How to install (TF\_DoomBot\_DDQN)

1. Set up anaconda python (python3)
2. Set up Tensorflow (version 1.7)
3. Set up appropriate version of visdoom from <http://vizdoom.cs.put.edu.pl/tutorial> or a direct link to the github <https://github.com/mwydmuch/ViZDoom/blob/master/doc/Building.md>
4. When going through the setup for visdoom, pay close attention to any additional installs they ask as we did the same.
5. Place TF\_Doombot\_DDQN folder into the appropriate directory based on your install method. In our case this was under .../ViSDoom/examples. The .py files for DoomBot need to stay in the same folder together.

How to run

1. By default ddqn.py will start training a new model
2. To load the model provided, in ddqn.py, set load\_model to True
3. The process can be stopped and will save at the current #epoch and exploration, you can then load and continue your training. (To stop it hit CTRL-C)
4. Decide how many epochs you want to run then go to ddqn.py and change epochs to the desired number.
5. Run ddqn.py

Troubleshooting

1. If you want the original model you can do two things
   1. You can copy from the backup folder provided
   2. You can redownload the DoomBot package from GitHub

Additional Notes

For the double Q learning, the update frequency of the two networks (or frequency of synchronization of the target Q network and prediction Q network) can be fiddled with in the code. By default, it occurs every 10 epochs. To change this frequency, find the target\_update\_freq value and change it to the desired number

At end of training, the program will play a specified number of visual episodes indicated by the variable visible\_eps, and the final of these will be saved into a file named episode.lmp which can be replayed by running replay.py.

The Doom editor lets you customize scenarios like changing the reward values and goals as well as enemy placement