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9/17/17
AP CSP
Mr. Clark

Self-Driving Cars

Computational Artifact

2a. My computational artifact represents self-driving cars. Self-driving cars are meant to make commuting quicker, easier, and safer for humans and they work by driving passengers to a destination without the need for human interaction. My computational artifact explains the function and purpose of self-driving cars by giving helpful visuals that demonstrate how self-driving cars operate.

2b. I created my computational artifact in a graphic design application called Affinity Designer. I created the diagrams by drawing lines and boxes with the pen tool and I wrote text using the text tool. I used the shape drawing tools to create the pictures of the car and its parts.

Computing Innovation

2c. Self-driving cars will make a tremendous impact in the way people commute. Self-driving cars will minimize the number of fatal vehicle accidents, allow people to get to a destination faster and more efficiently, and will eliminate the need for people to learn how to drive. However, since the car will be driven by an on-board computer that navigates the streets, it has the potential of being hacked. If a hacker were to access one's car, he or she may compromise the safety mechanisms and cause the vehicle to endanger the passengers and others on the road.

2d. Self-driving cars work by the many sensors that continuously gather information about the surrounding of the vehicle. Some of these sensors include radar sensors which measure the distance from the car to obstacles, cameras that detect traffic lights, signs, pedestrians, and cyclists, Lidar units that spin and uses laser beams to generate 360 degree images of the car's surroundings, and more(1). A main computer receives the input from these sensors and analyzes the data to assess current conditions. The computer finds a safe path for the vehicle to go, while following all of the traffic laws, and then tells the vehicles motors to run at the correct speed and direction (2). One problem that could manifest as self-driving cars begin to journey onto the roads is the existence of harmful hackers. Because the car is driven by the on-board computer, a hacker could theoretically gain access into this network and cause harm to the vehicle and passengers inside (3).

References

2e.

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(2) Dallegro, Joseph A. "How Google's Self-Driving Car Will Change Everything." Investopedia, 22 May 2014, www.investopedia.com/articles/investing/052014/how-googles-selfdriving-car-will-change-everything.asp.

(3) Shatilin, Ilja. "The Dangers of Self-Driving Cars." Daily English Global

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