Personal Information:

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Nationality: Viet Nam

Spoken Language: Vietnamese, English

Previous Education: 2015-2017: Le Hong Phong High School from Ho Chi Minh city

Hobbies: novel, PC/Mac game and board game.

IT interest: mobile app, web development.

IT experience: basic web development skill (HTML/CSS/PHP), basic database related skill.

Team Profile:

Myers-Briggs test: ISFJ - Defender

Learning Style test: Visual Learner

Big Five Personality test: Openness - 46/100, Conscientiousness - 48/100, Extraversion - 40/100, Agreeableness - 60/100, and Neuroticism - 67/100

IT Technologies:

What does it do?

Autonomous vehicles (AV), as the name suggested, are self-driving cars. Simply put, these cars can run on the road without any driver behind their wheels. This technology seem impossible to carry out when it was first introduced in the early 20th century. In 1977, the first AV was created and tested successfully given a specific environment. Obviously, it’s nowhere near the practical state, however, that proved the possibility of AV. Fast-forward to present days, what is the current state of AV?

To answer this question, we need to look clearer into many aspects of AV. Up until now, there are many companies which invested or contributed to AV. However, there are only the few big ones that are really matter. Some of famous name are Tesla, Google, Waymo, these names can be counted by hands, which mean there aren’t that many, but also mean that this technology have enough attention. Since the start of 2000s, these companies were constantly giving out results regarding the development of AV. And in the last 5 years, AV were gradually being used on the real road. At the beginning of 2020, Waymo, an American autonomous driving technology company, began to do a model of autonomous taxis in California. The model was a success, over 6000 of customers services were conducted in the first month, and several thousand for each month later up till now. Waymo proved that AV can be used in a practical business.

So, did it ever fail? Yes, and a lot. In 2016, Google began many trials regarding AV on the real road, and multiple crashes were occurred. However, most of the faults are on the other parties. The real problem happened on 18 March 2018, Elaine Herzberg became the first pedestrian who was killed by an AV. When we take a look at the situation, he was clearly at fault for walking outside of a crosswalk. However, many experts raise a good point:” A human driver could have avoided such an accident”. This raise many questions and concerns over the safety of AV. The local government suspended the company’s right of conducting test and experiment related to AV on the area. A notable point is that all the experiments and trials were done by the main or side roads. It’s pretty obvious that a “natural” route with things like branches, rocks, holes is not really advised to use AV.

Another question regarding the current state of AV: “How often do you see an AV on the road?”. This question is surely getting a lot of different answer. In the west, chances are, you wouldn’t see them on a street outside of test area or similar places to California in the previous example, but, you probably saw them once or twice in your life. In Asian, however, most people will probably never see them or even know such a thing exist. This is because the price of AV are very expensive, and most the company related to AV are also stationed in the west. The Asia governments are also really strict about the law regard testing and such, they won’t accept AV on the road unless they are complete and proven to be safe. The same happen to other High-Tech such as VR (Virtual Reality) but to a lesser extent. So just by looking at the popularity, we can see that the day where people can casually “see” AV on the street are quite far, but it’s coming.

So what can we do to improve or speed up the process? For starter, get the safety as high as possible. When people think about AV, the first thing come to their mind is “Is this thing really safe?”. The majority of voices which opposed AV are also for this reason. Let’s look at all the accidents in the past, especially the one that involved in death that was mentioned above. What do they tell us? That AV is impossible and not safe and shouldn’t be a thing? Maybe, but we can think of it in a positive way. Accidents happen because the technology isn’t good enough, maybe the sensor isn’t fast enough, maybe the wheel, the brake doesn’t do what it’s intended to do, there are always thing to improve. The next thing would be about the price, if anyone even consider of releasing this technique/product in Asia, where a lot of countries are still third world, then they really need to lower the cost. At of July 2020, according to Google, the shared price of a AV ride cost 0.2-0.4 $. This price is already high in countries like America, we can imagine how it is in Asia, or Vietnam.

So, how? What kind of technology surround AV that we can continue to develop? For this driverless car to work, the most important thing is the sensor system. This is how this system work. A suite on the vehicle will collect raw data from the environment surrounding it (like what in front, what on the right/left, what behind) and then software algorithm will use that data to calculate many things. It could be what the best next action, the correct vehicle needs to make to avoid crashing. In a sense, we can say that “human make mistakes, machine don’t”. And of course aside from that system, there are a lot of other things to compensate for the “driverless” part. AV needs a navigation system, a location system, an electronic map.