***What does it do?***

Autonomous cars are vehicles that relies on built-in sensors and paired with actuators while being governed by algorithms processed by a powerful CPU.

A full suite of state of the art Autonomous Vehicles packages can map out its surrounding by utilizing its own sensors on different places on its frame. Position of other vehicles are detected by a radar while traffic lights are recognized by light sensors. Complex video cameras are used to detect possible road signs, tracking other vehicles and pedestrians. Some models may use Lidar sensors to send pulses of light off of the car’s frame to measure its distances relatively to surrounding objects, road edges and lane markings. Ultrasonic sensors are used to detect parking curbs and possible vehicles when parking.

At the moment, the most popular and recognizable autonomous car is Tesla’s Model S. It features rear, side and forward facing cameras to offer a 360-degree view for maximum visibility. A forward facing radar to detect vehicles in front of it and other distant objects, twelve ultra-sonic sensors to detect nearby cars and coupled with its brake system, can prevent potential car accidents and crashes while also assisting the driver with parking.

At the present, every technology stated can be incorporated into a car. However it will not happen right now because of the efficiency between modules and the physical frame of the vehicle due to the fact that when making a product, there’s always will be compromises with new technologies. To further elaborate, even if cars will take steps to prevent crashes and accidents, manufacturers will not take the risk of standing responsible when their products failed to protect their customers when it’s clearly advertised too be able to protect them. Because of that, the frame of the vehicle still had to be strong enough to handle light bumps but weak enough to be able to crumble its own frame to protect the driver. Installing many modules will forces the car to be constantly reinforced like old cars to protect the sensors, which is really dangerous for a car frame.

In the near future, Tesla may offer the market with more sophisticated sensor packages, better algorithms and processors for its products as mentioned above in the second paragraph. Autonomous vehicles’ technology on its own frame aside, there are still more technologies that can be developed to further compliment the vehicles such as fusion energy. Basically, nuclear fission but cleaner and not disastrous since fusion is atoms smashing into each other so when the reactor fails, the phenomenon just stops happening. In the near future, when fusion energy goes commercial, energy consumption city-wide with AEV (‘autonomous electric vehicles’) will be less of a concern.

Another point to note is the cooperation of cyber security for each car, since vehicles will be mostly run by software, it is also imperative to protect the core programs from invaders. A protected AEV will prevent the passenger and the driver from malicious cyber-attack that may very well cost them their lives. It could also prevent the vehicles from being hijacked and stolen when the vehicle is being parked. Kidnapping situation would also avoided due to attackers stole the control of the car’s program from the owner and possibly blackmail or held hostages.

***What is the likely impact?***

*Firstly, the benefits:*

Convenience and quality-of-life improvements and many. If implemented correctly, physically disabled people no longer have to depend on others to drive the car, which offers them much, much more independence in moving between places, it could also be said the same for the elderly. However, in regards to the elderly, there should be specialized health monitoring equipment for the elderly in case they have a health failure when on the road.

Another benefit to mention is the effects on the environment. With vehicles being fully electrified, CO2 emissions from vehicles will be reduced dramatically. Traffic congestion will also be lowered due to fully autonomous vehicles abiding the trafficking laws better than some human driver. Traffic accidents will also be severely limited which will leads to less traffic fatalities.

*However, considering the cons:*

Jobs such as traffic police will be cut down massively in numbers if a whole city’s traffic infrastructure is fully automated and autonomous. Oil and fuel companies will also be affected majorly, to the point of making them almost obsolete, as such employees of said companies will also be affected.

*Affected technology:*

Gasoline, nitro and diesel engine: Manufacturers of these type of engines will see themselves obsolete to fully electrified engines because if electric cars like Tesla model S and their competitors also switches to electric cars become popular. While gasoline and diesel engines could still sell but they will most likely be in cheap and budget car models and motorcycles, unless motorcycle also joins in the bandwagon of autonomous models.

Energy companies: When vehicles have transited to fully electronic, energy consumption would be all time high, not in the sense of massive energy needed to fuel one vehicle but rather to keep up with the demand of thousands, possibly millions of vehicles charging in turn 24/7. Coupled that with the energy consumption of a city alone, the amount needed would need the full capacity of a city power plant, which in turn will affects the energy that is being syphoned into neighboring cities.

***How will this affect me?***

Hypothetically speaking, if I were to own an autonomous vehicle my daily life activities and habits would change quite a lot. The first that would change would be my ability to multi-task and the rate of work and assignment I can finish. To elaborate further, when driving to and from work and school, people normally would have to focus on driving lest getting into an accident, however with a fully autonomous vehicle I can get work done even when I am on my way to school or work place. While it’s true that going by public transport could also offer the same, time managing is not as efficient compared to personal transportation. Furthermore, it safer to complete work and assignment on your personal car than on a bus.

Secondly, the convenience offered by autonomous vehicles would be even more than traditional vehicles. While almost every vehicles nowadays have GPS, autonomous takes the usage of GPS even higher as GPS is integrated in its system and as such, going to a place I don’t know the direction to be entirely handled by the car’s system. Another instance where it will be convient would be when going out to a party and mistakenly got drunk. Normally, the best choice is to get a friend to take you back or take and Uber but with my car doing all the work, I can just get into the car and told it to take me home.