Setup Run Instructions for CS 595a Project

This readme file is for CS 595a project by Samuel Edwards and Herbert Roberts.

The commands outlined in this document are for the anaconda terminal and were copied from the associated URL links.

# Setup Instructions

**First instruction set to get the basics working from:**

<https://towardsdatascience.com/how-to-install-openai-gym-in-a-windows-environment-338969e24d30>

* Pip install gym
* Conda install pystan
* Conda install swig
* Conda install box2d
* pip install gym[all]
* pip install --no-index -f https://github.com/Kojoley/atari-py/releases atari\_py
* conda install -c anaconda make
* install xming from here: <https://sourceforge.net/projects/xming/>

**Following link is used to download and create account for mujoco. It must be mujoco 150pro. Unzip location is generated using command prompt ‘mkdir .mujoco’. Key file is located in .mujoco AND in .mujoco\mjpro150\bin**

<https://medium.com/@SeoJaeDuk/archive-post-how-to-install-open-ai-gym-on-windows-1f5208c16179>

* Added to anaconda’s file path using:
* Conda develop C:\Users\taran\.mujoco\mjpro150
* Added C:\Users\taran\.mujoco\mjpro150\bin to the windows path system variables
* And added C:\Users\taran\.mujoco\mjpro150\bin%PATH% to the windows path system variables
* Conda install git
* conda install -c conda-forge ffmpeg
* conda update –all
* conda clean -a
* pip install gym[all]

**followed instructions from** [**https://github.com/openai/mujoco-py/issues/253**](https://github.com/openai/mujoco-py/issues/253) **to install dependencies. The git to download must be version 150 as later versions are not supported on windows at** [**https://github.com/openai/mujoco-py/releases/tag/1.50.1.0**](https://github.com/openai/mujoco-py/releases/tag/1.50.1.0)

* Used jupyter terminal to navigate to the location of the cloned mujoco-py git.
* Pip install -r requirements.txt
* Pip install -r requirements.dev.txt
* Python setup.py install
* Python examples\body\_interaction.py (runs an example)

<http://www.mujoco.org/book/programming.html> - implementation hints from mujoco

**Second instruction set to get Atari working**

<https://stackoverflow.com/questions/42605769/openai-gym-atari-on-windows?fbclid=IwAR3rU9ZjAMN_-xMWiSezKWlxsSV6PnZhIf6OoKBO-9KI5X5aqZHokmVYqh8>

**Install the package for graphviz by**

* Pip install graphviz
* Conda install python-graphviz
* Conda install -c anaconda-graphviz

Add graphvis to the path file (C:\Users\taran\Anaconda3\Lib\site-packages\graphviz)

## Compiling Instructions

The Jupyter project is split into sections with corresponding headings. The sections should be run in the following order:

1. Imports
2. Functions
3. New Population (Do not run this section if loading an old population)
   1. Change the value of ‘n’ to set the number of generations to be run
4. Load the population (Do not run if creating a new population)
   1. Checkpoint = <file name of checkpoint.
5. Continue running (for either a new population or loaded population. Loaded populations must be run for at least 1 generation to provided data)
6. Display the genome with best fitness – Runs and displays the best genome on the display (display will only activate if ‘set DISPLAY=: 1’ has been performed in command prompt)
7. Test Box – uses the visualize library to show graphs for the fitness, species, and the connections of the neural network (works best if a new population has been run)