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THE CONCEPT OF AUTONOMOUS VEHICLE

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An autonomous car is an automated or autonomous vehicle capable of performing the basic transport functions of a traditional car without human intervention. Autonomous vehicles are also known as self-driving cars, driverless cars, or robotic cars. The term self-driving car is becoming a standard as these technologies continue to mature.

How self-driving car works? Autonomous cars are equipped with various sensors and high-speed cameras - in particular, they use ultrasonic systems, infrared or laser sensors. When using these systems, the car simply scans the environment every few milliseconds, using all this technology. These special scanning systems can detect the environment and other vehicles around them not only on the highway, but also in a large metropolis. Unfortunately, it is not possible to ensure complete safety at the moment, since autonomous vehicles cannot outperform vehicles that still require driver participation.

But Autonomous vehicles have a number of advantages:

1) Reducing traffic jams: According to the American Society of Civil Engineers, Americans currently spend more than 6.9 billion hours a year in traffic jams. "Our experiments show that, provided that only 5 percent of vehicles are automated and carefully controlled, we can eliminate accidents caused by human driving behavior," said Daniel B. Work, associate professor at the University of Illinois at Urbana-Champaign, lead researcher in the study of traffic jams. Under normal circumstances, human drivers naturally create emergency traffic, even in the absence of bottlenecks, realignments, mergers or other failures. This phenomenon is called "phantom traffic jam". Researchers

from the University of Illinois found that by controlling the speed of an autonomous car during the study, they were able to level the traffic flow for all cars.

Even reducing the number of accidents could reduce congestion, since up to 25% of congestion is caused by road accidents, says a study of the potential impact of connected and automated vehicles on energy consumption.

2) Reducing CO_2 emissions: Reducing congestion is also likely to lead to a reduction in CO_2 emissions. In addition, the Future of Driving report from Ohio University states: "Since the car will be controlled by software, a modern car can now be programmed to reduce emissions as much as possible. It is expected that the transition to new generation cars will lead to a 60% reduction in emissions."

3) More efficient parking: The Future of Driving report, prepared by Ohio University, states that a significant "impact of self-driving cars is that such cars can park 15% less space. Currently, cars must be parked with sufficient space between them so that the driver can exit after parking and enter when taking the car out of the parking space. With self-driving cars, vehicles can be located close to each other. Urban areas experiencing an acute shortage of space will benefit from switching to driverless cars."

However, the technology is gradually evolving and adapting, and most forecasts show that this innovation will be an ideal tool in the next few years.

References

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