

I was curious if Uber car could avoid the fatal crash with only camera perception. So, I did some analysis this weekend.

- picture shows the earliest frame in which my DL classifier could detect the person.
- using CV transformation and estimation, it is shown the distance of the person from the car is around 10m at the time of detection
- According to authorities the speed of the car was 38mph i.e. 60km/h
- Based on the chart, at that speed it takes 20m to completely stop the car after the brake.
- Even considering 0s processing time, the system could not stop the car in time.
- So, they either needed better classifier for Camera perception or use Lidar/Radar which could detect the person earlier if she was in the middle of road
- I believe if the person meant to cross the road very fast, Lidar/Radar also could not avoid the crash
- Here the behavioral safety comes to play where the system should pull to left/right together with braking to avoid the fatal crash(like a human driver). Not sure if any self driving car can do that!?

First frame person detected



Birdeye view



How long it takes to stop (driving an average family car)

