

Drones and self-driven cars: benefits and hindrances

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Much commendation to the Department of Transportation on the last press release that stated, the government is willing to give the requirements for self-driven cars and drones in the next six months. 2013 being the last time that the issue of automated vehicles had been mentioned at a national level, there was no clear indication on the government's position on the matter. The announcement came in to shine light to a rather grey area in technology advancement.

I'm writing this letter to the department to indicate the importance of clearly outlined legal requirements for automated cars, the vital role the department plays in the process, the benefits of automated cars and to also dismiss any false theories about it. As a computer scientist my passion is to use my knowledge and skills to better the lives of the population, however, this is not possible without the assistance of the law and the government. Let me briefly point out the ways in which automated cars and drones will improve the lives of the people in the U. S and also globally.

Currently, there are 30, 000 deaths annually as a result of poor human driving. With decrease in the age limit that one is legally allowed to drive and increased cases of texting while driving the number is not about to reduce but to increase (Gabriel & Walker Smith, 2014). Self-driven cars would greatly reduce the number of deaths as small issues that lead to accidents like reaction time and rubbernecking would be eliminated. Also increase in the sensitivity and environmental awareness of the car on the weather conditions and the terrain would adjust the speed of the vehicle to the optimum reducing accidents caused due to over-speeding and allowing for

control. Proper adherence of the roads signals and lanes to be followed would be the reality in turn reducing traffic related incidents that are associated with reckless and poor driving.

Automated vehicles would extremely ease management of traffic in big cities like New York that has one of the highest amounts of time wasted on traffic. Time wasted due to traffic jam translates into aggregate financial losses as working hours are greatly reduced. There would also be a reduction in labor cost as drivers would be required. Additionally the car would operate indiscriminately allowing a blind, old, young and even intoxicated person would safely arrive to their destination.

The vehicle's increased awareness would decrease car theft and ultimately reduce crimes associated with car theft. There would also be increase space in the car as there is no need for the driver to have the forward looking posture throughout, allowing the person to be involved in other productive activities and the car can carry many people at a time reducing the need for big cars that are not environmentally friendly. Finally there would be eradication of redundant passengers as the car can be automated to go and pick people at a designated place and take itself for service and back. It will also decrease the cost of making home deliveries as the automated vehicles can easily run that errand.

With all these benefits the process is halted mostly by lack of a proper legal framework and government regulations on the matter. This is where the department of transportation comes in to assist. Due to the differences in

the laws governing different states, different states have different regulations on the safety, role and physical appearance of automated cars. This makes it difficult for computer scientists and engineers to construct a vehicle which will be subject to more than 50 regulations and is expected to pass all of them in order to be introduced to the market. There simply needs to be a blanket regulating body financed by the government that ensures that the safety and financial related regulations are the only ones taken into consideration.

The other challenge is the current transport infrastructure especially in outskirts of towns. They are not well maintained with increased potholes on roads, no street lighting and no street naming making navigation by use of GPS to be a nightmare (Furgale et. al 2013). Once these roads and streets have been named and acknowledged then GPS would be used with ease. With these two aforementioned challenges solved now the software challenge would be solved as they would be tailor made for the set roads and with the set regulations in mind. After the Tesla Motors fatal accident there are several features to be added and some adjusted to be able to adapt to the emergencies on the roads. These features include but are not limited to instant breakings when the car senses another automobile being too close.

Another challenge is lack of proper understanding and ignorance on the workings of the car's software. The public feels that because of the vehicle to vehicle and vehicle to infrastructure communication would be a violation of privacy as the other driver can easily access data from one's car (Furgale et.

al 2013). The truth is that the data shared is only traffic related and for the benefit of both cars. In this case, need to share more information than required would be voluntary and would be after proper authorization from the owner of the car. The software that ensure this are already in place in the test vehicles.

Self-driven cars are a work in progress and could become the century's greatest invention. There is great appreciation for the government for setting aside \$5 billion to test automated vehicles and ensure their safety. Conversely, there is need to have regulations that foster for the improvement in the technology and use of the vehicle in the future.