

Recommender systems

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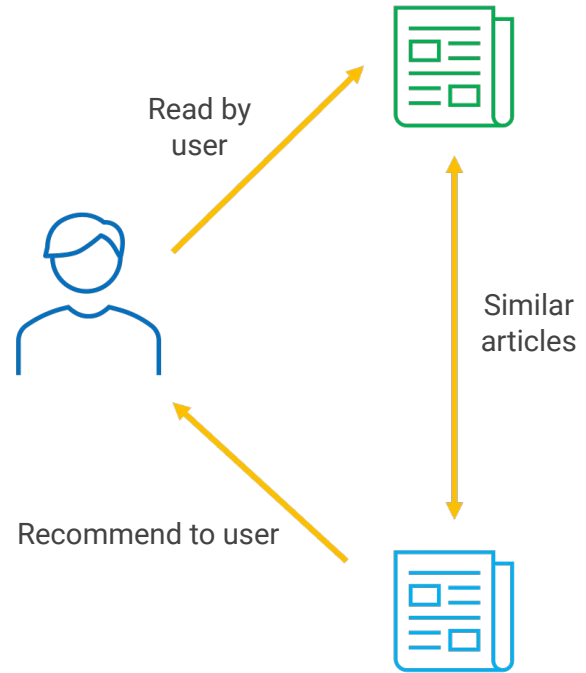
Weekly reflection

- Memory based collaborative filtering
 - [Amazon.com Recommendations: Item-to-Item Collaborative Filtering](#) - Greg Linden, Brent Smith, and Jeremy York - Amazon
- Watch time in Youtube
 - [YouTube Now: Why We Focus on Watch Time](#) - Google Inc
- Ranking & scoring
 - [How Reddit ranking algorithms work](#) - medium
 - [How Hacker News ranking really works: scoring, controversy, and penalties](#)
 - [How Not To Sort By Average Rating](#) - Evan Miller

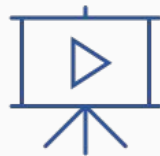
What are the different types of recommender systems?

Content-Based

Recommend items that are similar to what the user likes.



Item features / attributes



Actors, director, genre,
tags, description, etc.



Category, tags, text, etc.



Genre, artist, etc.

Model items according to relevant attributes

- For each item, create a profile using its relevant attributes.
- A profile is a descriptor that contains a set of features about the item.

Model the user preferences using his previous ratings

Use the items the user previously rated to infer his preferences (profile).

How to compute the user ratings for the new items?

Predict the user's interest in items

1. Compute similarity between the user profile and the items profile using a similarity measure.
2. Recommend items that are most similar to the user profile.

Practical work

Advantages and disadvantages

→ Able to recommend to users with unique tastes.

→ No item cold-start problem.

→ Interpretable.

→ Finding the appropriate features is hard.

→ Never recommends item's outside of the user's known interests.

→ User cold-start problem.

