

Introduction to Artificial Intelligence

Book Recommender System

Group 2

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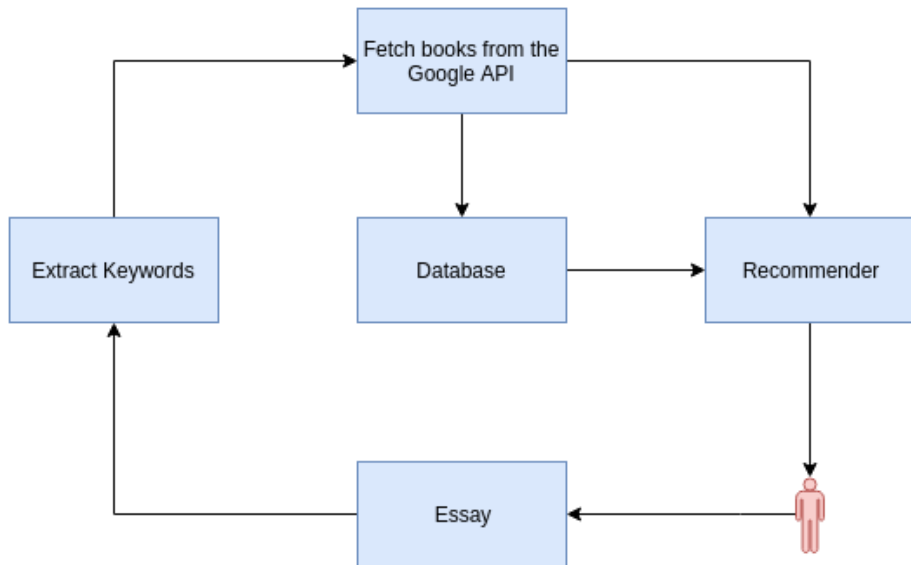
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Outline

- 1 Introduction
- 2 System Design
 - Extracting Keywords
 - Fetching books
 - Collaborative Filtering
- 3 Product
- 4 Limitations
- 5 Future Scope

- I have an idea and I don't know what to write further
- The answer is BLOCKBUSTER the idea

System Design



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Extracting Keywords

System Design

Use RAKE:

- 1 Get a list of stopwords, phrase delimiters and word delimiters.
- 2 Partition the document into candidate keywords where the stop words and delimiters act as a partition of the document (forms a sequence of content words)
- 3 Evaluate each candidate based on 3 metrics(word frequency, word degree and their ration) and receive the final keywords.
- 4 Add the content words containing interior stop words from previous list
- 5 Select one third of all the content words having the highest score as keyword.

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Fetching Books

System Design

- ① Limits the number of requests to the Google servers
- ② A workaround to make the system scalable is to use caching
- ③ 'Memcached' can be used

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Collaborative Filtering

System Design

Recommendations need to be based on:

- 1 Topic of the active essay
- 2 The essay or work that is most relevant to the user and he wants to pursue immediately
- 3 The books must reflect the topics that are related to the topic of the essay and are not about the essay

Possible models:

- 1 User-User CF
- 2 Item-Item CF

Book Finder

Idea

Dear Residents of Halls of Residence,

The electricity amount for duration of Autumn semester 2016-17(on Ad hoc basis) that you need to pay at registration time of Winter semester 2016-17 is as follows.

Kindly go through the following points carefully and comply with the same:

- * The payment of electricity bill at the time of registration would be on an Ad hoc basis - For the Men's HoR it is Rs.1800/- (rupees one thousand eight hundred only)per person and for the Ladies HoR Rs. 1000/- (rupees one thousand only)per person

★ Get Books

Atharvaveda

Maurice Bloomfield

Not available

Blockbuster

Hello admin

Book suggestions

Logout

Recommendations for admin

(u'Recovering the Lost Tongue',)

NA

(u'Rahul Banerjee',)

NA

(Not available',)

NA

- ① Scalability of Filtering method - A solution to this is to use item-item collaborative filtering. In this if two items tend to have the same users like and dislike them, then they are similar and users are expected to have similar preferences for similar items. A list is maintained of the top similar books for any given books, and when a user rates a given book then the ratings for only those top similar books are estimated and recommended.
- ② Cold start - A collaborative filtering recommendation is effective only when we have existing user data. To recover from this we can use a hybrid filtering approach.

- 1 Predict on certain level what the writer is mostly going to need (in future) on the basis of how he/she is proceeding and recommend books according to that.
- 2 Make the recommendation of book real time thus the list of book recommended to the writer would change as he/she writes instead of current model where the recommender will pull the essay AFTER the writer is finished and then recommend books to him/her.

- 1 Stuart Rose, Dave Engel, Nick Cramer and Wendy Cowley.
Automatic keyword extraction from individual document
- 2 Michael D. Ekstrand, John T. Reidel, Joseph A. Konstan.
Collaborative Filtering Recommender Systems