Temporal Abstraction in Episodic Control

Exploring the use of temporal abstraction in the context of episodic control.

Environment Setup

Install numpy, pytorch, matplotlib, networkx, scikit-learn

Install jupyter-notebook (We have added a jupyter notebook and its corresponding Colab link).

Usage

Random projection:

python train.py \ --embedding_type random \ --out_data_file ../results/MFEC/MFEC_rand_rooms_mnist_3knn.npy

VAE:

python train.py \ --embedding_type VAE \ --vae_batch_size 4 \ --vae_train_frames 100000 \ --vae_epochs 10 \ --lr 1e-5 \ --vae_print_every 100 \ --load_vae_from ../weights/VAE/VAE_rooms_mnist.pt \ --out_data_f

SR (DP):

python train.py \ --SR_gamma 0.99 \ --SR_batch_size 32 \ --SR_train_frames 1000000 \ --SR_epochs 10 \ --SR_train_algo DP \ --embedding_type SR \ --SR_embedding_type random \ --n_hidden 100 \ --lr 0.000006 \ --SR_filename ../results/MFEC_SR/random_DP_mnist_3knn \ --out_data_file ../results/MFEC_SR/MFEC_SR_rand_DP_rooms_mnist_3knn.npy

SR (TD):

python train.py \ --SR_gamma 0.99 \ --SR_batch_size 64 \ --SR_train_frames 1000000 \ --SR_epochs 200 \ --SR_train_algo TD \ --embedding_type SR \ --SR_embedding_type random \ --n_hidden 100 \ --lr 0.0001 \ --SR_filename ../results/MFEC_SR/random_TD_mnist_200epochs_3knn \ --out_data_file ../results/MFEC_SR/MFEC_SR_rand_TD_rooms_mnist_200epochs_3knn.npy