Paper ID: 598

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Lengthening User Behavior Sequence for Listwise Contrastive Learning in Session-based Recommender Systems
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Overview

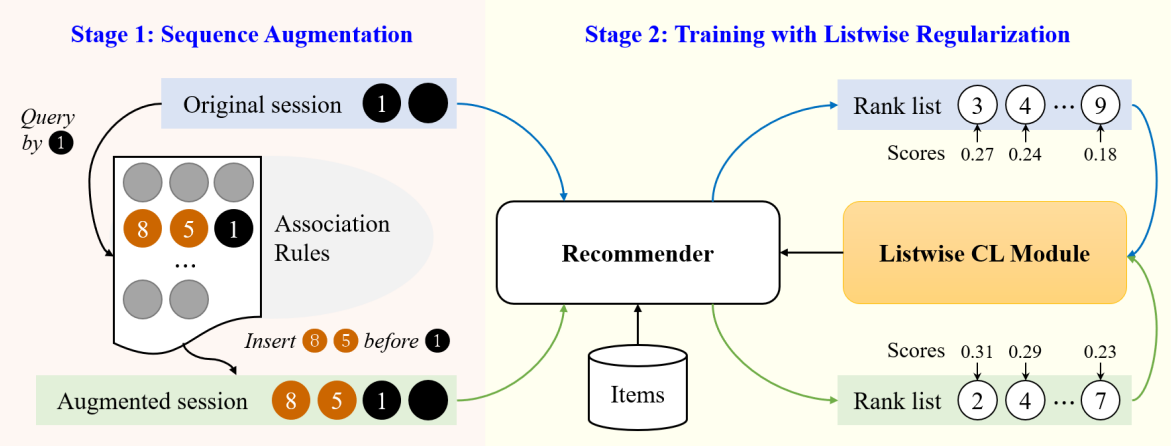

Figure | The framework of LCAA with any SBR model (i.e., recommender). In stage one, the start item in original session is used as query to retrieve correlated items from association rules, and the matched items are then inserted before the query item to create an augmented session. In stage two, the original and the augmented sessions are independently fed into a recommender to generate two rank lists of candidates, meanwhile a listwise Contrastive Learning (CL) module is activated to maximize the agreement between such two lists, functioning as regularization during the process of training recommender.

Requirements

```
python==3.7
pytorch==1.13.1
pytorch_lightning==1.2.6
cudatoolkit==10.1
```

Datasets

`DATASET` can be one of:

```
- Diginetica
- Nowplaying
- Tmall
```

Baselines

`MODEL` can be one of:

```
- NARM [Li et al., Neural attentive session-based recommendation, CIKM, 2017]
- STAMP [Liu et al., STAMP: short-term attention/memory priority model for
session-based recommendation, KDD, 2018]
- SRGNN [Wu et al., Session-based recommendation with graph neural networks,
AAAI, 2019]
- CORE [Hou et al., CORE: simple and effective session-based recommendation
within consistent representation space, SIGIR, 2022]
- AttMix [Zhang et al., Efficiently leveraging multi-level user intent for
session-based recommendation via atten-mixer network, WSDM, 2023]
```

Reproduction

```
python main.py --dataset DATASET --model MODEL
```

Due to file size limitations of the appendix, we can only provide pre-trained SRGNN+LCAA and test data of Diginetica in this repository. You can run the code provided above to validate the performance. More comprehensive code and datasets will be publicly available after the paper is accepted.