Class-Imbalanced Semi-Supervised Learning (CISSL)

- Code For Classification

Requirements

- CUDA-enabled GPU
- Python 3.6+
- PyTorch 1.1.0
- torchvision 0.3.0
- numpy 1.16.2

Prepare dataset (CIFAR10, SVHN)

```
sh build_dataset.sh
```

Toy examples

- Twomoons, Fourspins (Fig.1)

```
sh run_toy.sh
```

Experiments

Comparison of Imbalance Factor and Number of Labeled Samples

- CIFAR10 nlabels 4000, imbalance factor 100, seed 0 (Table.2a, Table.4a)

```
sh run_cifar10.sh
```

- SVHN nlabels 1000, imbalance factor 100, seed 0 (Table.2b, Table.4b)

```
sh run_svhn.sh
```

Comparison of Class Imbalanced Learning Methods

- CIFAR10 nlabels 4000, imbalance factor 100, seed 0 (Table.3a)

```
sh run_cifar10_reweight.sh
```

- SVHN nlabels 1000, imbalance factor 100, seed 0 (Table.3b)

```
sh run_svhn_reweight.sh
```

You can run expemerimens with different settings by changing arguments.

The size of unlabled data for each run is described in the supplementary material.

Please check the detailed options by

```
python train_imbalance.py -h
```