



AI Box



RecBole 2.0

More **Usable, Powerful, Up-to-Date**
Open-Source Library for Recommender System Research

Presenter: Yupeng Hou

Review for RecBole 1.0

- Open-source one-station library for RecSys research



☆ 2.1k stars

👁 41 watching

🔗 392 forks

Based on  PyTorch

80+ models, 28 processed datasets

- Covering CF, sequential, CTR, KG-based, ...
- Unified data processing & evaluation
- Highly efficient on GPU

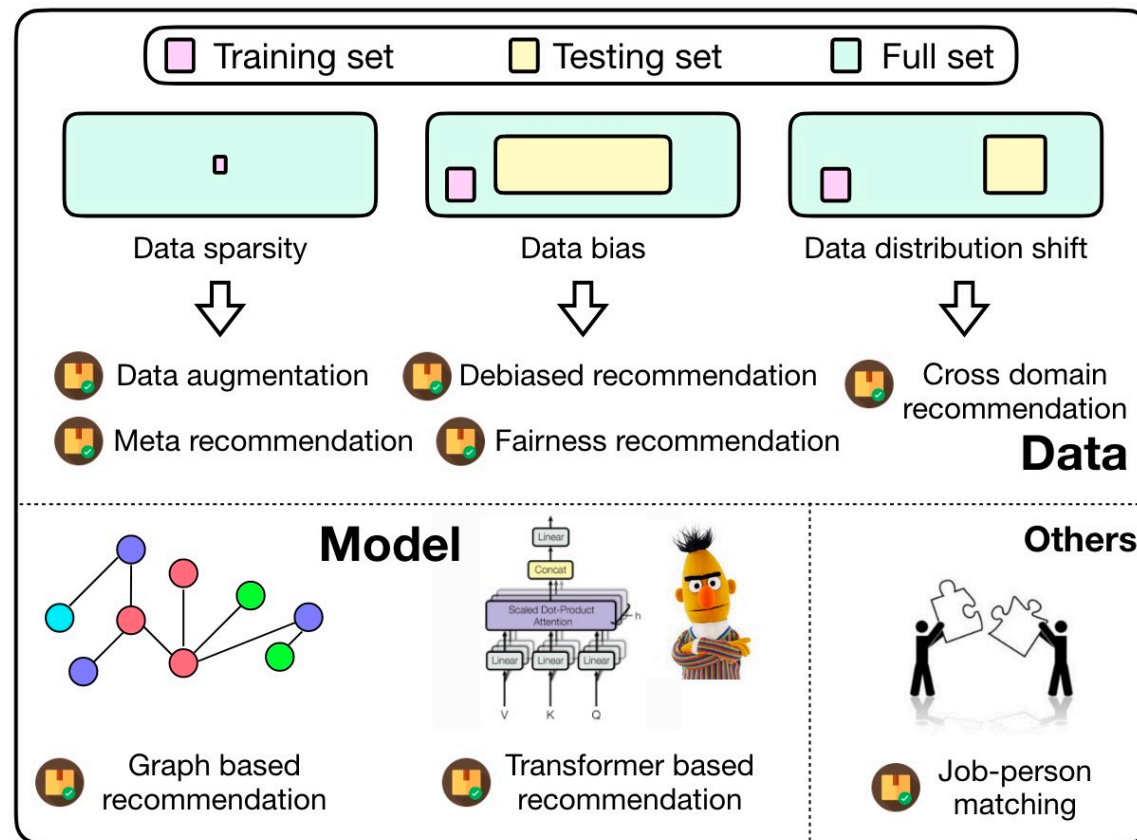
RecBole: Towards a unified, comprehensive and efficient framework for recommendation algorithms

WX Zhao, S Mu*, Y Hou*, Z Lin, Y Chen, X Pan, K Li, Y Lu, H Wang, ...
CIKM 2021, Resource Track

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What's new for RecBole 2.0

- 8 sub-modules for emergent & popular research directions;
- Additional 65 new models;



What's new for RecBole 2.0

- For **Data** sparsity, biases, distribution shift issues
 - *Meta-Learning* (RecBole-MetaRec)
 - *Data Augmentation* (RecBole-DA)
 - *Debias* (RecBole-Debias)
 - *Fairness* (RecBole-FairRec)
 - *Cross-Domain* (RecBole-CDR)
- For popular **Models**
 - *Graph Neural Networks* (RecBole-GNN)
 - *Transformers* (RecBole-TRM)
- For **Applications**
 - *Person-Job Fit* (RecBole-PJF)

What's new for RecBole 2.0

- Totally **130+** models covering **12** tasks in RecBole community

Module	Package	Models
Data	Data augmentation (RecBole-DA)	CL4SRec [75], DuoRec [54], MMInfoRe [53], CauseRec [84], CASR [64], CCL [3], CoSeRec [44]
	Meta recommendation (RecBole-MetaRec)	MeLU [37], MAMO [11], LWA [59], NLBA [59], TaNP [40], MetaEmb [49], MWUF [93]
	Debiased recommendation (RecBole-Debias)	MF-IPS [56], PDA [86], MACR [65], DICE [88], CausE [5], Rel-MF [55]
	Fairness recommendation (RecBole-FairRec)	FOCF [78], PFCN [39], FairGo [70], NFCF [30].
	Cross-domain recommendation (RecBole-CDR)	CMF [57], CLFM [17], DTCDR [90], DeepAPF [77], NATR [15], CoNet [27], BiTGCF [43], EMCDCR [45], SSCDR [33] and DCDCSR [91]
Model	Graph based recommendation (RecBole-GNN)	NGCF [62], LightGCN [22], SGL [69], HMLET [35], NCL [41], SimGCL [82], SR-GNN [74], GC-SAN [76], NISER [19], LESSR [9], TAGNN [79], GCE-GNN [63], SGNN-HN [50], DiffNet [72], MHCN [81], SEPT [80]
	Transformer based recommendation (RecBole-TRM)	TiSASRec [38], SSE-PT [71], LightSANs [13], gMLP [42], CORE [25], NRMS [68], NAML [66], NPA [67]
Others	Person-job fit (RecBole-PJF)	PJFNN [89], APJFNN [52], BPJFNN [52], IPJF [36], PJFFF [31], SHPJF [26], LFRR [47]

What's new for RecBole 2.0

- User-friendly and unified running scripts as RecBole

```
from recbole_da.quick_start import
run_recbole_da

aug_parameter={
    'aug_level': 'data',
    'aug_type': 'item_crop',
    'ratio': '0.3',
    'dataset': 'ml-100k'
}
run_recbole_da(model='SASRec',
config_dict=aug_parameter)
```

(a) Usage example of RecBole-DA

```
from recbole_debias.quick_start
import run_recbole_debias

run_recbole_debias(model='PDA',
dataset='yahoo')
```

(d) Usage example of RecBole-Debias

```
from recbole_metarec.MetaUtils import
metaQuickStart

modelName, datasetName = 'TaNP', 'ml-100k'
metaQuickStart(modelName, datasetName)
```

(b) Usage example of RecBole-MetaRec

```
from recbole_cdr.quick_start import
run_recbole_cdr

parameter_dict={
    'source_domain': {
        'dataset': 'ml-1m',
        'data_path': 'dataset/'},
    'target_domain': {
        'dataset': 'ml-100k',
        'data_path': 'dataset/target/',
        'user_inter_num_interval': '[5,inf)'},
    'train_epochs':
    ['SOURCE:300', 'TARGET:300', 'OVERLAP:300']}
run_recbole_cdr(model='EMCDR',
config_dict=parameter_dict)
```

(e) Usage example of RecBole-CDR

```
from recbole_fairrec.quick_start import
run_recbole_fairrec

run_recbole_fairrec(model='FOCF',
dataset='ml-1m')
```

(c) Usage example of RecBole-FairRec

```
from recbole_gnn.quick_start import
run_recbole_gnn

run_recbole_gnn(model='NCL',
dataset='ml-1m')
```

(f) Usage example of RecBole-GNN

```
from recbole_trm.quick_start import
run_recbole_trm

run_recbole_trm(model='TiSASRec',
dataset='ml-1m')
```

(g) Usage example of RecBole-TRM



- recbole.io
- github.com/RUCAIBox/RecBole2.0

Projects	Stars	Forks	Issues	Pull requests
RecBole	★ Stars 2k	🔗 Forks 382	🔴 Issues 393 closed	🔵 Pull requests 857 closed
RecBole2.0	★ Stars 65	🔗 Forks 4	🔴 Issues 0 closed	🔵 Pull requests 4 closed
RecBole-DA	★ Stars 5	🔗 Forks 0	🔴 Issues 0 closed	🔵 Pull requests 0 closed
RecBole-MetaRec	★ Stars 7	🔗 Forks 1	🔴 Issues 0 closed	🔵 Pull requests 0 closed
RecBole-Debias	★ Stars 9	🔗 Forks 1	🔴 Issues 0 closed	🔵 Pull requests 0 closed
RecBole-FairRec	★ Stars 8	🔗 Forks 2	🔴 Issues 0 closed	🔵 Pull requests 1 closed
RecBole-CDR	★ Stars 12	🔗 Forks 2	🔴 Issues 2 closed	🔵 Pull requests 31 closed
RecBole-GNN	★ Stars 57	🔗 Forks 13	🔴 Issues 6 closed	🔵 Pull requests 37 closed
RecBole-TRM	★ Stars 2	🔗 Forks 0	🔴 Issues 0 closed	🔵 Pull requests 0 closed
RecBole-PJF	★ Stars 6	🔗 Forks 1	🔴 Issues 0 closed	🔵 Pull requests 0 closed
RecSysDatasets	★ Stars 339	🔗 Forks 70	🔴 Issues 11 closed	🔵 Pull requests 87 closed

- Welcome for contributions 🥳 & stars 🌟

RecBole 2.0: Towards a More Up-to-Date Recommendation Library

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