Sequential Recommendation System via Pretain

repo link: https://github.com/nancheng58/Pretraining-for-Recommender-Systems

Overview

This is a repo of several Sequential Recommendation System baseline.

Model	Paper title and link	Code link	Topic	From
ASReP	*Augmenting Sequential Recommendation with Pseudo-Prior Items via Reversely Pre-training Transformer*	https://github.com/DyGRec/ASReP	Sequential Rec	SIGIR2021
SASRec	Self-Attentive Sequential Recommendation	https://github.com/kang205/SASRec	Sequential Rec	ICDM2018
DHCN	*Self-Supervised Hypergraph Convolutional Networks for Session-based Recommendation*	https://github.com/xiaxin1998/DHCN	Session Rec	AAAI2021
S3Rec	*S3Rec: Self-Supervised Learning for Sequential Recommendation with Mutual Information Maximization*	https://github.com/RUCAIBox/CIKM2020-S3Rec	Sequential Rec	CIKM2020
MrTransformer	*Improving Transformer-based Sequential Recommenders through Preference Editing*	https://github.com/mamuyang/MrTransformer	Sequential Rec	arXiv
BERT4Rec	*BERT4Rec: Sequential Recommendation with Bidirectional Encoder Representations from Transformer*	https://github.com/FeiSun/BERT4Rec	Sequential Rec	CIKM2019
CL4SRec	*Contrastive Learning for Sequential Recommendation*	our reproduction via RecBole	Sequential Rec	arXiv
SGL	*Self-supervised Graph Learning for Recommendation*	https://github.com/wujcan/SGL	Session Rec	SIGIR2021

For CL4Rec and SGL models, we reproduce them and run experiment with RecBole.

The code is changed relative to the original code. For example, we have added the code to count the indicators of different length series in each model. In addition, for ASReP model and BERT4Rec model, we add ablation study.

AsReP ablation study

消融实验	说明	对应参数
findByEmbed	先计算pretrain model的item embedding，再mean pool得到seq的embedding，	--aug_mode inspire(在run_pretrain.bash文件里更改)
pop	随机选择top50物品，再随机增广	用到的函数在已写到util.py中，稍作修改即可用（需在源码更改）
point	选择top-k物品一次性生成	--aug_mode seq2point(在run_pretrain.bash文件里更改)
seq	按照自回归的方式生成	--aug_mode seq2seq(在run_pretrain.bash文件里更改)
-pretrain	去掉pretrain过程	--reversed_pretrain -1(在run_finetune.bash文件里更改)
-aud data	去掉增广数据，其实就是生成阈值M设为0	--M 0(在run_finetune.bash文件里更改)

Usage

Environments

In every baseline model folder，if you can find the requirement.txt, you can use

`pip install -r requirements.txt` if you use pip.

`conda install --yes --file requirements.txt` if you use conda.

Slurm

In every baseline folder, there is a slurm execute script.

About slurm usage,you can reference this link: https://slurm.schedmd.com/documentation.html

[Note: you ought to create result folder before execute script]

[Note: you ought to modify "conda activate envname" to your environment]

```
#!/bin/bash
#SBATCH -e result/sas_ans_FT.err
#SBATCH -o result/sas_ans_FT.out
#SBATCH -J sas4recFT
```

```
#SBATCH --partition=debug
#SBATCH --nodelist=gpu03
#SBATCH --gres=gpu:1
#SBATCH --cpus-per-task=4
#SBATCH --time=999:00:00


conda activate torch1.8
python main.py
```