Tesla Tech & Ethics Write Up

Yunzhe Li, August 18, 2024

The development of autonomous vehicle systems invites worry about whether companies care about safety issues rather than caring about money If we are expecting a company to really work on mitigating the dangers of autopilot systems, then Tesla, demonstrating good engineering leadership by centralizing the humanity with truthful manner, care about the public, terrific problem solving, and keen insight, must be one of the candidates.

For the aspect of "holding paramount the safety, health, and welfare of the public, The Tesla autopilot system in 2018, as a level-2 automated driving system under the SAE[1] six levels of vehicle automation, designed a set of warnings visually and audibly when the driver is detected not grabbing the wheel. As level-2 automated driving is defined as systems that provide steering and brake/acceleration support, as well as lane centering and adaptive cruise control[2]. Based on this definition indicating that it is just an assistance rather than a full control, it is fair to say that engineers in Tesla have done all they can do to notify their users through multiple ways under circumstances that endanger life or property, prioritizing safety issues.

Tesla did not take any risks to release an unstable but attention-grabbing version of software that exceeded their competence. As said in the reading that "Musk later realized that the product they currently possessed was already significantly safer than cars without any autonomous technology", Elon Musk frankly acknowledged their system was imperfect and not great[3] though, it indeed outperformed traditional cars and functioned to save lives. Tesla had a clear roadmap about what to do and why to do. The fact that they didn't make profits at early release allow them to gather data and make continual technology improvements to expand competence, which should be highly valued.

Issued statements from Tesla are in an objective and truthful manner. As shown in the articles of Tesla official[4][5], they demonstrated specific data and description like "the adaptive cruise control follow-distance set to minimum", and "the driver's hands were not detected on the wheel for six seconds" through the vehicle's log, posing a solid evidence about what was going on and clarifying the accident reason. Compared to the third party coverage[6], Tesla didn't reveal the name of the owner, showing their truthful and objective devotion to the accident, and consideration to the privacy.

Tesla, strongly influenced by CEO Elon Musk's style, emphasized more on mission and social impact than money, leading to identifying the real essence of the autonomous vehicles – saving lives from accidents. This is a serious topic that 1.19 million deaths[7] are caused by road traffic accidents each year. Driven by this shared identified problem, Tesla made better decisions that introducing imperfect but functional software into early market prepared later success on a long run. Without this explicit problem, the expected News headline of "perfect autopilot" would distort engineers' thoughts and get them into a trap. It is Tesla's clear identification of this problem that has contributed to its ongoing success.

Tesla is consistently investing time and energy in generating new solutions for challenging tasks in this ever-changing world. In 2015, it was the first company introducing autopilot solutions to the public market. As technology develops, Tesla started to work on improved solutions in complex scenarios like highways and city streets[3], applying and researching innovative AI-powered solutions.

To inform and include stakeholder of the proposed solution, Tesla enforced in two aspects, one is about the current proposed solution that Tesla would publicly announce and emphasize like the sets of multiple warning systems for dangerous driver actions, the other is the future proposed solution about how their next version would improve similar to what is shown in the coverage "We're trying to have a single tech stack for both highway & city streets.[3]"

Data from Tesla's accident log and NHTSA data about overall traffic fatalities talk more. As discussed above, Tesla's mission is to save lives from car accidents. Despite fatal crashes still existing, the number of automobile-related deaths is reducing. In fact, it is probably not viewed as a full accomplishment, but an ever-progressing one with strong potential.

By analyzing Tesla's ethical engineering from public responsibility, self-aware competence, and truthfulness, and leadership from problem identification, solution generation, and vision accomplishment, we justify its engineering ethics. With the introduction of Tesla FSD in 2024, we can expect the thrilling outcome - with continual improvements of an autonomous vehicle system first released in 2015 - that aligns with the social expectation to save more lives.

Reference

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