Implemented Methods

Rating Prediction

- averages: global, user, item
- linear baseline method by Koren and Bell
- k-Nearest Neighbor (kNN):
  - based on user or item similarities
  - using collaborative or attribute (content) data
  - different similarity measures
- (Biased) matrix factorization

Item Prediction

- Random
- Most Popular Item
- Linear Content-based Model Optimized for Bayesian Personalized Ranking (BPR-Linear)
- Singular Value Decomposition (SVD)
- k-Nearest Neighbor (kNN):
  - based on user or item similarities
  - using collaborative or attribute (content) data
- Weighted Regularized Matrix Factorization (WR-MF)
- Matrix Factorization Optimized for Bayesian Personalized Ranking (BPR-MF)

Download

Get the code here:

`http://gitorious.org/mymedialite`

Contact

We would like to get feedback (suggestions, bug reports, etc.) about MyMediaLite. To contact us, send an e-mail to

`mymedialite@ismll.de`

Acknowledgements

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SEVENTH FRAMEWORK PROGRAMME

MyMediaLite – Recommender System Algorithm Library

Universität Hildesheim

Machine Learning Lab

Pre-release at ACM RecSys in Barcelona

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://gitorious.org/mymedialite`

MyMediaLite's Key Features

- **Choice:**
  - Dozens of different recommender engines (see list on this flyer),
  - methods can use collaborative and attribute/content data,
- support for **on-line updates** to most models.
- **Ready to use:**
  - Includes evaluation routines for rating and item prediction; quality measures MAE, RMSE, AUC, prec@N, NDCG; and
  - command line tools that read a simple text-based input format.
- **Compactness:** Core library is 82KB "big".
- **Portability:** Written in C#, for the .NET platform; runs on every architecture where Mono works: Linux, Windows, Mac OS X.
- **Freedom:** Free/Open Source software, distributed under the terms of the GNU General Public License (GPL).

Target Groups

Researchers

- Don't waste your time implementing methods if you actually want to study other aspects of recommender systems!
- Use the engines as baseline methods in benchmarks.
- Use MyMediaLite's infrastructure as an easy starting point to implement your own methods.

Developers

- Add recommender system technologies to your software.

Students

- See how typical recommender system methods are implement.
- Use MyMediaLite as a basis for you school projects.

Recommendation Tasks Addressed

Rating Prediction

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

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

Item Recommendation from Implicit Feedback

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-only, 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.