REPORT
ON PROBLEM BASED LEARNING
Carried out on

AUTO AUTO AI

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NMAM INSTITUTE OF TECHNOLOGY, NITTE

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1. INTRODUCTION

AutoAuto is an innovative platform that provides resources and tools for those interested in self-driving technology. It is a comprehensive ecosystem that enables individuals to learn, research, and invent in the field of self-driving cars. The main goal of the organization is to democratize access to self-driving car technology.

AutoAuto provides educational materials such as tutorials, courses, and hands-on projects to teach people about autonomous driving principles, algorithms, and technology. These resources are suitable for learners of all levels, from beginners to experts.

The AutoAuto platform provides hardware components such as self-driving car kits, sensors, and development boards, as well as software tools and libraries for self-driving car development. This comprehensive set of hardware and software allows users to create and experiment with their own self-driving car prototypes.

AutoAuto enables individuals to apply their knowledge and talents in real-world environments. The platform provides tools and support to build autonomous delivery robots, integrate self-driving capabilities into vehicles, and explore new uses for autonomous technology.

Figure 1.0

2. PROBLEM STATEMENT

Pedestrian Detection and Safety Response:
Develop a autonomous system to detect pedestrian using camera and other sensors. Upon detection, the system alerts the pedestrian by honking and then safely moves forward either in the right or left direction without hitting the pedestrian. Also, car stops whenever the system captures any stop sign.

3. METHODOLOGY

1.*Import the libraries*

```
import car
import time
from random import randint
```

2. *Detecting the pedestrians and warning them*

```
while True:
    frame = car.capture()

    pedestrians_detected = car.detect_pedestrians(frame)

    car.stream(frame, to_labs=True)

    if pedestrians_detected:

        car.honk(3)
```

3. *Randomised Decision making*

```
randpixel = lambda: [randint(0, 1) for i in range(2)]

pixel_value = randpixel()
```

```
                turn_direction = randint(0, 1)
```

4. *Pedestrian avoidance*

```
        if turn_direction == 1:
            car.reverse(0.4)
            car.left(0.4)


        else:
            car.reverse(0.4)
            car.right(0.4)


        car.forward(0.25)



    else:
        stop_sign_detected = car.detect_stop_signs(frame)

        if stop_sign_detected:
            car.stop()
            time.sleep(5)

        else:
            car.forward(0.25)
```

Figure 1.1

4. CONCLUSION

In conclusion, AutoAuto stands as a beacon of innovation in the realm of self-driving technology, striving to make this cutting-edge field accessible to all. The project's focus on pedestrian detection and safety response exemplifies its commitment to ensuring the safety and well-being of individuals on the road. Through a combination of sophisticated algorithms and real-time sensor data, the autonomous system developed here demonstrates a proactive approach to pedestrian safety, alerting pedestrians and maneuvering the vehicle to avoid collisions. By incorporating features like stop sign recognition and randomized decision-making, the system showcases versatility and adaptability in navigating diverse driving scenarios. As we move towards a future where autonomous vehicles play an increasingly integral role in transportation, initiatives like AutoAuto serve as crucial milestones in realizing a safer, more inclusive automotive landscape.