

## Book Recommendation

Recommender Systems are useful in a lot of areas → YouTube, Netflix, Spotify, Facebook, Twitter, Amazon, and ...

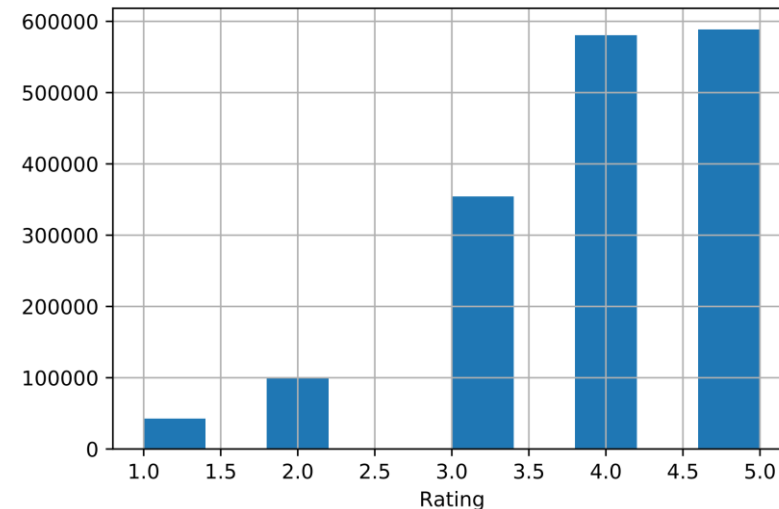
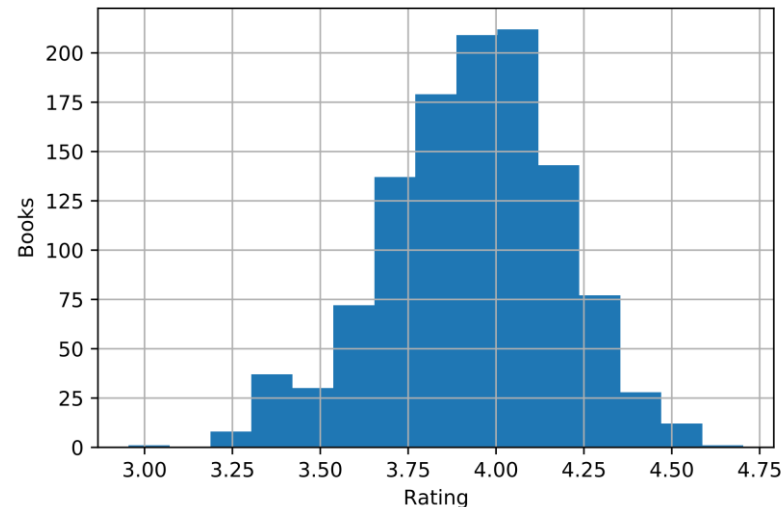
Two main techniques are:

- 1- Collaborative filtering (user-based)
- and
- 2- Content-based filtering

Data sources:

- 1- User ratings on Kaggle → 10K books, ~53K users and ~6M ratings
- and
- 2- Data scraped from websites (~30K books) → look for “summaries” of the books

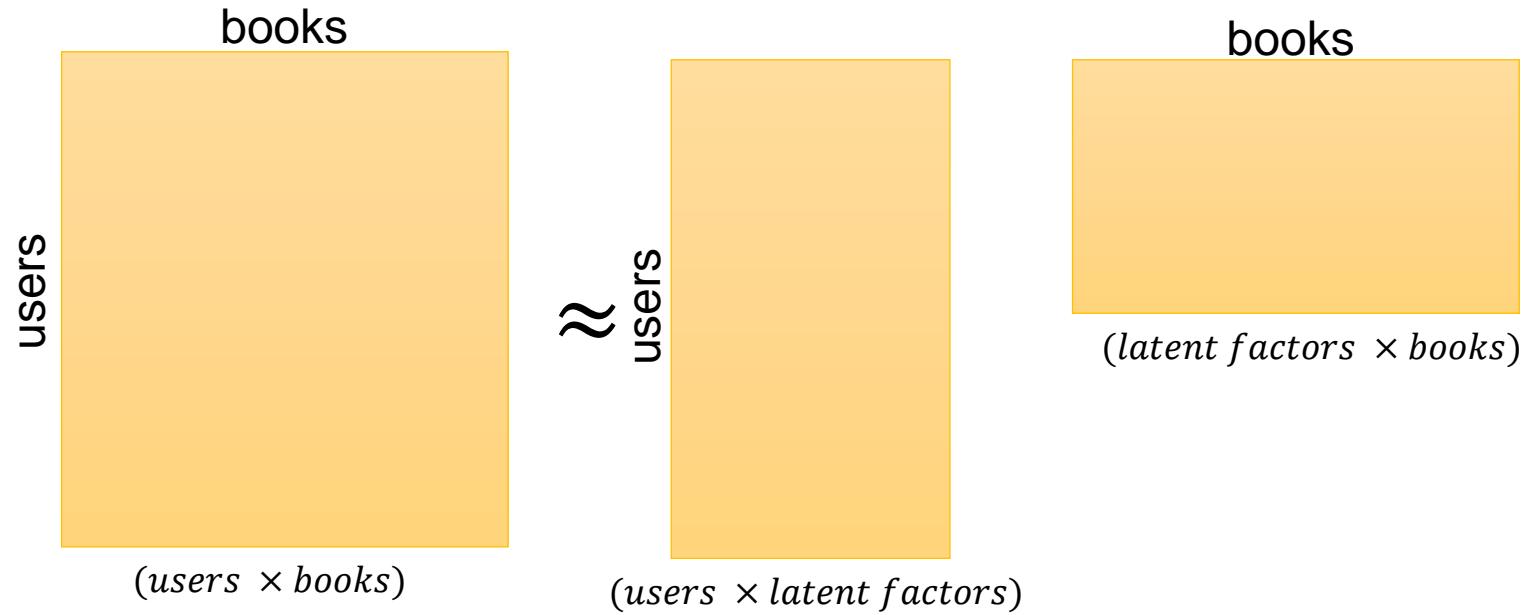
Combining the two data sources, we end up with  $\sim 1500$  books and  $\sim 1.6M$  ratings:



# Book Recommendation

## 1- Collaborative filtering (user-based)

Matrix factorization based methods:



## 2- Content-based filtering

Vectorize the summaries using “tf-idf” (term frequency-inverse document frequency) → find similar summaries

# Book Lovers

**You enjoyed "the hunger games", you might also like:**

1. "Catching fire" by: stephenie meyer [Book summary](#)

about three things i was absolutely positive.first, edward was a vampire.second, there was a part of him—and i didn't know how dominant that part might be—that thirsted for my blood.and third, i was unconditionally and irrevocably in love with him.in the first book of the twilight saga, internationally bestselling author stephenie meyer introduces bella swan and edward cullen, a pair of star-crossed lovers whose forbidden relationship ripens against the backdrop of small-town suspicion and a mysterious coven of vampires. this is a love story with bite.

2. "Mockingjay" by: veronica roth [Book summary](#)

3. "Divergent" by: suzanne collins [Book summary](#)

4. "The twelve" by: suzanne collins [Book summary](#)

5. "The winter sea" by: j.k. rowling, mary grandpré [Book summary](#)

6. "Twilight" by: dan brown [Book summary](#)

7. "The host" by: stephenie meyer [Book summary](#)

8. "Harry potter and the deathly hallows" by: justin cronin [Book summary](#)

9. "The da vinci code" by: lloyd alexander [Book summary](#)

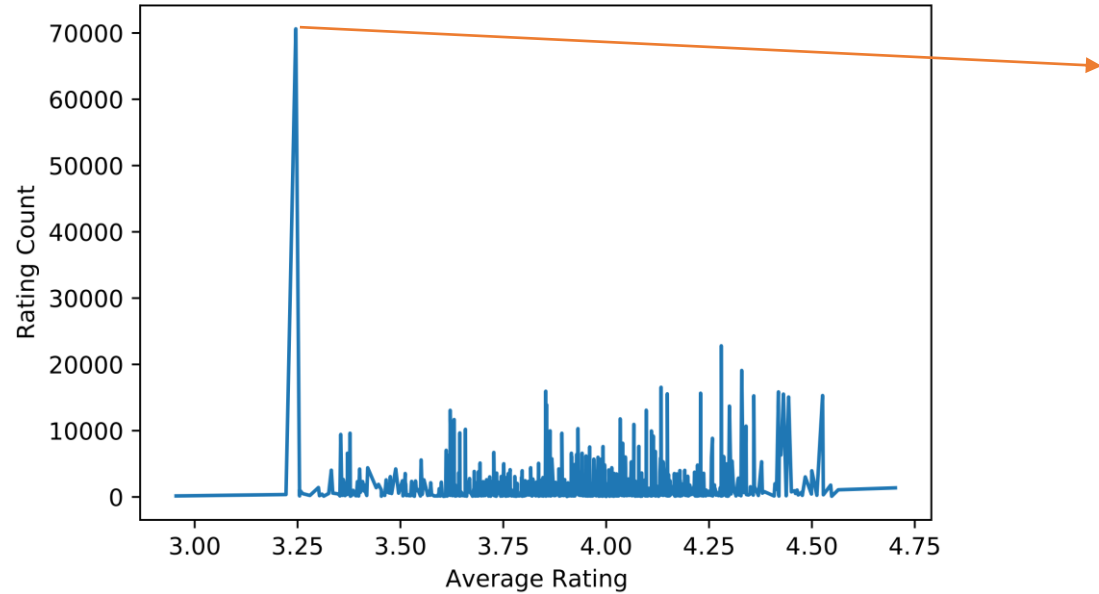
10. "The book of three" by: susanna kearsley, rosalynd landor [Book summary](#)

**Please enter a book you enjoyed:**

Enter

**Most popular books:**

# Book Recommendation



“Twilight” has the maximum number of ratings, but the average rating is very low for this book.

	AverageRating	RatingCount
BookTitle		
words of radiance	4.702840	1373
queen of shadows	4.564007	1078
gemina	4.548077	104
the way of kings	4.545556	1789
a song of ice and fire	4.527778	324
harry potter and the deathly hallows	4.525941	15304
fool's quest	4.512000	250
the name of the wind	4.499747	3948
mistborn trilogy boxed set	4.498861	439
the wise man's fear	4.483807	3026

	AverageRating	RatingCount
BookTitle		
twilight	3.245738	70628
the hunger games	4.279707	22806
to kill a mockingbird	4.329369	19088
catching fire	4.133422	16549
mockingjay	3.853131	15953
harry potter and the prisoner of azkaban	4.418732	15855
harry potter and the chamber of secrets	4.229418	15657
the hobbit or there and back again	4.148477	15558
harry potter and the goblet of fire	4.430780	15523
harry potter and the deathly hallows	4.525941	15304

# Book Recommendation

## Improvements:

- Collect more data: we can still find summaries of ~8000 more books
- Add another component to the recommender engine: collect movies and TV shows data that are based on the books
- Explore other algorithms for the recommendation process