Improvements on Goodreads Recommendations

- Using NLP and Unsupervised Learning

Katharina Huang 2017/06/02





Rate this book





by Leigh Bardugo (Goodreads Author)

Browse *

*** 15,529 Reviews

Community ▼

Search books

Criminal prodigy Kaz Brekker has been offered wealth beyond his wildest dreams. But to claim it, he'll have to pull off a seemingly impossible heist:

Break into the notorious Ice Court (a military stronghold that has never been breached)

Retrieve a hostage (who could unleash magical havoc on the world)

Survive long enough to collect his reward (and spend it)

Kaz needs a crew desp ...more

Hardcover, 462 pages

Published September 29th 2015 by Henry Holt and Company

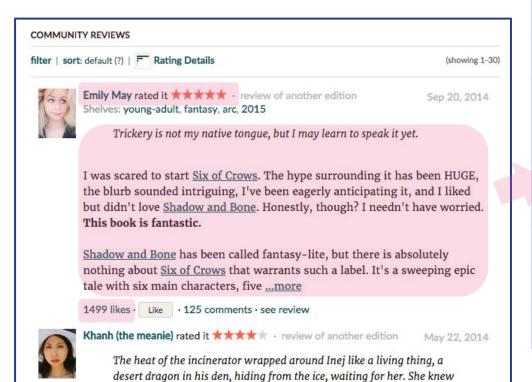
Original Title Six of Crows

ISBN 1627792120 (ISBN13: 9781627792127)

Edition Language English

LIRI http://www.grishatrilogy.com/six-of-crows/

N of books	937 (Training 788)
Genre	Alternate history
Stemming	Lancaster Stemmer
Token count	TF-IDF
ngram	1, 2
Exclusion	English stop words
(Min, Max) doc freq	(5, 50%)
Normalize	L2
Platform	MacBook Pro



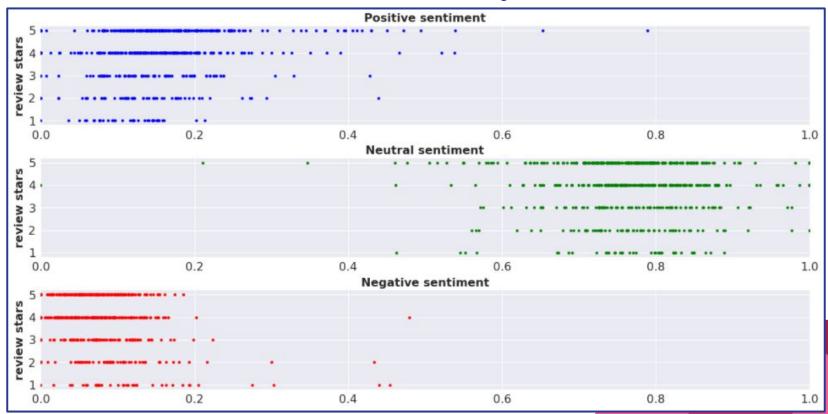
her body's limits, and she knew she had no more to give. She'd made a

N of reviews	21278 (Training 19216)
Genre	Alternate history
Stemming	Lancaster Stemmer
Token count	TF-IDF
ngram	1, 2
Exclusion	English stop words, non-English words
(Min, Max) doc freq	(10, 50%)
Normalize	L2
Platform	AWS EC2 c3.8xlarge

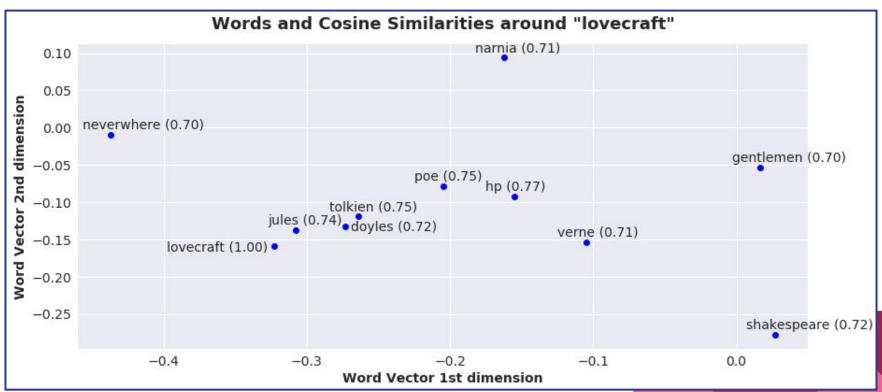
Recommender using reader star ratings



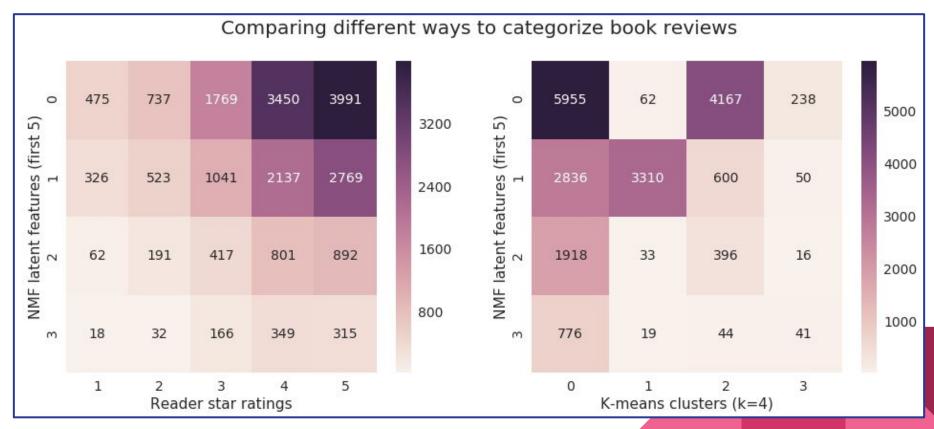
Reader review sentiment analysis



Content-based Filtering with Word2Vec



Improving genre clustering



Improving genre clustering

K-Means cluster	Top words and books	
0	hist, fun, rachel, harry, di, moor, laur, alex, thursday, jan	
	The Golem and the Jinni, The Giver (638 books)	
1	thi book, did, sery, read thi, lov , auth, felt, thi sery, enjoy , review	
	A Conspiracy of Kings, And I Darken, The Winner's Crime (18 books)	
2	lik, ev, real, just, mor, ther, becaus, story , tim, peopl	
	The Book Thief, The Handmaid's Tale, The Golden Compass (86 books)	
3	la, en, el, es, lo, se, las, par, en el, la la	
	NA (0 books)	

Improving genre clustering

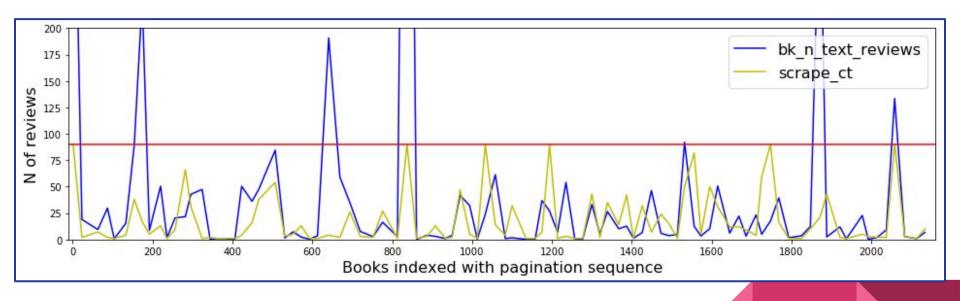
K-Means cluster	Top words and books	Potential topic names
0	hist, fun, rachel, harry, di, moor, laur, alex, thursday, jan	Classic fiction for the general population
	The Golem and the Jinni, The Giver (638 books)	
1	thi book, did, sery, read thi, lov , auth, felt, thi sery, enjoy , review	Sequel fans
	A Conspiracy of Kings, And I Darken, The Winner's Crime (18 books)	
2	lik, ev, real, just, mor, ther, becaus, story , tim, peopl	Good storylines with TV/movie adaptation
	The Book Thief, The Handmaid's Tale, The Golden Compass (86 books)	
3	la, en, el, es, lo, se, las, par, en el, la la	Probably foreign language reviews
	NA (0 books)	

Future Work

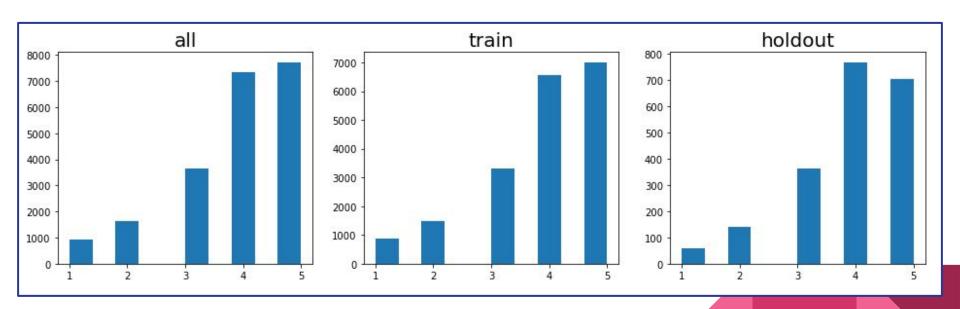
Tensor factorization (e.g. higher-order SVD) for collaborative-filtering

Q & A

Appendix. Scraped data over time



Appendix. Most reviewers scored high



Appendix. Reader review PCA latent features

