Microsoft Recommenders
Tools to Accelerate Developing Recommender Systems
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Microsoft Recommenders repository is an open source collection of Python utilities and Jupyter notebooks to help accelerate the process of designing, evaluating, and deploying recommender systems. The repository is actively maintained and constantly being improved and extended. It is publicly available on GitHub and licensed through a permissive MIT license to promote widespread use of the tools.

Core components
- reco_utils
  - Dataset helpers and splitters
  - Ranking & rating metrics
  - Hyperparameter tuning helpers
  - Operationalization utilities
- notebooks
  - Spark ALS
  - Inhouse: SAR, Vowpal Wabbit, LightGBM, RLRMC, xDeepFM
  - Deep learning: NCF, Wide-Deep
  - Open source frameworks: Surprise, FastAI
- tests
  - Unit tests
  - Smoke & integration tests

Workflow
- Environment setup
- Data load
- Data split
- Train set
- Validation set
- Test set
- Recommender train
- Hyperparameter tune
- Evaluate
- Operationalize

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Example: Movie Recommendation Mobile App
Building real-time movie recommender system
- Backend: Flask web service logic / deployment files
- Data: Scripts for setting up the SQL database with MovieLens dataset
- App: Cross platform application (Xamarin.Forms)

Real-time movie recommender system with less than 100 lines of code
- SAR model training script
- Model deployment to Kubernetes

Model training experiment

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Call for collaborations - The repository maintainers encourage data scientists and developers to contribute their own algorithm implementations, tools, and best practices to continuously improve the content and quality of tools available to the recommender community. https://github.com/Microsoft/Recommenders