StarGAN-VC

This is a pytorch implementation of the paper: StarGAN-VC: Non-parallel many-to-many voice conversion with star generative adversarial networks.

The converted voice examples are in samples directory

Dependencies

- Python 3.6
- pytorch 1.0
- librosa
- pyworld
- tensorboardX
- scikit-learn

Usage

Download dataset

Download the vcc 2016 dataset to the current directory

python download.py

The downloaded zip files are extracted to ./data/vcc2016_training and ./data/evaluation_all.

1. training set: In the paper, the author choose four speakers from ./data/vcc2016_training. So we move the corresponding folder(eg. SF1,SF2,TM1,TM2) to ./data/speakers.
2. testing set In the paper, the author choose four speakers from ./data/evaluation_all. So we move the corresponding folder(eg. SF1,SF2,TM1,TM2) to ./data/speakers_test.

The data directory now looks like this:

```
data
├──── speakers  (training set)
|       ├──── SF1
|       ├──── SF2
|       ├──── TM1
|       └──── TM2
├──── speakers_test (testing set)
|       ├──── SF1
|       ├──── SF2
|       ├──── TM1
|       └──── TM2
├──── vcc2016_training (vcc 2016 training set)
|       ├──── ...
├──── evaluation_all (vcc 2016 evaluation set, we use it as testing set)
```

```
|      ├── ...
```

Preprocess

Extract features (mcep, f0, ap) from each speech clip. The features are stored as npy files. We also calculate the statistical characteristics for each speaker.

```
python preprocess.py
```

This process may take minutes !

Train

```
python main.py
```

Convert

```
python main.py --mode test --test_iters 200000 --src_speaker TM1 --trg_speaker "['TM1','SF1']"
```

Network structure

Snip20181102_2

Note: Our implementation follows the original paper's network structure, while pytorch StarGAN-VC code use StarGAN's network.Both can generate good audio quality.

Reference

tensorflow StarGAN-VC code

StarGAN code

CycleGAN-VC code

pytorch-StarGAN-VC code

StarGAN-VC paper

StarGAN paper

CycleGAN paper

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