Tesla Model S/Model X
Auto-Pilot Mode
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Tesla's self-driving mode is a composition of high tech hardware and software that work together to, to a limit, drive your car for you. The system uses eight cameras that surround the vehicle and twelve ultrasonic sensors to cover off a 250 m radius surrounding the vehicle at all times. The system comes standard in both Tesla's Model S Sedan and Model X Crossover. The camera and sensors relay their inputs to the car's main computing unit where the information is processed and converted into a response suitable to the pending situation whether that be to maintain a speed in a straight line, turn the wheel and adjust speed, or turn a corner.

The system of software and hardware learns from experiences that it goes through and after an action is repeated multiple times at the same location the system will send out a report of the exact instructions for that location to the Tesla headquarters where the information is then processed and sent out to every other Tesla automobile. This means that every car can become a master of that action in that location before ever experiencing it once. For example, if you drove the same route to work repeatedly and in that route you turned right from 100 st to West Ave. in autopilot mode the first time you drive that route you may need to take control back from the system if it is uncomfortable with the turn however, on the tenth time you make the same turn the system will now be confident enough in the degree of the turn,k the amount the wheel needs to spin to match the curve, the amount of acceleration needed, and the speed it needs to match at the end. This turn will now have been mastered and your car will send a report of that corner as so every Tesla can turn the corner just as efficiently.

Tesla is a billion dollar company owned by Elon Musk, a multi billionaire engineer, inventor, and innovator and the company mixes the disciplines of mechanics, computer science, sustainable energy, and mechanical, electrical, computer, and environmental engineering. The company has its roots in 1990 when two inventors had the idea to build an electric car but when Musk took over as an investor and chairman he took the company to the heights of success. In the present Tesla is one of the world's most valuable stocks and the company is set to release the Tesla Model 3, an alteration of the Model S, which will start at just over 35, 000 USD. This reality ultimately succeeds the goals that were laid out for the program by providing affordable, sustainable, and efficient electric transportation with a mode which can self drive in any environment. The automobile is an example of an expert system as well as a vision system as it incorporates machine and software as well as using visual aids to analyze its surroundings.

In the future Tesla hopes to unveil a true "driverless" car as so one does not ever need to touch a pedal nor a wheel. The complications of this system include ethical concerns in regards of safety of the public around the car. Other than the safety factor of a machine without human input there are no other possible ethical complications with the concept.

https://www.tesla.com/en_CA/autopilot
Tesla's official website outlines the hardware and software used in all of their cars.
https://www.youtube.com/watch?v=c4zAPmQZmYA
Marques talks to the workings of the system on the road.
http://www.biography.com/people/elon-musk-20837159
Biography of Elon Musk, the owner and creator of Tesla.
http://www.businessinsider.com/tesla-the-origin-story-2014-10
Tesla's history from 1990 until the present
https://www.tutorialspoint.com/artificial_intelligence/artificial_intelligence_overview.htm
Artificial Intelligence principles