



Implemented Methods

Rating Prediction

- averages: global, user, item
- linear baseline method by Koren and Bell
- frequency-weighted Slope One
- k-nearest neighbor (kNN):
 - based on user or item similarities, with different similarity measures
 - collaborative or attribute-/content-based
- (biased) matrix factorization; factor-wise/SGD training; optimized for RMSE or MAE

Item Prediction

- random
- most popular item
- linear content-based model optimized for BPR (BPR-Linear)
- support-vector machine using item attributes
- k-nearest neighbor (kNN):
 - based on user or item similarities
 - collaborative or attribute-/content-based
- weighted regularized matrix factorization (WR-MF)
- matrix factorization optimized for Bayesian Personalized Ranking (BPR-MF)



Download

Get the latest release of MyMediaLite here:

<http://isml1.de/mymedialite>

Contact

We are always happy about feedback (suggestions, bug reports, patches, etc.). To contact us, send an e-mail to

mymedialite@isml1.de

Follow us on Twitter: @mymedialite

Acknowledgements

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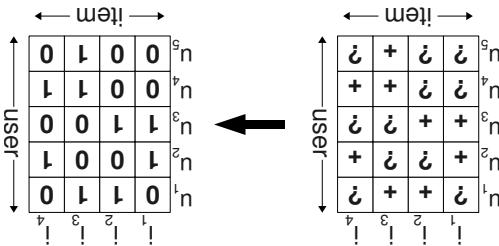
MyMediaLite – Recommender System Algorithm Library



Machine Learning Lab

MyMediaLite is a lightweight, multi-purpose library of recommender system algorithms. It addresses the two most common scenarios in collaborative filtering: **rating prediction** (e.g. on a scale of 1 to 5 stars) and **item prediction from implicit feedback** (e.g. from clicks or purchase actions).

<http://isml1.de/mymedialite>



Getting ratings from users requires explicit actions from their side. Much more data is available in the form of implicit feedback, e.g. whether a user has viewed or purchased a product in an online shop. Very often this information is positive, i.e. we know users like the products they buy, but we cannot easily assume that they do not like everything they have not (yet) bought.

Implicit Feedback Item Recommendation

	Alice	Ben	Christine
The Usual Suspects	5	4	4
American Beauty	3	4	3
The Godfather	3	4	3
Road Trip	2	??	1

Given a set of ratings, e.g. on a scale from 1 to 5, the goal is predict unknown ratings. Popularized by systems like MovieLens, Netflix, or Jester, this is the most-discussed collaborative filtering task in the recommendation systems literature. Given a set of ratings, e.g. on a scale from 1 to 5, the goal is predict unknown ratings.

Rating Prediction

Recommendation Tasks Addressed



- Use MyMediaLite as a basis for your school projects.
- Demonstrate/see how recommender system methods are implemented.
- Use MyMediaLite as a basis for you school projects.

Educators and Students

- Add recommender system technologies to your software or website.

Developers

- Use MyMediaLite's infrastructure as an easy starting point to implement your own methods.
- Use MyMediaLite's recommender systems as a simple text-based input format;
- Add recommender system technologies to your software or website.

Researchers

- Use the MyMediaLite recommenders as baseline methods in benchmarks.
- Use the MyMediaLite recommenders as baseline methods if you actually want to study other aspects of recommendation systems!
- Don't waste your time implementing methods if you actually want to study other aspects of recommendation systems!

Target Groups

- Dynamic Personalization of Multimedia

Freedom: free/open source software (GPL).

Real-time incremental updates for most recommended models.

SerIALIZATION: save and reload recommender processor systems.

Parallel Processing on multi-core/multi-processor systems.

Portability: Written in C#, for the .NET platform; runs on every architecture where Mono works: Linux, Windows, Mac OS X.

COMPACTNESS: Core library is less than 200 KB "big".

TOOLS: complete documentation of the library and its tools.

PREDICTION: usable from C#, Python, Ruby, F#, etc., based on simple text-

COMMAND LINE TOOLS: command line tools that read a simple text-based input format;

IMPLEMENTATION: includes evaluation routines for rating and item

ACCESSIBILITY: national data.

METHODS: dozens of different recommendation methods,

COLLABORATION: methods can use collaborative, content, or re-

CHOICE: choice of different recommendation methods,

MYMEDIALITE'S KEY FEATURES

- Dynamic Personalization of Multimedia

