This project is developed for my final year project at NUS(Suzhou)-Research Institute.

This project aims to use reinforcement learning to develop a higher decision maker for autonomous vehicles, which can decide whether to do lane-changing actions in a highway environment.

The base algorithm in this project is Deep Q Network. I also add the VDBE method instead of the traditional epsilon-greedy strategy to improve the learning speed.

Firstly, download SUMO from its website.

Then install packages in requirements.exe.

Reference：

<https://github.com/federicovergallo/SUMO-changing-lane-agent>

<https://link.springer.com/chapter/10.1007/978-3-642-16111-7_23> VDBE strategy