Alcohol Detection System with Vehicle Tracking

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ABSTRACT

Our proposed system would be repetitively monitoring the driver breath by placing it on the driver wheel or somewhere the drivers breath can be constantly monitored by it. So if a driver is drunk and tries to drive the system detects alcohol presence in his/her breathe and locks the engine so that the vehicle fails to start. And sends vehicle details to the owner

In another case if the driver is not drunk while he starts the vehicle and engine is started but he/she drinks while driving the sensor still detects alcohol in his breath and stops the engine so that the car would not accelerate any further and driver can steer it to roadside. In this system we use an Aurdino uno, Gps module, Gsm module with an alcohol sensor along with an dc motor to determine the concept. So here the alcohol sensor is used to monitor users breath and constantly sends signals to the microcontroller.

The microcontroller on encountering high alcohol signal from the alcohol sensor stops the dc motor to demonstrate as engine locking. Once engine is locked then the microcontroller sends the signal to the gsm module now the gsm module sends signal to gps module to obtain latitude and longitude value obtained by the Gps module .these value is send to the car owner by the Gsm module sends the message of the car details and registration number . If alcohol is detected at the time of starting the engine the engine does not start at all. If alcohol is detected after engine initial, the system locks the engine at that time

Keyword :- *Alcohol detection system, Vehicle Tracking, GSM, GPS, Arduino.*

1. Introduction

We usually come across drink and driving cases where drunk drivers crash their cars under the influence of alcohol causing damage to property and life. So here we propose an innovative system to eliminate such cases. Our proposed system would be constantly nursing the driver breath by placing it on the driver wheel or somewhere the drivers breath can be constantly watched by it. So if a driver is drunk and tries to drive the system notices alcohol presence in his/her breathe and locks the engine so that the vehicle fails to start. And sends vehicle details to the owner

In another case if the driver is not drunk while he starts the vehicle and engine is started but he/she drinks while driving the sensor still detects alcohol in his smell and stops the engine so that the car would not accelerate any further and driver can steer it to roadside. In this system we use an Aurdino uno, Gps module, Gsm module with an alcohol sensor along with an dc motor to establish the concept. So here the alcohol sensor is used to monitor users breath and constantly sends signals to the microcontroller.

The microcontroller on meeting high alcohol signal from the alcohol sensor stops the dc motor to demonstrate as engine locking. Once engine is locked then the microcontroller sends the signal to the gsm module now the gsm module sends signal to gps module to obtain latitude and longitude value obtained by the Gps module .these value is send to the car owner by the Gsm module sends the message of the car details and registering number . If alcohol is detected at the time of starting the engine the engine does not start at all. If alcohol is detected after engine starting, the system locks the engine at that time

2. LITERATURE SURVEY

The alcohol detection system is designed in such a way that if the any driver who is driving the vehicle is drunken then the alcohol detection system locks the vehicle and sends the message to the vehicle owner with the car location .

2.1 [1] National Highway Traffic Safety Administration

Fatality Analysis Reporting *System (FARS)*. 2009 [cited 2009 June]; Available from: ftp://ftp.nhtsa.dot.gov/fars/.
One of the primary objectives of the National Highway Traffic Safety Administration (NHTSA) is to reduce the staggering human toll and property damage that motor vehicle traffic crashes impose on our society. Crashes each year result in thousands of lives lost, hundreds of thousands of injured victims, and billions of dollars in property damage. Accurate data are required to support the development, implementation, and assessment of highway safety programs aimed at reducing this toll. NHTSA uses data from many sources, including the Fatality Analysis Reporting System (FARS) which began operation in 1975. Providing data about fatal crashes involving all types of vehicles, the FARS is used to identify highway safety problem areas, provide a basis for regulatory and consumer information initiatives, and form the basis for cost and benefit analyses of highway safety initiatives.

2.2[2] Deployment in asking about drinking-related problems

Cahalan, D., I. Cisin, and Crossley, American Drinking Practices: A National Study of Driving Behavior and Attitudes. 1969, Rutgers University Press: New Brunswick, NJ
Questions about drinking problems in early drinking surveys were often phrased in terms of lifetime occurrence -- "did this ever" occur? Phrasing the question in such terms obviously has the greatest chance of picking up positive responses. Asking questions on a lifetime basis was also encouraged by the clinical tradition of regarding alcoholism, along with other psychiatric conditions, as lifelong once incurred. Those of us engaged in longitudinal studies quickly realized that such questions greatly hindered studies of changes in drinking problem status over time -- with lifetime question, respondents could never get better, they could only become invalid. In early studies, the time period specified for "current problems" varied, from 6 months, in studies based on the DIS, to as long as three years (Cahalan and Room, 1974). The sporadic nature of many problems discouraged short time periods; in the end, the literature has settled down to 12 months as the usual time-period for "current" problems. This often raises problems for analyses of the relation between drinking patterns and drinking problems. It would usually be desirable to have the two domains measured on the time-period, but some drinking-patterns measures have been based on shorter periods -- the last seven days or two weeks or 30 days. On the other hand, measuring drinking patterns on a twelve-month base raises the issue of whether and how to measure and analyze variability in patterns within the period. A variety of expedients have been used to deal with this issue, but there has been no agreement on a particular solution .It should be noted that the alcohol survey tradition operates on a quite different epistemology from general medical epidemiology in terms of the relation of alcohol consumption to social and health problems (Edwards et al., 1994, pp. 48-50). Whereas the classic problem in medical epidemiology is to demonstrate causation by correlating two conceptually unrelated phenomena, in the alcohol survey tradition the causal connection is built into the question a-priori. Often the respondent him/herself is asked whether there is a problem and to make the causal connection ("did your drinking have a harmful effect on your marriage or home life"). In other questions, the respondent is being asked about problematization by others ("a friend's feelings about your drinking threatened to break up your Relationship"). In a third type of question, the problematization comes from the researcher. On its face, "I have often taken a drink first thing when I get up in the morning" or "I find I have to drink more now to get the same effect as before" do not describe problems; they become problematized only in terms of the researcher's interpretation of the behavior. (The researcher's interpretation does reflect general clinical and cultural

interpretations, raising the complication that the respondent, too, is likely to know s/he is giving an answer that will be seen as signaling a problem.)

2.3 [6] **values of the breath alcohol concentration**

Lim, T.S., W.Y. Loh, and Y.S. Shih, A comparison of Prediction accuracy, complexity, and training time of Anderson RR & Parrish JA (1981) The Optics of Human Skin. The Journal of Investigative Results of the EDA after drinking shows the compared with two breath alcohol concentration equipment . Just after drinking alcohol, the values of the EDA have the tendency of decrease from non-alcohol condition and slightly recovery when time has passed. On the other hand, the values of the breath alcohol concentration increase just after drinking and as time's passing though taking more drinking, the values decrease by using both breath alcohol equipment. The horizontal axis shows the number of the beer (350cc with 5 % alcohol per one bottle) and passing time (minute).

2.4 [3] **To Calculate the Content of Alcohol**

Babor, AUDIT: The alcohol use disorders identification Test: Guidelines for use in primary health care. 1992, Geneva, Switzerland: World Health Organization.

How to Calculate the Content of Alcohol in a Drink The alcohol content of a drink depends on the strength of the beverage and the volume of the container. There are wide variations in the strengths of alcoholic beverages and the drink sizes commonly used in different countries. A WHO survey45 indicated that beer contained between 2% and 5% volume by volume of pure alcohol, wines contained 10.5% to 18.9%, spirits varied from 24.3% to 90%, and cider from 1.1% to 17%. Therefore, it is essential to adapt drinking sizes to what is most common at the local level and to know roughly how much pure alcohol the person consumes per occasion and on average. Another consideration in measuring the amount of alcohol contained in a standard drink is the conversion factor of ethanol. That allows you to convert any volume of alcohol into grammes. For each milliliter of ethanol, there are 0.79 grammes of pure ethanol. For example, 1 can beer (330 ml) at 5% x (strength) 0.79 (conversion factor) = 13 grammes of ethanol 1 glass wine (140 ml) at 12% x 0.79 = 13.3 grammes of ethanol 1 shot spirits (40 ml) at 40% x 0.79 = 12.6 grammes of ethanol.

4. CONCLUSION

The conclusion is to provide security of roads, national highways, state highways etc which is important to human life. We develop an intelligent multisensory based security/detection system that contains preventing of accidents in daily life. We design the alcohol detection system using sensors in the system, and program the alcohol detection and alcohol procedure using sensor based method. The system is cost effective, has a wide applications which when implement can show good and effective result. It can be use deliberately in industrial applications, commercial and in domestic sectors where the requirement of manual work demands.

5. ACKNOWLEDGEMENT

With an immense pleasure and satisfaction, I am presenting this Project report as part of the curriculum of Diploma Computer Engineering. I wish to express my sincere gratitude towards all those who have extended their support right from the stage this idea was conceived.

I am profoundly grateful to Mr. V. N.Kukre Project Guide, for his expert guidance and continuous encouragement throughout to see that project work rights its target since its commencement to its completion.

I am thankfull to Mrs. V.C. Sanap , Project Coordinator, for conducting and supporting such research activities.

I am also grateful to Mr. V. N.Kukre, HOD, Department of Computer Engineering, for his support and encouragement.

Finally, I am also grateful to Honorable Mr. B.S.Patil, Principal, AISSMS POLYTECHNIC, Pune, for his support and guidance that have helped me to expand my horizons of thought and expression.

We would also thanks to all Staff members of computer department for showing us the way for achieving the project target we want.It would not have been possible to complete the project without the support and motivation from our family members and friends.

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