Stanford eCorner

The Future of Autonomous Vehicles

24-04-2024

URL: https://stvp.stanford.edu/clips/the-future-of-autonomous-vehicles

Qasar Younis, CEO of Applied Intuition, observes that the autonomous vehicle industry is at a crossroads with two potential paths: fully autonomous in limited areas, and semi-autonomous with humans in the loop. Self-driving is definitely going to happen, he says. The question is which way it will go, and how to address cost.

Transcript

- You are in the autonomous vehicle space 00:00:05,640 and recently Tesla has been known for ramping up their autonomous vehicle availability with full self-driving.. I wanted to ask, what is your view of the future technologically? What should we be excited and afraid of? Because this technology obviously enables a lot of cool things to happen, but do you envision a future where maybe this limits freedom or enables government surveillance, that sort of thing? Limits- - If the government 00:00:29,460 wants to surveil you, they can.. (chuckles) It's not the self-driving car that's preventing them.. The heart of fear is a misunderstanding, right? Once you start to learn a subject well enough, there is.... And it's like when people get afraid of like large language models and, you know, once you actually work with them, you realize there are limitations.. In autonomy, just two cents there.. The general autonomy ecosystem is falling into two broad categories.. These are gross generalizations, but it's the Waymo way and the Tesla way.. Tesla 12.3, incredible product, but it is not full self-driving in the sense of it literally cannot operate without a human.. You need to have a human there, eyes on the road, hands on the wheels, that is required..

That's not the case with Waymo.. You can have driver out.. The constraints roughly are, Waymo is geographically constrained, and they are over the next 5-10 years, are looking to see how can we expand that geography as fast as possible to get the most addressable market? Right now you have to be in Phoenix or some parts of SF to experience them.. Tesla, on the other hand, again, gross generalizations, or the OEM path, which the passenger car, personal, private ownership of the vehicle is the highway system works, the lane.... You can go everywhere, but you just can't do everything, and you have to be in the loop.. The human has to be in the loop, like, you know, giving commands.. So the, you know, trillion dollar question is, what is gonna be the prevalent way? And I think you can make an argument.... that's extremely heated.. I think you can make arguments both ways.. I think personal car ownership is not going away anytime soon..

When you buy a car, people.... A car's lifetime tends to be 15 years.. So even if every car was an EV that was autonomous, it would still take a generation for all the old cars to actually come out of the system.. So that's just the reality of the situation.. In terms of risk, I mean, I think we're now at a part in the industry, if we were having this conversation in 2017, when we started the company, there was a big question like, will self-driving happen? It's definitely gonna happen.. It's no longer a research and development problem.. It's moved over to the engineering side.. Engineering is, the full line is, it's a cost problem, it's an engineering cost.. How do you get this to be as cheap as possible so it's generally available? By the way,

if you go back in technology, mobile and a bunch of other technologies, they appear the same way.. Even automobiles are not generally available immediately..

Cars, Mercedes invents the car in 1876.. The first stop sign in the octagon form is 1930.. And then the first time it's.... The Department of Transportation is 1960.. So this is a long time for these things to emerge.. You can say, well, today things, technology grows faster, et cetera.. But it's gonna take some time for autonomy to get over there, but it is no longer a research and development problem, like that's solved.. Now, we just gotta make it cheap...