## Total Environment Installation Guide for gym\_torcs

Torcs Env Setup in Ubuntu:

1. **Install Anaconda and python 3.7**

* sudo apt-get install libgl1-mesa-glx libegl1-mesa libxrandr2 libxrandr2 libxss1 libxcursor1 libxcomposite1 libasound2 libxi6 libxtst6
* Download anaconda from website <https://www.anaconda.com/products/individual>
* Follow instructions on <https://docs.anaconda.com/anaconda/install/linux/>
  + { check the recent file name instead of “2020.02” portion in file name
  + {after installing anaconda if it says “Conda command not found” set path of anaconda by
    - export PATH="/home/username/anaconda3/bin:$PATH"

1. **Create an environment in anaconda with python version=x [x= your version number]**
   1. conda env create –-name turinglab python=3.7

{now we have a folder turingla in home/username/anaconda3/envs/}

1. **Install gym (assuming we are inside home/username/anaconda3/envs/turinglab/)**
   1. sudo apt install git
   2. git clone <https://github.com/openai/gym.git>
      1. You will see a folder “gym” under turinglab
   3. cd gym (now, we are inside gym folder)
   4. sudo apt-get install -y python-numpy python-dev cmake zlib1g-dev libjpeg-dev xvfb ffmpeg xorg-dev python-opengl libboost-all-dev libsdl2-dev swig
   5. pip install 'gym[all]'
   6. sudo apt-get install xautomation
   7. git clone <https://github.com/ugo-nama-kun/gym_torcs.git>
   8. cd gym\_torcs
   9. cd vtorcs-RL-color
   10. sudo apt-get install libglib2.0-dev libgl1-mesa-dev libglu1-mesa-dev freeglut3-dev libplib-dev libopenal-dev libalut-dev libxi-dev libxmu-dev libxrender-dev libxrandr-dev libpng-dev
   11. ./configure
   12. make
       1. After executing make, an error will be shown like “geometry.cpp:373:8: error: ‘isnan’ was not declared in this scope; did you mean ‘std::isnan’?”
       2. To solve that go to folder /home/rafail/anaconda3/envs/turinglab/gym/gym\_torcs/vtorcs-RL-color/src/drivers/olethros
       3. Open geometry.cpp { here is the problem }
       4. In 373 line replace, isnan with std::isnan(r), save that file and again execute ‘make’
       5. make
   13. sudo make install
   14. sudo make datainstall

{ All good! }

1. **Start torcs [server side]**
   1. sudo torcs
   2. Click the Race --> Practice --> Configure Race configuration parameter and click Race --> Practice --> New Race to start the server.

{ at this point torcs will wait for the client to start}

1. **Run client code [client side]**
   1. Open a python client file ‘snakeoil3\_gym.py’. This file is located under anaconda3/envs/turinglab/gym/gym\_torcs.
   2. Run this python client file
      1. python snakeoil3\_gym.py

At this moment, the server will start running. If not, again run the python file.

* Open gym\_torcs.py
* Insert these two line at the very beginning and save it
  + import sys #{add this two line before import gym}
  + sys.path.append('/home/username/anaconda3/envs/turinglab/gym') # change #the path according to your system

If you see an error like this one below, add two extra lines before you call import gym and save that file.

“ifModuleNotFoundError: No module named 'gym'”

* import sys #{add this two line before import gym}
* sys.path.append('/home/username/anaconda3/envs/turinglab/gym') # change #the path according to your system

Ref:

1.https://docs.anaconda.com/anaconda/install/linux/

2. <https://www.programmersought.com/article/6111281249/>

3. <https://www.programmersought.com/article/2490150919/>

**\*\*\*\*\*\*\* All good! Now, you have your environment set up to work on \*\*\*\*\*\*\***