
Recommender systems R recommenderlab Package

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4 September 2015 at 16:43

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<https://cran.r-project.org/web/packages/recommenderlab/vignettes/recommenderlab.pdf>

1. Content-based approaches
 - a. Genre, director, write, cast, storyline, etc
2. Collaborative filtering (recommenderlab)
 - a. Top-N lists of recommended items
 - b. Memory-based (user-based) CF algorithm (less scalability)
 - i. User with similar preferences will rate items similarly.
 - ii. Missing ratings for a user can be predicted by first finding a neighbourhood.
 - iii. Pearson correlation coefficient and Cosine similarity.
 - c. Model-based (item-based) CF algorithm (cluster users of similar preferences)
 - i. Users will prefer items that are similar to other items they like.
 - ii. Item to item similarities
 - iii. Pearson correlation coefficient and Cosine similarity
3. 1-0 Class
 - a. All missing ratings are negative examples or assume all missing ratings are unknown.
 - b. Jaccard index
 - c. Association Rules (Matching rules and recommend N unique right-hand-sides of the matching rules)
4. Slope One algorithm. (Advanced)
5. Latent factors approach using matrix decomposition. (Advanced)
6. Evaluation
 - a. Splitting, Bootstrap sampling, K-fold cross-validation
 - b. MAE, RMSE, E-measure, F-measure, Precision, Recall
7. Recommenderlab
 - a. `ratingMatrix()` – `realRatingMatrix`, `binaryRatingMatrix`
 - b. `Recommender()`
 - c. `Predict(object, newdata, n, type=c('topNList','ratings'))`
 - d. `recommenderRegistry$get_entries()`
 - e. `evaluationScheme(data, method, train, k, given)`

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 **recommenderlab.R**
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