The Implementation of "Stochastic Adversarial Network for Multi-Domain Text Classification" in Pytorch

## Datasets

We used the same benchmarks as used in Conditional Adversarial Networks for Multi-Domain Text Classification.The datasets can be found at <https://github.com/YuanWu3/Conditional-Adversarial-Networks-for-Multi-Domain-Text-Classification/tree/main/data>

Put the dataset into the corresponding folder: fdu-mtl、prep-amazon and w2v.

## Requirements:

* Python 3.6
* Pytorch 1.10
* Torchnet
* Scipy
* Tqdm

##Initialization:

To obtain the initial model, run the corresponding code and put it into the folder "./save/init\_model":

### Experiment 1: MDTC on the multi-domain Amazon dataset

```bash

cd code/

python exp1\_init.py --dataset prep-amazon --model mlp

```

### Experiment 2: Multi-Source Domain Adaptation

```bash

cd code/

# target domain: books

python exp2\_init.py --dataset prep-amazon --model mlp --no\_wgan\_trick --domains dvd electronics kitchen --unlabeled\_domains books --dev\_domains books

# target domain: dvd

python exp2\_init.py --dataset prep-amazon --model mlp --no\_wgan\_trick --domains books electronics kitchen --unlabeled\_domains dvd --dev\_domains dvd

# target domain: electronics

python exp2\_init.py --dataset prep-amazon --model mlp --no\_wgan\_trick --domains books dvd kitchen --unlabeled\_domains electronics --dev\_domains electronics

# target domain: kitchen

python exp2\_init.py --dataset prep-amazon --model mlp --no\_wgan\_trick --domains dvd electronics kitchen --unlabeled\_domains kitchen --dev\_domains kitchen

### Experiment 3: MDTC on the FDU-MTL dataset

```bash

cd code/

python exp3\_init.py --dataset fdu-mtl --model cnn --max\_epoch 30

```

## Training

All the parameters are set as mentioned in the paper. You can use the following commands to the tasks:

### Experiment 1: MDTC on the multi-domain Amazon dataset

```bash

cd code/

python exp1\_with\_pseu\_label.py --dataset prep-amazon --model mlp

```

### Experiment 2: Multi-Source Domain Adaptation

```bash

cd code/

# target domain: books

python exp2\_with\_pseu\_label.py --dataset prep-amazon --model mlp --no\_wgan\_trick --domains dvd electronics kitchen --unlabeled\_domains books --dev\_domains books

# target domain: dvd

python exp2\_with\_pseu\_label.py --dataset prep-amazon --model mlp --no\_wgan\_trick --domains books electronics kitchen --unlabeled\_domains dvd --dev\_domains dvd

# target domain: electronics

python exp2\_with\_pseu\_label.py --dataset prep-amazon --model mlp --no\_wgan\_trick --domains books dvd kitchen --unlabeled\_domains electronics --dev\_domains electronics

# target domain: kitchen

python exp2\_with\_pseu\_label.py --dataset prep-amazon --model mlp --no\_wgan\_trick --domains dvd electronics kitchen --unlabeled\_domains kitchen --dev\_domains kitchen

### Experiment 3: MDTC on the FDU-MTL dataset

```bash

cd code/

python exp3\_with\_pseu\_label.py --dataset fdu-mtl --model cnn --max\_epoch 30

```