



CONTEXT

Nowadays there are many accidents occurring in the streets due to human negligence. Most of them are caused by an altered psychological state or a moment of inattention. The autonomous car is a promising solution for this problem providing a means of transportation without being controlled by the driver.

OBJECTIVES

Adapt the car's behavior according to the environment detected in different complex situations :



Adjust the speed of the car when a road sign is detected

Stop the car when there are pedestrians on the road



Slow down when approaching a crosswalk or speed bump

CAR'S ARCHITECTURE



FUTURE DEVELOPMENT

The moving obstacle detection can be improved using LIDAR and sensors fusion.



This product could be improved by implementing the behavior of the car in front of other road signs such as: roadwork sign, yield sign, etc.



TUTORS

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Detection of road signs and pedestrians in a real environment

The car will drive on a straight line of around 20m. Using ultrasonics sensors and real time camera, the car detects the environment and reacts accordingly.



The different types of road signs are detected by AI. It then determines how far away it is and the car reacts accordingly when the sign is reached.

Pedestrians have the highest priority in the behavior of our car. As soon as a pedestrian is detected crossing the road the car must stop at 65 cm minimum. The car restarts when the pedestrian is no longer detected.



The car adapts its speed to the detected speed limit.

After detecting the speed bump sign, the car adapts its behavior to take the speed bump.

It slows down and recovers its previous speed after.



The car stops at the sign for few seconds and restarts with its previous speed.



Behavior of the car

