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Computer Ethics

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Case Study

Case Description Outline:

Self-Driving cars have been a dream of the world for some time now, research began in 1920 with the first semi-autonomous car being made by Japan’s Tsukuba Mechanical Engineering Laboratory with two mounted cameras that could only drive in specially marked streets. The automotive industry has come a long way since then; now we have companies like Waymo, BMW, and Tesla bringing this dream to the market, some partial automated and some fully, but for convenience’s sake I will refer to all of them as “self-driving” though later I will talk about why the difference is important. But with this progress comes problems and legal concerns specifically where the fault falls in the result of one of these auto-piloted cars crashes.

In March 2018, Apple Engineer Walter Huang was on his way to work when he tragically died behind the wheel the Tesla Model X while it was engaged in autopilot. In the report released on February 25, 2020 it was found that Huang was on his phone while the autopilot was engaged and crashed into a faulty safety barrier. The Model X veered off the road due to limitations with Tesla Autopilots vision and since Tesla’s system were not program to detect the safety barrier that was out farther than it was supposed to be, the car did not engage the emergency brakes and crashed into it.

When this was first reported, Tesla blamed the driver, as they claim the only way this could’ve happened is if the driver was not paying attention to the road. However, before his death, Huang noticed and reported that the Autopilot feature had a tendency to veer left in that area. Because of all this info, the National Transportation Safety Board, NTSB, found that the both Tesla and Huang were to blame: Tesla for negligent systems and Huang distracted driving. They said Tesla was poor at detecting if the driver was paying attention to the road and that allowed for the driver’s compliancy. Furthermore, the barrier that Huang crashed into was broken from being hit earlier and if it had been fixed this likely wouldn’t have happened. Ultimately, in the eyes of the NTSB if any of these factors had been handled appropriately then the crash would not have happened, however they seem to put most of the blame on Tesla themselves.

This was not the first fatality with a self-driving car involved. Both the first and second recorded car crashes involving a self-driving vehicle were both Tesla. The first incident was in January 2016 in China where a Gao Yaning in a Model S crashed into a truck crossing the highway. The car itself was too damaged to run diagnostics and see if the car was in Autopilot, but with the with the driver’s good driving record and that no evasive maneuvers were made, many speculate it was. The second occurred in May of the same year in Florida under similar conditions. Joshua Brown died after his Tesla Model S crashed into an 18-wheeler while in autopilot mode because it couldn’t distinguish the 18-wheeler and against the bright sky and tried to drive under the truck’s trailer. The NTSB conducted a report found Tesla not at fault, as the driver had would have had seven seconds to react and had been reported to be distracted while driving.

Case Analysis

In both of the US cases that the NTBS reviewed the crash was due to a combination failure in the system and the driver not paying attention to the road ahead and putting too much trust in Tesla’s Autopilot. The difference between the 2016 and 2018 cases is the time driver had to react, had they been paying attention. Additionally, while there was failure in the Autopilot’s vision in both cases, in Huang’s the car actively veered off road and had been doing so in that area frequently meaning both the driver shouldn’t have continued to use it and Tesla should not have made it available in that area.

The system used by Tesla, deemed negligent by the NTBS, determines engagement by torque on the steering wheel. Meanwhile for example, General Motors Smart-Cruise measures engagement by the head position, which seems like a much more accurate metric. In my opinion these companies have two options: stop advertising as Self-Driving or upgrade their system to be foolproof. As the head of the NTBS advised, “If you own a car with partial automation, you do not own a self-driving car. Don’t pretend that you do.” And according to Huang’s family, he was under the impression that Tesla’s Autopilot was safer than a human driver. These two imply that the advertisement could be doing a better job of distinguishing the difference between self-driving and partial automation.

Following this the NTSB is calling for the Tesla’s system to be put under review and for the new cars with partial automation to have better driver monitoring systems. Which they had advised in 2017 as well. I agree with this from a computer ethics standpoint as its exonerating the system of responsibility in the situations like this and mitigates the potential for error with a computer’s vision to be the cause someone’s death. In addition, they are also asking phone companies install a mechanism that “disables distracting functions” when driving and have it switched on by default. While agree with this point, is from the basis that the user can control whether its on or off. Otherwise, while it would save lives, it also boarders on infringing an individual’s privacy and autonomy. But from another point of view the exchange of privacy might be worth it if it saves life, which would create a whole other debate, had the NTSB not proposed an option to switch it off as well.

From Tesla’s perspective, both instances the driver was at fault as they put much in the partial automation system. Both deaths could have easily been avoided had the had the drivers been paying attention. Even after noticing the veering Huang proceed drive in such a manner and a series of unfortunate events got him killed, and it’s understandable why Tesla would say this is the driver’s fault, as it definitely is, at least partially in my opinion. This is clear negligence on the driver’s part. In addition, this distracted driving is not a new problem nor is it solely an issue for self-driving cars. According to the NHTSA, about 37,461 lives were lost due to distracted driving. So, these incidents seem small in relation to the bigger issue of distracted driving, but the problem is that they have the technology to stop it from happening or at least mitigate this and they seem to skimping out on it.

“When you can do the things [they] can do, but you don’t, and then the bad things happen, they happen because of you.”

Sources

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