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Automatic Vehicle and Self Driving Cars, Future of India but Miles to Go

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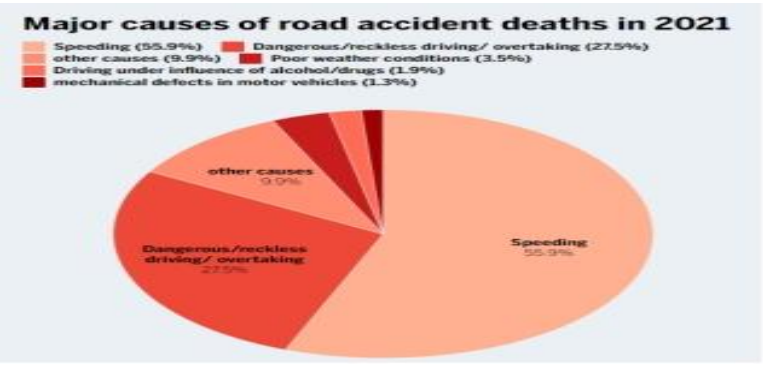
ABSTRACT

The growth of automated cars attributed to various factors like speedy development in sensor processing technologies, adaptive algorithms, high definition mapping, vehicle to vehicle communication technologies etc . But in India the present situation is not that bright for the automated vehicles. Motor Vehicle act 1988 does not give any permission for autonomous vehicles and not even testing of autonomous vehicles. Extreme weather conditions, Poor road conditions, pot holes, lack of net facilities in several parts of the country, radar interference, lack of knowledge of common people regarding road safety are also few factors which pose challenges to this new technology. Road condition is not same in all over the country, as difficult roads, terrain , muddy roads are very common in India. Automated car also beneficial for India's environment Pollution problems. But, Socially and technologically India is not ready to welcome this revolution. But amendments of laws, implementation of better traffic rules, improvements in network connectivity and last but not the least change in peoples' mindset can change the scenario.

Keywords: *motor vehicle act, AI, safety.*

I. INTRODUCTION

There is a hope shared by researchers and manufacturers that the introduction of self-driving vehicles will make our roads safer. The National Highway Transportation Safety Administration (NHTSA) found that somewhere between 94% and 96% of all motor vehicle accidents are caused by some type of human error.[2]



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[2] major cause of road accidents in India -Dristi IAS

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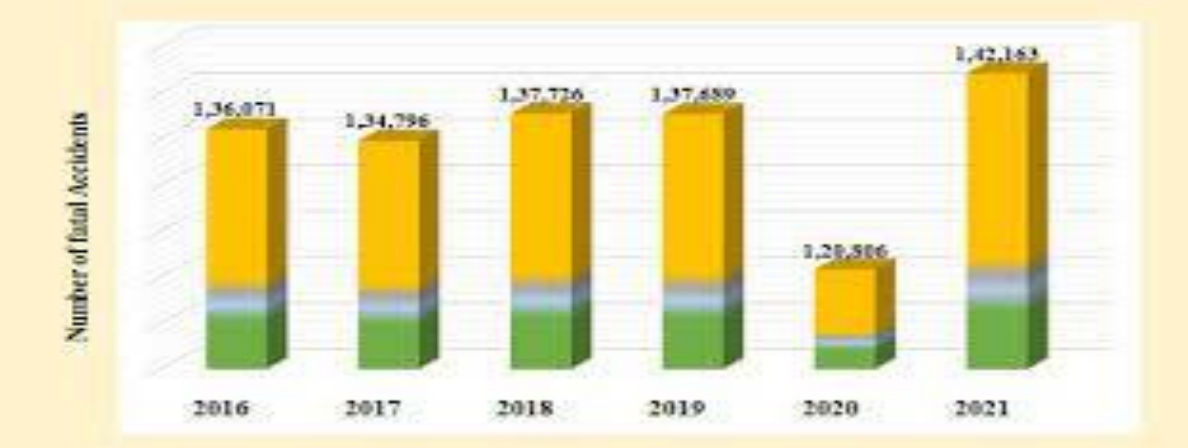
Driver-less cars operate using computer technology, suggesting they may help to reduce the occurrence of driving mistakes and, in turn, the number of tragic car crashes happening each day. Self-driving cars use Artificial Intelligence ("**AI**") to control the cars. The AI software gets its information from the camera, ultrasonic sensors and radar attached in the cars. It can sense the environment around the cars with the help of complex algorithms and machine learning system. Most of the self-driving cars use 'LiDAR' (light detection and ranging) technology in which sensors launch pulses of light from the car's surroundings to measure distances, detect road edges, and identify lane markings.

The Motor Vehicles Act, 1988 and the Consumer Protection Act, 1986 are the two major laws that govern motor vehicles in India. The Motor Vehicles Act, 1988, governs the minimum age for driving a car, as well as the vehicle's liability and registration. On the other hand, the Consumer Protection Act, 1986, regulates damages arising from negligence, industrial errors, construction defects, and unfair trading practices.

There are also worries about the use of self-driving vehicles. Both the existing semi-autonomous cars on our roadways and the fully autonomous models of the future have many disadvantages in many fields which creates a lot of challenges for the Indian authorities to allow fully automatic vehicles on Indian roads as they are concerned about the possible consequences. Concerns about self-driving cars include safety, technology, autonomy, and social implications.



[3]

The advent of self-driving vehicles could have a human cost. Self-driving car technology is still being developed, but many manufacturers intend to create fully autonomous vehicles to perform a variety of functions and jobs, including commercial transportation.

Some people are concerned that the workforce that drives cars, trucks, buses, and taxis may find themselves replaced by this technology, resulting in large unemployment numbers. According

[3] Reports of ministry of Road Transport and vehicles 2021

to the U.S. Bureau of Labor Statistics, more than 2 million people drive tractor-trailer trucks and over 680,000 people work as passenger vehicle drivers.

II. MAJOR PROBLEMS WITH SELF DRIVEN CARS

1. Safety: One of the biggest problems with self-driving cars is that they may not be entirely safe. A driverless vehicle needs to process its surroundings to make judgment calls using perception and decision-making technology. However, according to some reports existing self-driverless cars "incorrectly perceive something in their environment once every tens of thousands of hours," leaving the door open to safety issues that can contribute to car accidents. In other words, technology isn't perfect.

Bad road Condition, extreme weather may also create problems with self driven cars.

2. Driving requires many complex social interactions — which are still tough for robots

A far more difficult hurdle, meanwhile, is the fact that driving is an intensely social process that frequently involves intricate interactions with other drivers, cyclists, and pedestrians. In many of those situations, humans rely on generalized intelligence and common sense that robots still very much lack.

Much of the testing that Google has been doing over the years has involved "training" the cars' software to recognize various thorny situations that pop up on the roads. For example, the company **says** its cars can now recognize cyclists and interpret their hand signals — slowing down, say, if the cyclist intends to turn, may be these Cars can not stop. In India where the roads are extremely conjested , Roads are full of potholes, Self driven Cars are distant reality.

III. ADVANTAGES OF SELF DRIVING CARS

1. Safety: According to WHO in India every year almost 1,50,000 people die due to vehicle accidents and most of these accidents happen due to human error. Automated car may reduce these number because automated car may eliminate human error.

2. Accessibility: According to WHO 26% people in India live with any form of disability. Self Driven automated cars can give freedom to these people because it need no human intervention and even disable persons can freely move with their own car to their schools colleges and workplaces.

IV. COUNTRIES USING SELF DRIVEN AND AUTOMATIC CARS

There are different countries who are taking patents on Self Driven and fully automated Driverless cars . Among this List China is at the top with 11,026 patents, followed by USA,

Germany, Japan and South korea. If we see the Road condition and equipment, the countries which are at the top in this list are USA, Japan, France, Israel Etc.

V. MOTOR VEHICLE ACT OF INDIA AND SELF DRIVEN CARS

The Motor Vehicles Act, 1988 **does not provide for autonomous vehicles in any capacity**, including testing of autonomous vehicles on Indian roads under the current regulation. Despite the proposal of amending the act in 2018, still now the motor vehicle act does not permit the production of self driven and fully automated cars for the Indian market. Even testing of these cars are prohibited on Indian Road. There are several criticism from Government side and it is really a big problem for India. In our country almost 1 crore people are engaged as drivers and self driven cars can make them jobless which the Government definitely do not want. In India traffic rules are not that much strict, reluctant pedestrian, careless commuters, animals on the Road, huge population are the main cause of accidents in India and Government sources says that self driven cars will make the scenario even worse. It will increase number of Road accidents. So to introduce this kind of cars, Government should need to improve the traffic rule and should implement them strictly, Road condition should be improved. Only then Government can amend Motor Vehicle Act and then only can think about self driven cars in India.

(A) Hindrance from Technology

Shortcomings in interconnected car technologies also creating a problem. Real time data transmission is also a challenge for introducing a successful and safe self driving car technologies in India. Network connectivity is very poor in remote areas. In this respect till now India is extremely less prepared country for self driven cars.

VI. CONCLUSION AND SUGGESTIONS

In order to address the problem of autonomous vehicles in the context of the India, it is necessary to address the other laws that will also play a role. For example, in the case of privacy and confidentiality, which often includes sensitive personal data, the position of the Information Technology Act, 2000, must be discussed, particularly Section 66 of the Information Technology Act, 2000, since this technology is vulnerable to hacking. Since the concept of "computer resource" does not involve autonomous vehicles, hacking of autonomous vehicles would be beyond the scope of the current provision on hacking under the IT Act. 'Securing self-driving vehicles comes at a cost, just how much manufacturers are prepared to pay is the question. From a hardware standpoint, automakers should install more sensors such that if one

is corrupted, another can take control, according to Petit. However, in order to save money, most automakers are trying to eliminate redundant sensor systems.' As a result, the Legislature should broaden the definition of hacking under the IT Act and enact stringent regulations requiring automobile makers to implement anti-hacking systems and safety features. It must therefore address the issues of responsibility and protection that would happen if a hacking-related injury happens.

Another important legislation is the Geospatial Information Regulation Bill, 2016. The intent of this bill is to incorporate regulation, acquisition, transmission, publishing, and delivery of geospatial information. The Bill clarifies its goals by allowing Restricted Entities to acquire a licence for certain Geospatial Data/Maps from Indian Entities only for the limited purpose of servicing their Indian customers. Furthermore, APIs must be used to view those data so that it does not flow through the Restricted Entity or its servers. It is also illegal to resell or reuse such information. Ground checking/verification is often banned for Restricted Agencies, allegedly due to security issues over allowing international entities to collect comprehensive information inside Indian territories.

In order to protect privacy, the Guidelines note that DST would be informed with a negative list comprising sensitive characteristics that will be subject to acquisition and/or usage regulations. Any individual would not be allowed to label these attributes on any Map. DST will also form a Geospatial Data Promotion and Development Committee ("GDPDC"), which will include members from various government agencies. Any question resulting from the finalisation of negative attribute lists and the draught rules on such attributes will be decided by the GDPDC. Furthermore, Restricted Organizations are barred from conducting ground checking/ verification, allegedly due to security issues over allowing international entities to collect accurate details on Indian soil.

Hence, this bill is currently in the negotiation stage, so it would resolve the problem of driverless cars.

Other big obstacles will include grappling with the question of existing relevant provisions of the Motor Vehicle Act and the Consumer Protection Act; getting the autonomous vehicle into the regulatory system would necessitate amending these two regulations so that it could be implemented properly. A section specific amendment is not being looked at in this regard. As indicated in the latter part of the terminal paragraph of the conclusion, an amendment to the extent of extending provisions which govern issues not involving faults of drivers *per se*, to the owners of self-driving cars.

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In addition to this, a provision should be added for a situation where a company whose self-driving cars are not up to the mark for Indian roads should be forced to provide higher penalty and if the situation worsens, then their license should be cancelled.

Next, either the government should make amendment to Motor Vehicles Act, 1988 to accommodate self-driving cars or government should makes a dedicated legislation on self-driving cars like Britain and Germany wherein rules regarding liability in case of an accident to rules related to charging should be clearly mentioned. Also the act should impose the liability on the manufacturer for any fault of AI, as the same will provide a two-fold benefit. First, the car manufacturers are in a much better position to pay compensation, alias their deep pockets, and second, when compensation is given by the manufacturers then there is a greater incentive for them to try to make their products more error-free.

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