

The Study On Automatic Crash Prediction and Notification

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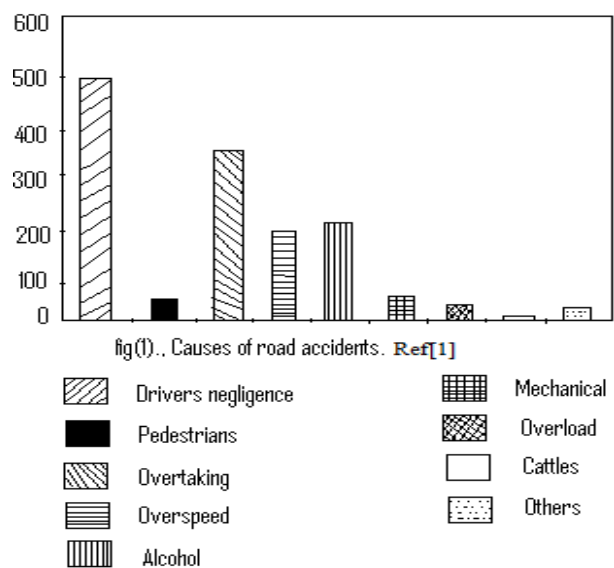
Abstract— This paper describes the improved technologies in establishing a more reliable and interactive vehicles. This may highly avoid the chances of crash. The intention of this structural design is to detect the indications of the drunken and sleepy drivers, and further, make him aware to avoid accidents. Using ARM7 the system provides more secure, efficient, serviceable results. The system mainly consist of a real time sensors such as alcohol sensor, fuel, eye blink and all interfaced with Global positioning System and Global System for Mobile. Ref[1] To enhance the overall redeemable process, a fast and accurate estimation of the seriousness of the accident represent a key point to help the emergency services to better estimate the required resources. This paper proposes a novel intelligent system which is able to automatically detect road befallings, notify them through vehicular networks, and estimate their severity based on the concept of data mining and knowledge inference. Ref[2]

Keywords— Sensing, Automation, GPS GSM, Location Tacking, Processing.

I. INTRODUCTION

Since last decades, the ratio of vehicles per family has been increased tremendously which caused a remarkable growth, increasing traffic probability over the roads. This needs more attentive drivers and their control over the speed today mostly the increment in accidents are due to drunken drivers, over speed driving etc. So today most of the r&d departments have keen focus on road accidents and their ways of minimization. Our project is one of the part of such researches. So this motivated us to build such system which will have a great hand in reduction of road accidents and saving many of the lives as possible. According to the researches of 2012, the graph for the causes of accidents can be as

follows,



The newly developed technologies for the vehicles give an opportunity for the good assistance to the injured peoples after accidents. Recent researches show how the communication capabilities along with intelligent systems should take automatic decisions during emergencies by making aware the rescue committers about the severity of accident and reducing the assistance time. To enhance the rescue process a keen estimation of the severity of accident should be available to help the emergency services to better esteem the rescue teams. Hence our proposed system will probably sort out the basic problems of rescue teams and reduce the ratio of accidents per annum.

A. Existing advance system found in high tech cars. Ref[1]

- 1) **Anti locking braking system:** An ABS is normally similar to braking system by automatic pumping. The vehicles without ABS system has to manually pump the brakes to avoid wheel lockup. The vehicles with ABS system, we just have

to just plant the foot on the brake pedal whereas ABS pumps the break for us & we can concentrate on safe drive.

- 2) *SRS air bags (Supplemental restrained system air bags)*: It is a vehicle safety device and prevents the occupants from directly striking objects such as steering or window. The air bags are designed to only inflate in moderate to severe crashes.
- 3) *Immobilizers*: It is an electronic device in a vehicle from running engine unless correct key is applied. This prevents car from being hot wired.
- 4) *Cruise control*: Cruise control is also known as speed control or auto cruise that automatically control the speed of vehicle. It handles the throttle of the car to maintain steady speed .

II. LITERATURE SURVEY

In S.P Bhumkar, et al[1] suggested a real time online safety prototype that limits the speed vehicle speed to avoid driver fatigue. The reason of this system is to build a promotional system that will minimize driver fatigue symptoms . Here, the components used are real time sensors like eye blink sensor, gas sensor, alcohol sensor, fuel detection sensor, impact sensors and a software interface with Google maps and Global Positioning System. Through research presented in this paper, they proposed an intelligent car system for accident prevention and making the world a much better and safe place to live.

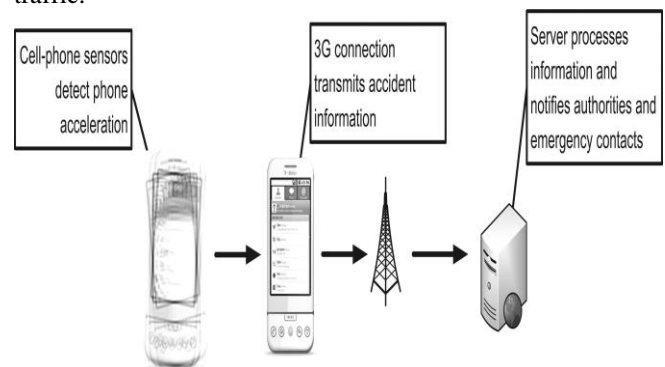
In Manuel Fogue, et al[2] described a online certainty model which is based on data mining and knowledge interference to detect the road accidents. The system is based on the vehicle sensors, DAU, GPS device, wireless interface, OBU processing unit.

In K Govindaraju, et al[3] described a vehicle control system merging GPS with Embedded , wireless system for remote location application. According to them it is tough to

control the vehicle speed automatically. So, in order to avoid those difficulties, this research paper succeeded in alerting the driver about the speed limits and detecting the critical area. The entire system is control and the advantage of small volume and high reliability.

In Chris Jhompson, et al [4] el represented a system based o smartphones and their on-board sensors he provided three contributive studies of smartphone based car accident detection system such as,

- (1) Solutions to key issues related to traffic accidents,
- (2) the architecture of the smartphone based accident detection proposed system,
- (3) how smartphone based accident detection can minimize the excess of traffic.



Fig(2).,Smartphone based accident detection system.

Also, in the event of an extreme accident the phone may be destroyed preventing it from contacting emergency responders. As with equipment embedded in the vehicle, which is how systems like OnStar function, there is a chance that the phone would become damaged during an accident and be unable to transmit accident information. Without providing redundant or ruggedized equipment, which would significantly increase cost and reduce usability, there is little that can be done to prevent the destruction of communication equipment. This is a weakness of such a system however the severity of such an accident would likely draw enough attention from witnesses that Wreck Watch's notification would be superfluous.

III. CONCLUSIONS

The technique describe in the paper will have a great hand in minimizing or having aggrandized control over the lifelosses due to road accidents.

Thus reviewing the papers we got a complete idea about the project implementation and all its related concepts. The system will be continuously in detecting zone for number of car features such as fuel, temperature of engine, speed, eye blink and the alcohol sensor and after the detection the sensors will come into picture.

If the crash is predicted the one can immediately find out the location of impact occurred by collecting the information which is stored in internal memory, microcontroller sends the data via message through Global System for Mobile to the base unit. This is how our project will be globally beneficial.

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