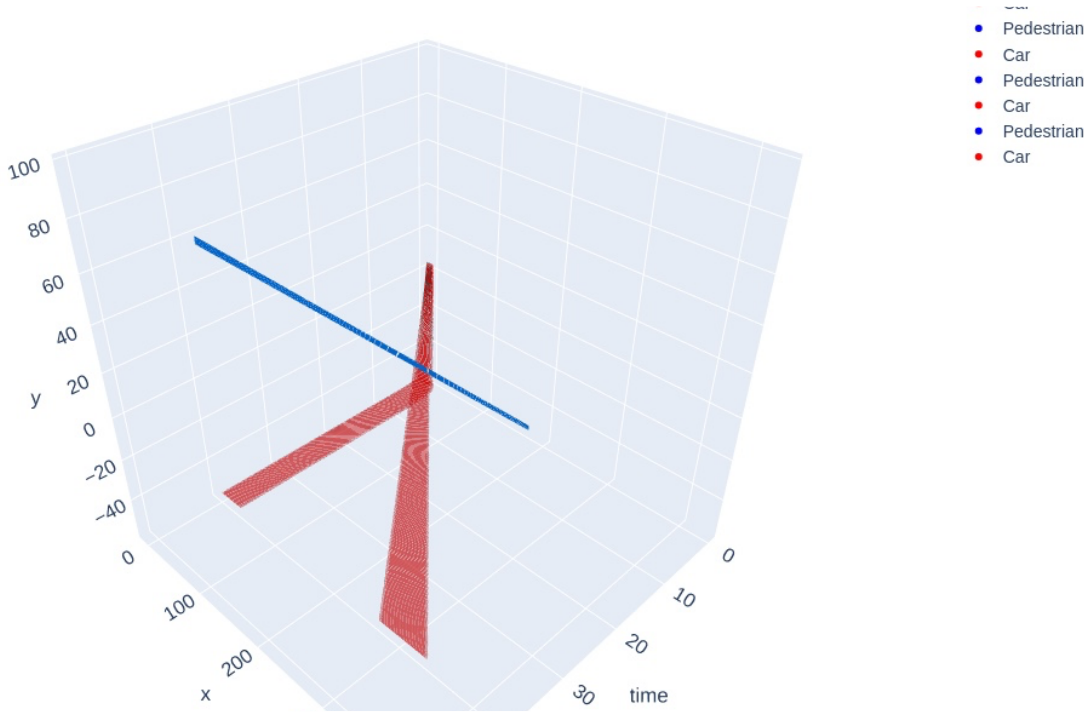
MP0

Problem 3

A

The highest R_i I reach is R_3.

Here is the reachability plot from `verify_refine()`:



B

The average speed I achieve is 7.985.

The output of simulation is:

```
No Unsafety detected!🥰

Overall average velocity over 100 safe executions is 7.985213144490009.

This is above the threshold of 7!😊
```

C

To achieve safety, my DL use `HardBrake` to decelerate as fast as possible,

when the car is close enough to the pedestrian.

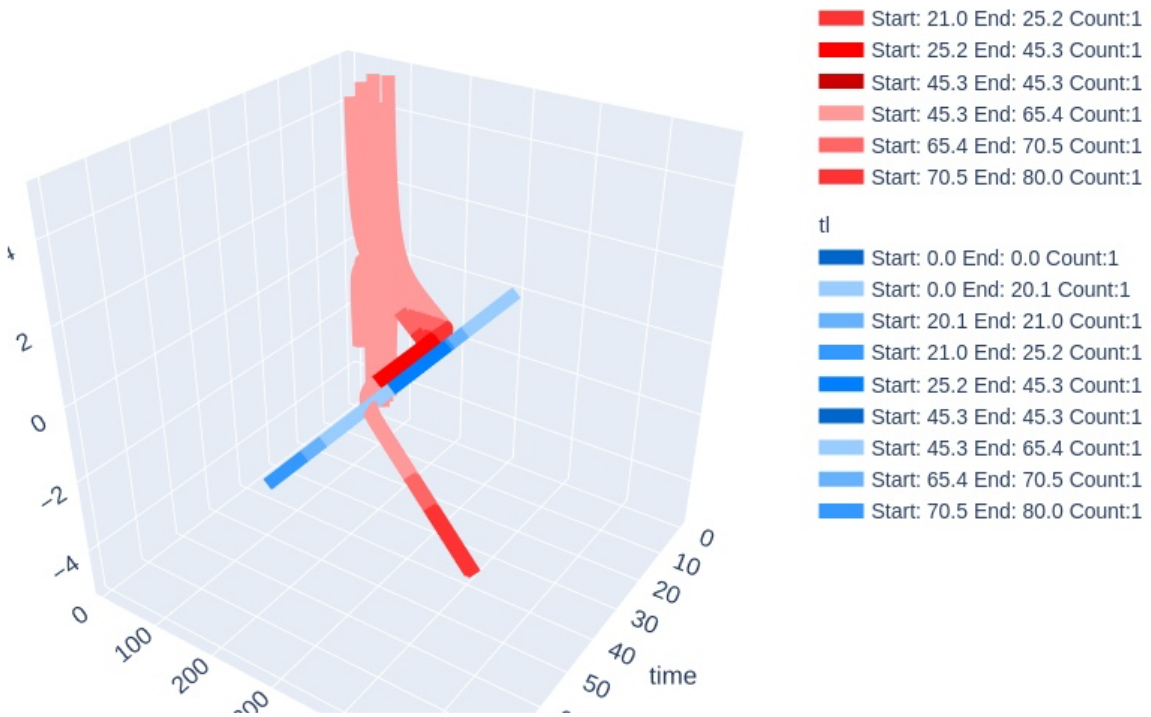
To reach higher average speed, my DL use the lowest distance threshold to start decelerating.

Problem 5

A

The highest R_i I reach is R_3.

Here is the simulation plot:



B

The average speed I achieve is 7.985.

The output of simulation is:

```
No Unsafety detected!🥰

Overall average velocity over 50 safe executions is 6.566738024693409.

This is above the threshold of 6.5!😁
```

C

My DL uses `HardBrake` to decelerate as fast as possible,

when the car is going to enter the Entrance region and the TL is red.

It uses `Accel` to gain a high speed,

which prevents the car to be slow at the Exit region.

Code

My code has been uploaded to https://github.com/Yao-Xinchen/ECE484.