Training a CUT/SinGAN model:

This document serves as a guide to training your own CUT/SinGAN models with custom data. To successfully train the model with your own files, follow the instructions carefully:

Setting up the environment:

To begin, install the python requirements mentioned in the requirements.txt file, you may do so by running the following command:

pip install -r requirements.txt

from the SinGAN/CUT directory set as the working directory.

Prerequisites:

1. Python 3
2. CPU or Nvidia GPU + CUDA CuDNN

CUT:

Setting up the dataset and Training the model:

To begin training, you need to set-up your training data as follows:

1. Create a new folder "**AudioData**" in the "**datasets**" folder.
2. Inside "**AudioData**", create two folders – "**trainA**" and "**trainB**".
3. Place the clean files in the folder "**trainA**" and the noisy files in the folder "**trainB**".
4. Now, with everything set up, run the following command to begin the training process:

   python train.py --dataroot ./datasets/AudioData --name AudioData --CUT_mode CUT --display_id 0 --state Train

   By default, the dataset is initialized in a random order, to make CUT use parallel samples from each domain, add an extra parameter: *--parallel_data 1*
5. The weights are stored as checkpoints in a new "checkpoints" folder created during the training phase.

Note: CUT (Contrastive Unpaired Translation) can work with unpaired (Non-parallel) data. And the componentization module (breaks spectrogram into components and treats them as individual samples) allows us to train the model with very less data.

SinGAN:

Setting up the dataset and Training the model:

To begin training, you need to set-up your training data as follows:

1. Place the style image (in our case, noisy speech audio) in the root directory of SinGAN.
2. Now, with everything set up, run the following command to begin the training process:

   python main_train.py --input_wav_train <train_file_name>.wav

3. The weights are stored in a new folder inside the "**TrainedModels**" directory.