ReadMe for TGOD-SD

1. Environment

Python 3.5

Mujoco1.3.1: http://www.roboti.us/download/mjpro131_linux.zip

2. Trajectory Generation with Oriented Diversity

2.1. TGOD.py launches Oriented Diversity

The generated Trajectories is stored as a PKL file, and our run results are stored in: ACTION_LENGTH100 andACTION_LENGTH300.

Due to the limitation of uploading size, GitHub only shows part of the representative results, and the complete experimental results and videos can be obtained from the following web disk:

https://pan.baidu.com/s/1X_SPVDFDbg7GYAU92bk_Jw

Key: t55n

Program Run: python TGSD.py --env= "Environment" --log_dir= "Storage Location"

Tips:

●Parameters changes: Row 19

●Environment changes: Row 42

2.2. Visualize_skill.py allows you to visualize the generated Trajectories. Our visualization results are saved in Skill Video100 and Skill Video300.

Program Run: python visualize_skills.py "Storage Location of pkl"

3. Trajectory Matching with Sinkhorn Distance

Sinkhorn Distance is the best similarity evaluation algorithm, the expert trajectory, student trajectories, and max-path-length is needed (Set as you wish).

Program Run: Sinkhorn Distance.py

4. Implementation on Real Robot

Realize the transfer of robot trajectory from Mujoco to UR5.

Program Run: Sim-to-Real.py

Please feel free to change and use the code for review and academic purposes. If you have any questions, please contact us by: jxxie20@fudan.edu.cn