Self – driving cars: The new future?

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Self-driving cars are on track to become a staple of British roads within 2 years, making travel safer, quicker, and more accessible. But how exactly do these machines work?

At the core of self-driving cars is artificial intelligence. Self-driving cars rely on AI to create a real-time, 3D map of the surroundings from information gathered by various sensors. Laser sensors (LIDAR) detect the shapes, sizes and distances of objects, while radar sensors accurately measure their speed and movement. Additionally, ultrasonic sensors – which are already available in many modern cars – aid in parking and manoeuvring by detecting close-range objects.

This mapped data is then processed by perception algorithms, which classify objects into categories, such as other cars, pedestrians and road markings. Coupled with precise GPS tracking, these algorithms enable the car to plan an optimal route that abides by road laws, prioritises safety and optimises efficiency. Now, with a comprehensive understanding of its environment, the AI can control the car's movements.

One of the most important aspects of self-driving cars, however, is their ability to communicate with other vehicles and traffic infrastructure through "Vehicle-to Everything" (V2X) technology. This communication allows the sharing of information, making the roads safer for everyone, for example by one car alerting others in the vicinity what it plans on doing.

While the practical application of this new AI technology is revolutionary for the future of transportation, many are wary – in a recent survey, nearly half of the British population said that they didn't trust the safety or reliability of artificial intelligence driven cars.

Despite self-driving cars minimising human error and massively reducing road accidents, they are not infallible, leading many to feel uneasy at the idea of giving AI full control over a car, without the ability of a person to intervene if necessary. Another concern is of cybersecurity. After all, a car reliant on software is vulnerable to hacking – either to take control of the car or to steal information about the people in there.

Others are concerned about the possibility of self-driving cars taking away jobs such as delivery, taxi and lorry drivers. However, self-driving cars also opens the opportunity for new jobs in developing technology and designing the cars.

Overall, self-driving cars are a groundbreaking development in technology. AI enables these vehicles to navigate complex environments, making split-second decisions and avoiding accidents with far more reliability than humans can, all while learning from their experiences to continuously improve.

The future of self-driving cars is an exciting thing, but what do you think?