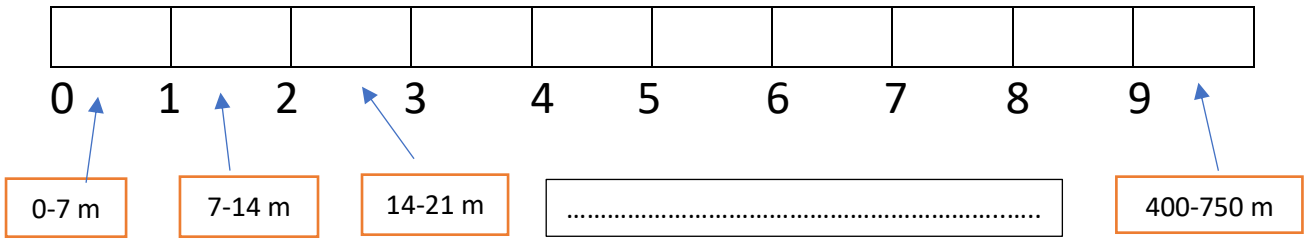
How the deep q learning works with our smart algorithm for Zeev

Let’s take for the example just the left lane:

we have the left turn lane, and the other lanes lets zoom in just to the left turn lane.

The road length is 750 meters we divided it on ten sections:



Because we have just 1 car on this little example the array is:

The road length is 750 meters we divided it on ten sections:

1	0	0	0	0	0	0	0	0	0
0	1	2	3	4	5	6	7	8	9

Now for each road (we have 4 N,S,E,W) we create 2 arrays like the example :

- for the left lane
- for the rest lane (3)

now we have 4 roads multiple 2 arrays per road it gives us

8 arrays that each one his size is 10.

We concatenate the arrays to 1 array with 80 cells

now this array is a snapshot of the map state.

Let call it Input to the 80-length array.

We use this Input, and **we send it to our smart algorithm**

Base on this Input he decides which lanes gets green light.

After the decision was made we create a sample:

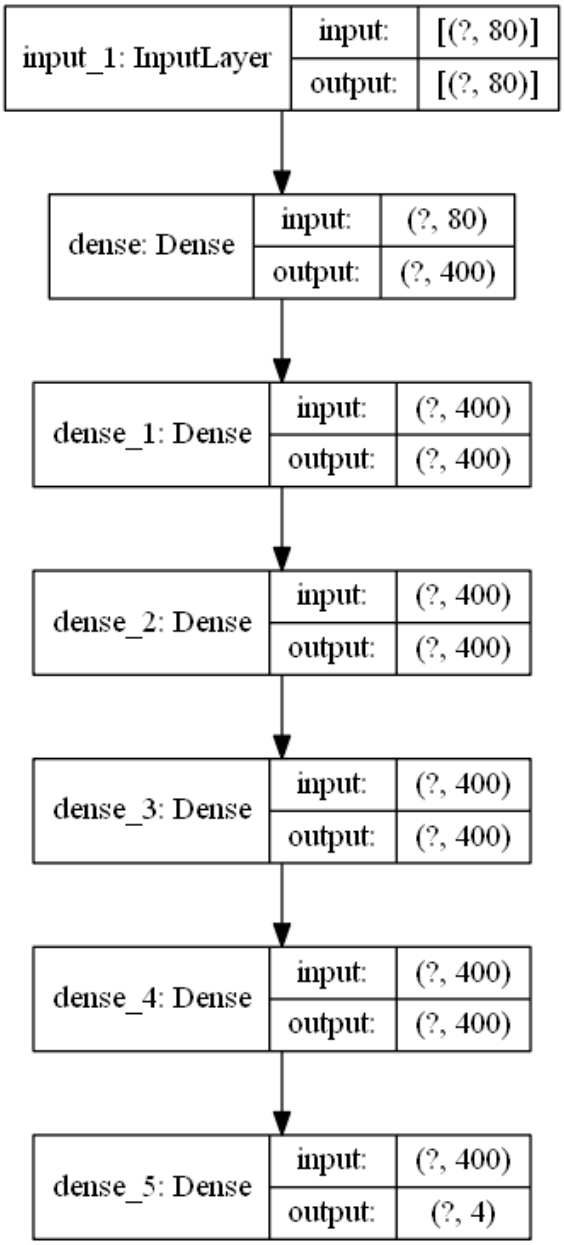
Sample = (Decision, Input)

Now we save all the samples from the simulation

These samples are the dataset for our deep Q-learning model

Then we fit (train) the model with this dataset.

For predict we send to the model the Input



The model returns the Decision