# **Train a Smartcab to Drive**

Xiangwei Wang

### **1. Identify and update state**

### Firstly I change the code to be the follow:

**self.next\_waypoint** = self.planner.next\_waypoint()

*inputs* = self.env.sense(self)

deadline = self.env.get\_deadline(self)

action = None

ran=random.randint(1,4)

if ran == 1:

actino = None

elif ran==2:

action = 'forward'

elif ran==3:

action = 'left'

elif ran==4:

action = 'right'

else:

action = none

reward = self.env.act(self, action)

where **self.next\_waypoint** is the next waypoint location, *inputs* in intersection state and deadline is current deadline value. And they are all the inputs to our agent. For the output or the action lf the agent, it is just random from none, ‘forward’. ‘left’ or ‘right’.

When running in similar, we found that agent just drive blind and random, not approaching to the target, and can not arrive the target within a short time(I observe for about 5min, and it does not make it), the reward is varied about form -1 to 2.