

Collaborative Filtering

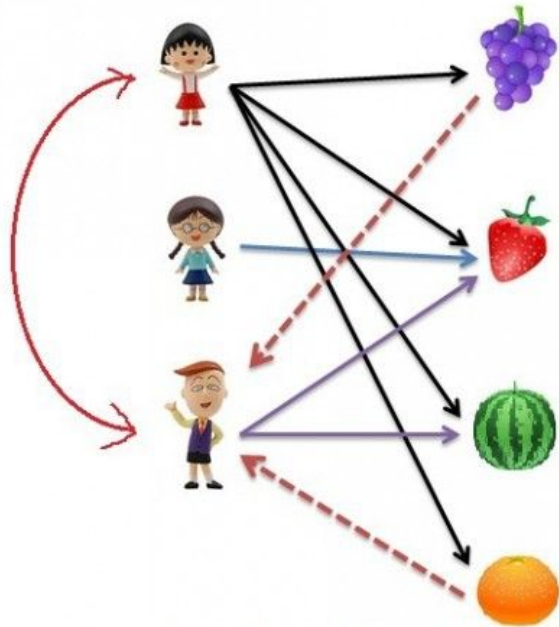
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Collaborative Filtering

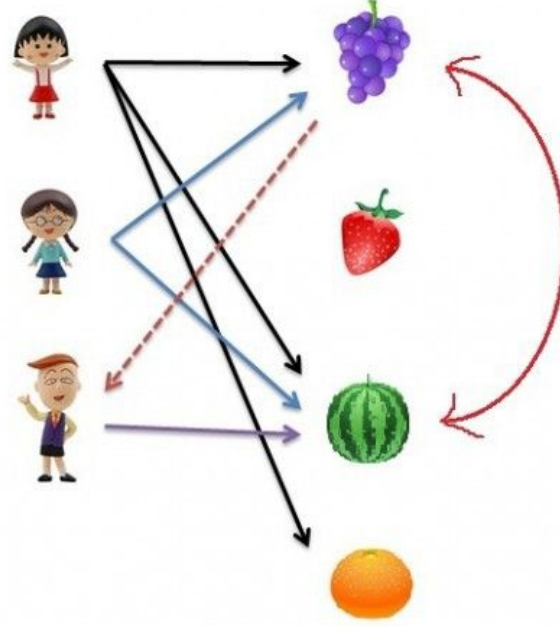
Two large groups of collaborative filtering are:

- User-user collaborative filtering
 - Find similar users, recommend what these similar users like that you haven't seen yet
- Item-item collaborative filtering
 - Find similar items, when a user likes one of the bunch

Collaborative Filtering



User-based filtering



Item-based filtering

Collaborative Filtering

- There are lots of ways to implement collaborative filtering in practice.
- Ultimately the best method is dependent on your situation, and you should prove that it's the best via A/B testing in practice.
- The high level ideas are as simple as what is illustrated in the previous slide - with no reason to overcomplicate any further

Collaborative Filtering

Pros

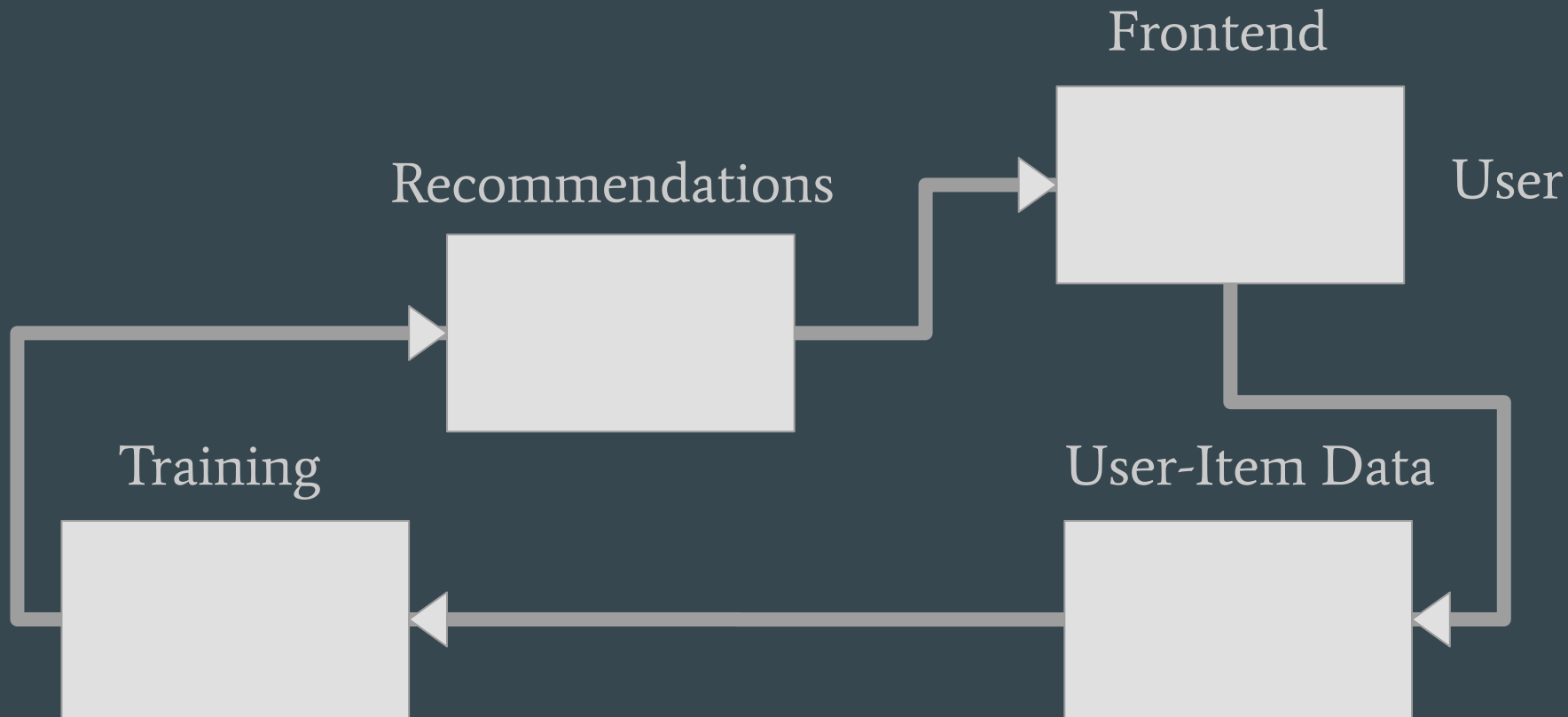
- Good recommendations
- Easy to understand
- No item/user info needed
- Minimal feature engineering

Cons

- Can have scaling issues
- Doesn't account for time
- Can't help cold start problem

Getting Started With Your Recommendation System

Simplified Production Pipeline



Getting Started

- Start simple:
 - Getting the tools involved with this pipeline to work together may highly complicate the process of recommender systems in practice
 - Start with making sure all the connections work with some simple set of predictions (one option: best items predicted to everyone)
 - Create a baseline of how well this technique works in practice
 - Build a method for measuring metrics of interest and comparing across recommender systems (testing - more in the next section)
 - Finally, you can iterate with collaborative filtering and other recommendation methods

Recap

- There are two major versions of collaborative filtering:
 - User-user
 - Item-item
- There are pros and cons to this method, but it tends to work well in practice.
- Start simple with building your recommendation system and iterate. Lots of pieces about productionalizing your recommender will complicate the process - so start simple.
- Make a system for A/B testing, so you can know if your method for making recommendations is truly improving the business metrics you care about