been used it may have major drawback in future as it is not able cope up with highly updated world in future.

2.5 Smart Helmet (May 2015)

Nitin Agrawal¹, Anshul Kumar Singh², Pushpendra pratap singh³, Rajesh Sahani⁴

In this project the author has proposed the smart helmet because of growing bike accident now a days. people get injured or might be dead and one of the reason is not wearing helmet. Continuously road rules are violated. so as to overcome these problem this helmet is been proposed. The craze of motor bike is really remarkable. the middle class families prefer to buy motor bike over four wheelers, because of the low prices, various variety available in the market, due to cut-throat completion between two wheeler company and durability. Author has also used encoder IC receives parallel data in form of address bits and control bits the other author has used smart system for helmet.

But in this project author have not focused on the major issue that will occur in future regarding the alcohol and many other.

3 CONCLUSIONS

This Paper review the smart and safety helmet for the rider. In some project they have used encoder/decoder IC, ultrasonic sensor that may cost very high. Some has only proposed an alcohol detector and accident tracker and many other separately. In future the smart and safety helmet will having all the feature that alcohol detector, accident location tracking system and ignition together. The other feature are too advanced that is the bike will not start unless the biker doesn't wear helmet. The accident tracker will track the location where the accident is caused and send the SMS to the police or the family members, these all are the feature used in smart and safety helmet.

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