



# Recommender Systems

# Recommender system

- Subclass of information filtering systems
- Seeks to predict the rating/preference a user would give an item

# Recommender system examples

- Advertisements
- Movies
- Videos
- Articles
- Music
- People
- Search results
- Photographs
- Accounts to follow
- ...

# Building a recommender system

- Not trivial
- Has its own challenges

# Item-Based Collaborative Filtering



# It starts with data

- Implicit data
- Explicit data



# Implicit data

- Understand users through click-data or stream-data
- Prone to frauds

# Implicit data

- **Amazon has so much that they don't need better algorithms**
  - Even simple algorithms work well when you have a huge amount of data



# Explicit data

- Collected with feedback, survey or ratings
- Not everyone will fill these out



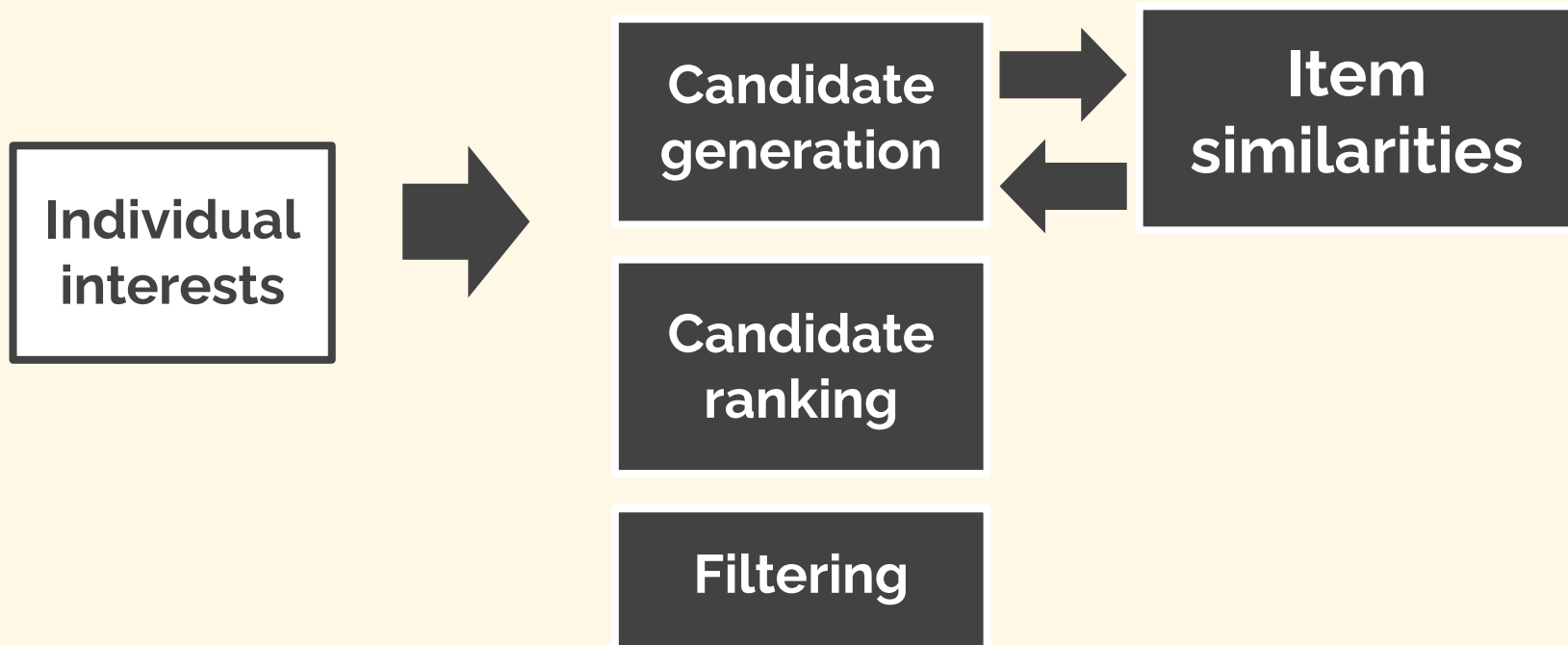
# What do you need for a good result?

- Recommenders can't make good predictions unless they have a lot of good data to work with

# Recommender System = Top N Recommender System

- Gives user N number of recommendations

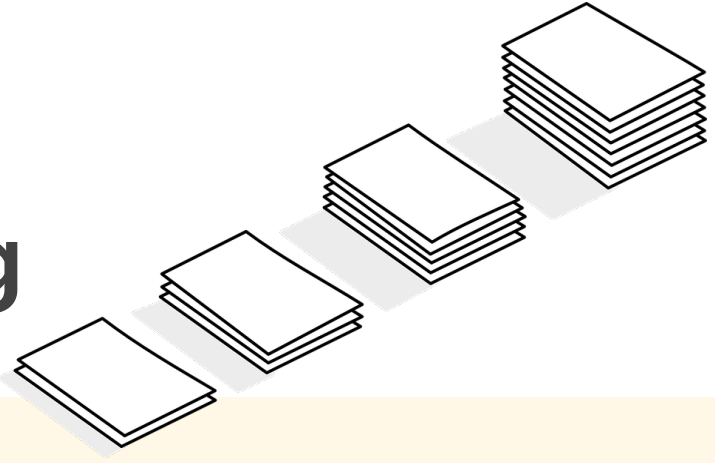
# Architecture Example - Top N



# 1. Candidate Generation

- If a current user watches a movie, recommendations are generated with the help of actual historical data of other people who watched movies

## 2. Candidate Ranking



- Recommended items are ranked (if an item comes more than once in our recommendations) and sorted

### 3. Filtering

- Already appeared recommendations and offensive ones are removed
- Shortlisted to N number of items





# Recommender Systems ✓