
The Science Behind Self-Driving Vehicles

Through the years, we have heard many headlines about self-driving cars. For example, we've seen Tesla make plenty of self-driving vehicles starting from 2014. Have you ever thought of how these autopilot cars function? If so, I'll explain furthermore. Three main components are necessary for a self-driving car, these are known as IoT sensors, IoT connectivity, and software algorithms. IoT sensors are sensors built into the car to detect blind-spot monitoring, forward collision warning, radar, and cameras. These are all factors needed to assist the car in autopilot. IoT connectivity is the car itself being connected to cloud computing to act upon weather, traffic, adjacent cars, and GPS maps. These factors allow the car to make informed decisions on how fast it should drive, what lane to stay in, and what routes to take. The last main component needed is software algorithms, this software organizes and analyzes data that the car collects to determine the best course of action. With these 3 main parts, autopilot is possible.

Personally, I believe this topic is very interesting and important to our roadway safety. Unlike cars that are driven by humans, self-driving vehicles are always active in making the best decisions for a safe drive. Self-driving cars aren't only "cool" or simply just "interesting", they can also assist those who can not drive. Around 19% of Americans are disabled, making driving difficult at times or even impossible for some. Soon, self-driven vehicles will be much more advanced and common to see, making transportation very easy and accessible to those who can't drive. This story relates to me because my grandmother struggles with driving. Driving can be very difficult for her, she occasionally gets extremely fatigued and lightheaded. Self-driving cars may help her and prevent any accidents from occurring. This topic has impressed me in many ways, it is great to see how our technology is advancing everyday, making lives easier for many drivers.

These advancements may help the world in various ways. Drivers always have various factors that can affect their driving, putting others in risk. For example, self-driving vehicles aren't affected by a driver's fatigue, emotion, or illness. Recent studies have shown that 90% of road accidents are caused by human error. Self-driving cars are always active, scanning their surrounding environments and directions to make the safest decisions. The vehicle would not allow you to make any unsafe decisions. The usage of self-driving cars means safer roads which benefits everyday drivers. Not only will these self-driven vehicles lower accident rates, but it will also lower the demand for emergency services, car-accident related healthcare, and pricey car insurance. By 2020, self-driving cars are to become a mainstream/common thing seen. Of course, most nice things come with flaws and disadvantages. Tesla has only had 2 fatal accidents since their release of autopilot. Tesla states "Autopilot is meant to be used with an attentive driver whose hands are on the wheel", as much as autopilot allows the car to drive

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and steer on it's own, the driver should always be alert for anything on the road.

In conclusion, Self-driving vehicles have a great amount of science and technology behind them including IoT sensors, IoT Connectivity, and software algorithms. These 3 main components allow vehicles to function on their own. Self-Driving cars offer many great benefits towards our daily lives by making our roads safer and offering transportation to those who cant drive. Unlike human drivers, these vehicles are always functioning making sure the best decisions are made on the road to help the safety of everyone.

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