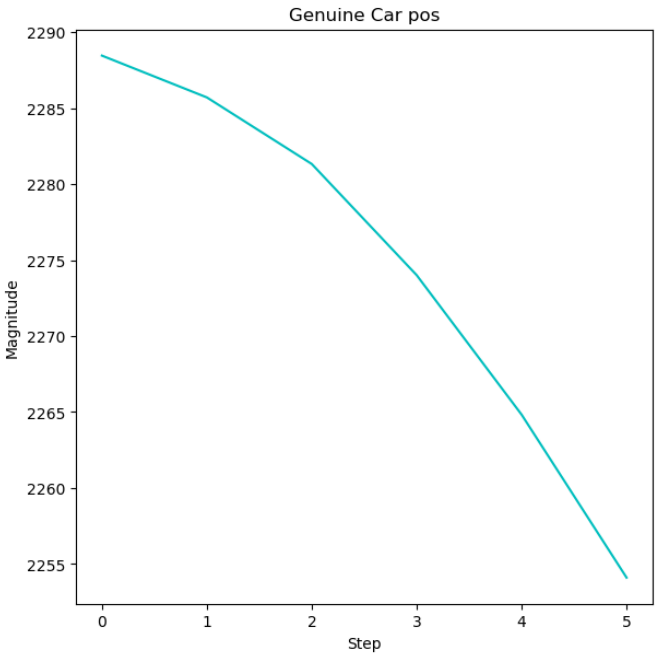
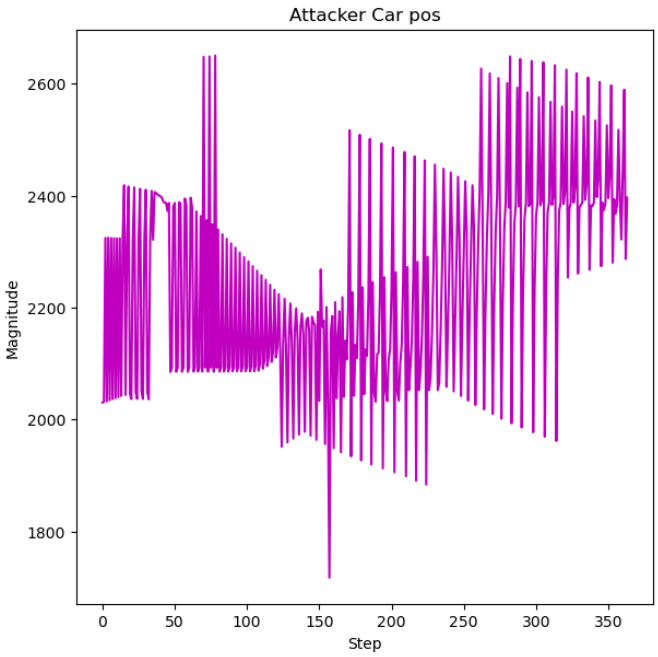
Report 1 - Marshall Thompson

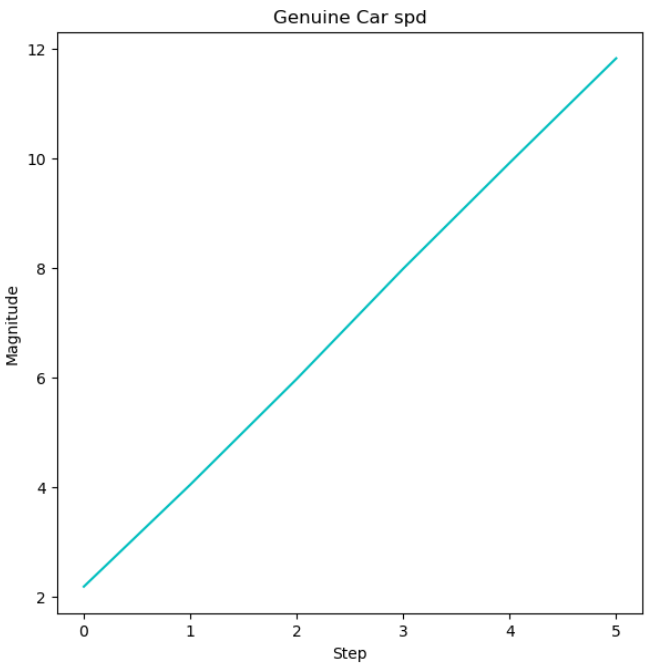
Introduction

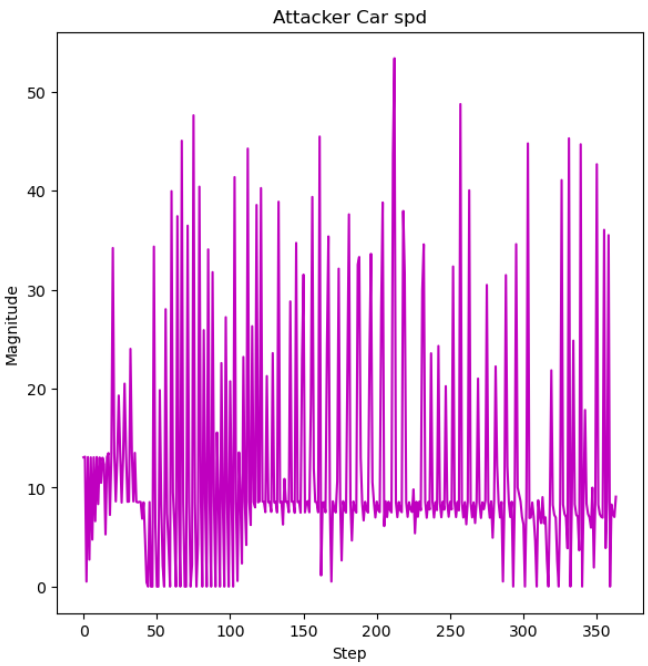
All plots had many data points and were often very compressed, making the alternations in speed, acceleration and heading imperceivable. Therefore I have included both the orginal graphs, and graphs of a subset of the data to make the oscillations in the data clear.

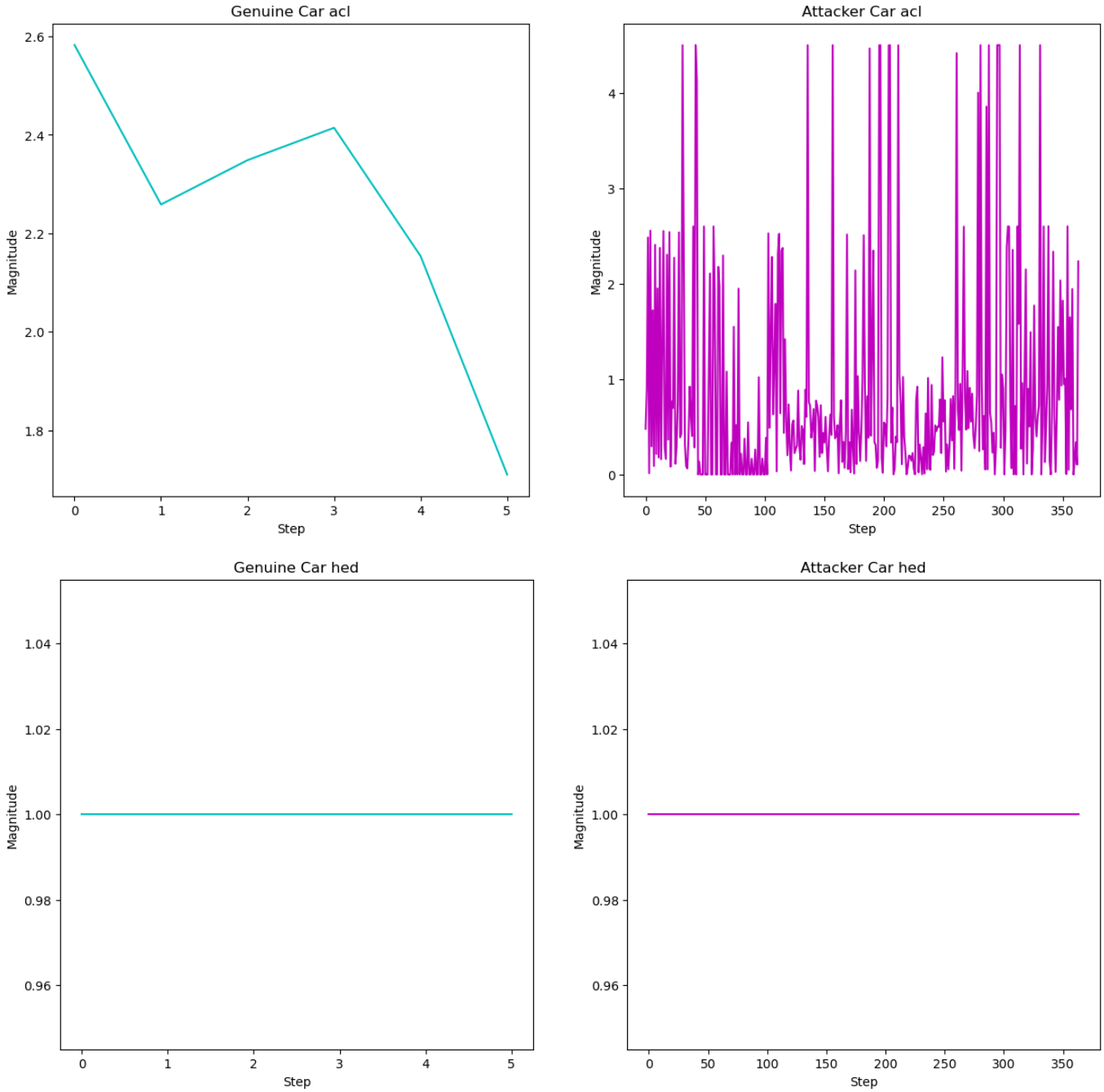
Part 1







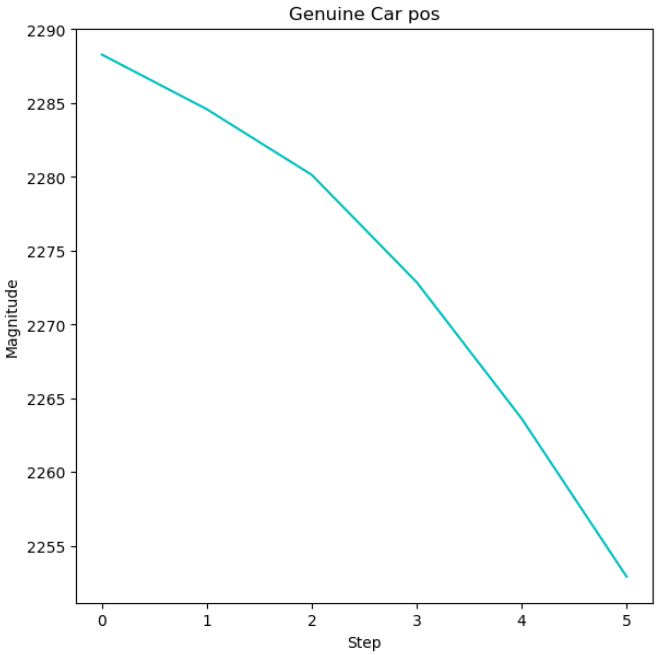


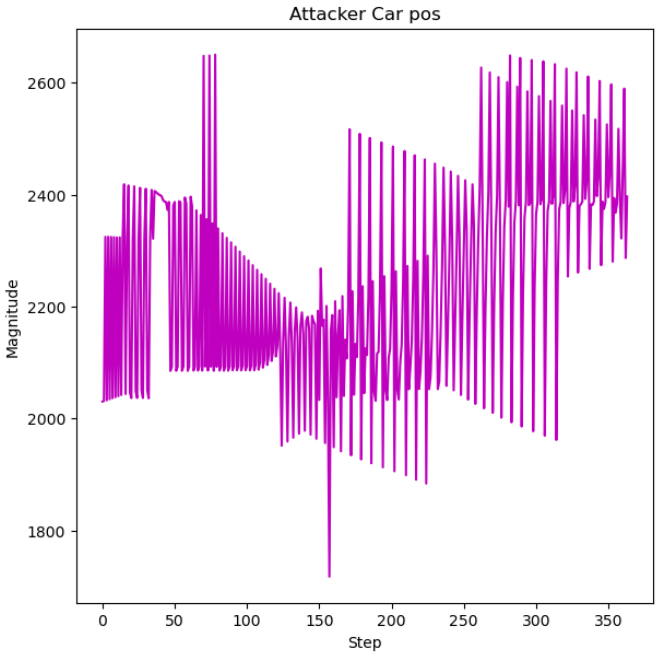


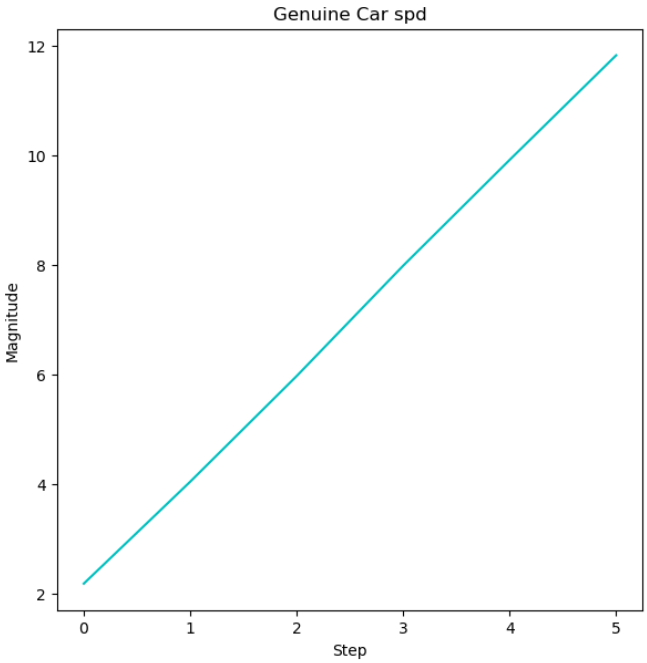
Part 2

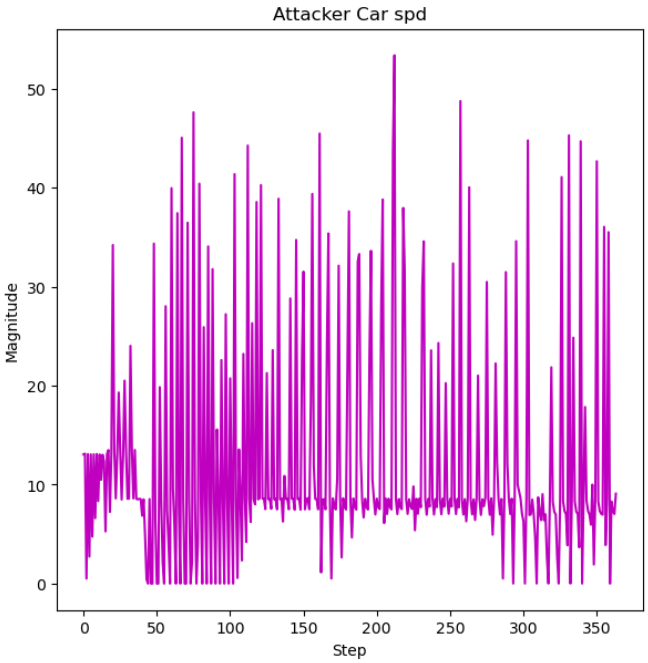
There are a couple of differences between the plots for the genuine care and the attacker car. For the genuine car, the changes in speed, acceleration, and heading are constant or occur at regular intervals. This is in contrast to the random movements of the attacker car. They occur at random intervals and with random magnitudes. Furthermore, the random attacker moved more in the time period than the genuine car.

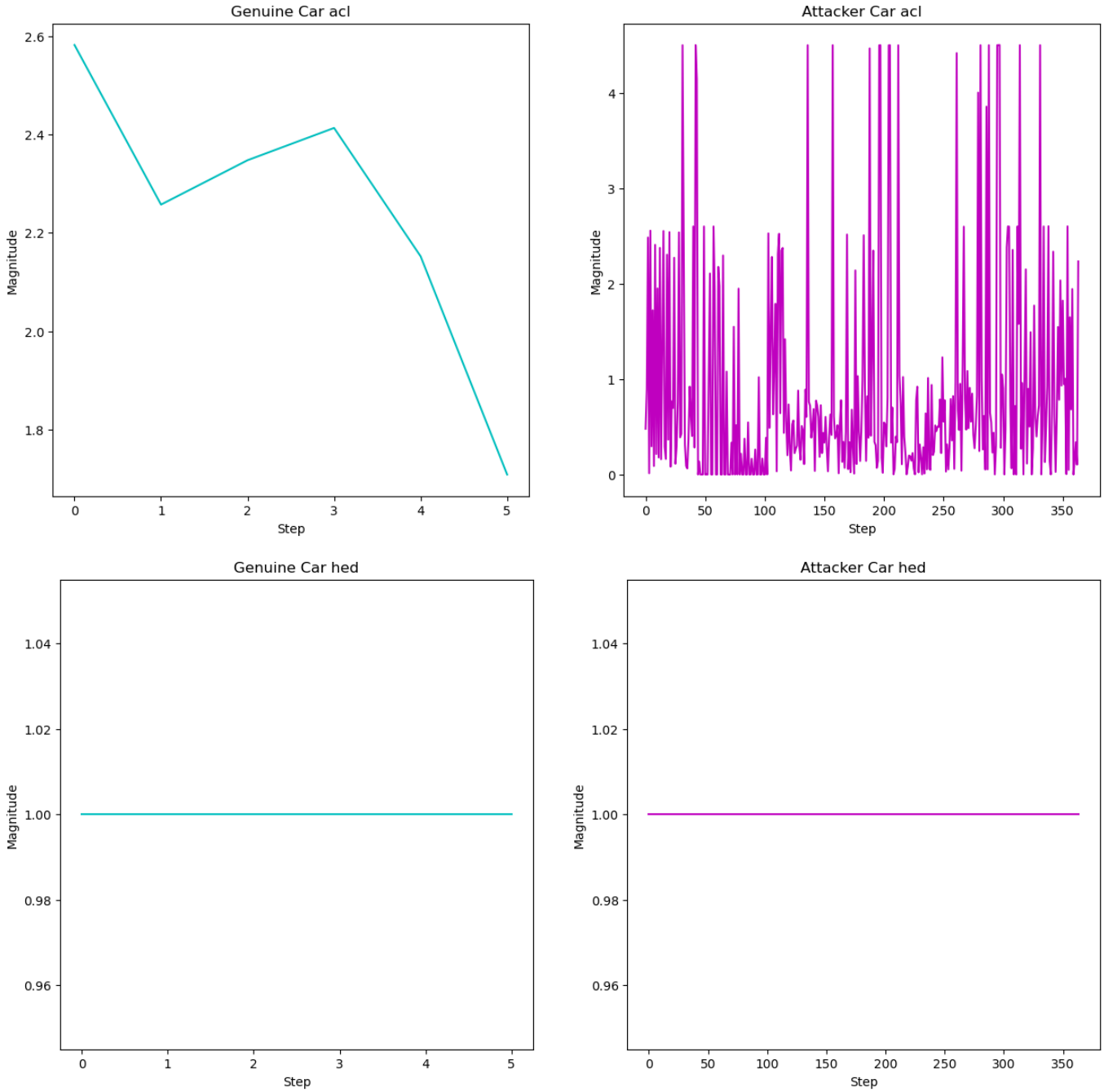
Part 3


Genuine Car pos
Magnitude
Step
2290
2285
2280
2275
2270
2265
2260
2255
0
1
2
3
4
5


Attacker Car pos
Magnitude
Step
2600
2400
2200
2000
1800
0
50
100
150
200
250
300
350


Genuine Car spd
Magnitude
Step
12
10
8
6
4
2
0
1
2
3
4
5


Attacker Car spd
Magnitude
Step
50
40
30
20
10
0
0
50
100
150
200
250
300
350



Part 4

The same observations made in part 3 are true here as well. The attacker by definition is random, and therefore has many random movements, accelerations, and headings while all movements by the genuine car are consistent and periodic. The change in the attack parameters did not have much of an effect on the graphs. There are small changes, however there is nothing significant that I observed