Wikipedia

Wikipedia (/wɪkɪˈpiːdiə/ 🕪 listen) wik-ih-PEE-dee-ə or /wɪki-/ 🕪 listen) wik-ee-) is a free, multilingual open-collaborative online encyclopedia

Wikipedia Recommender

Wikipedia has been criti Assimple recommendation system between Wikipedia articles discrete

- ^{2 Openness} Colin Salama

 - 2.3 Vandalism NAME

March 1st, 2021

DATE





Goal

Data

3. Method

Wikipedia

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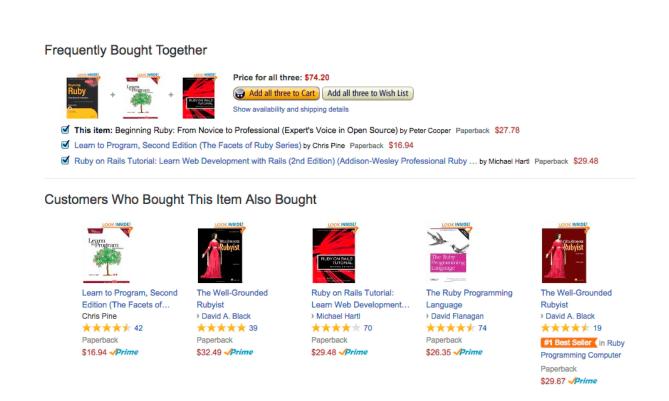
4. StreamlithAppale. [8] In 2006, Time magazine stated that the open-door policy of allowing anyone to edit had made Wikipedia the "biggest and perhaps the best encyclopedia in the world", and a testament to the vision of Jimmy Wales. [9] The project's reputation improved further in 5. Next Steps

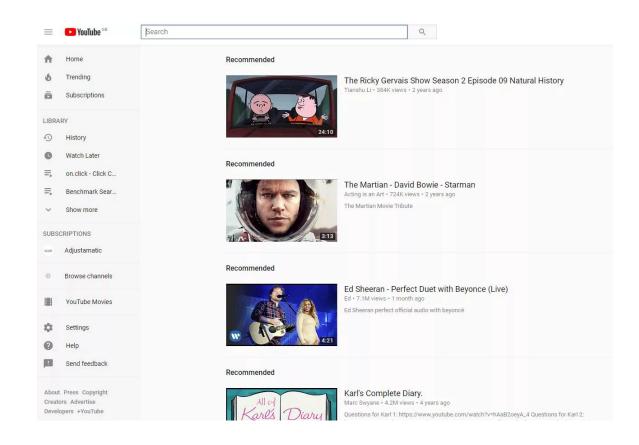


Goal

The main goal of this project is to build a simple recommendation system for Wikipedia articles using NLP.

Recommendation systems are important for maximizing interaction with website and generally would improve the Wikipedia experience.





RECOMMENDED VIDEOS

How Public
Universities Became
So Expensive



 Facebook Builds Out in NYC, Betting on In-Person Future



China's New Tactic to Prevent the Spread of Covid-19? Cash and Gifts



SpaceX's Starship Test Flight Ends in Explosion, Again



5. Dozens of Boeing 777 Jets Grounded After Engine Failure





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Wikipedia

From Wikipedia, the free encyclopedia

This article is about Wikipedia. For Wikipedia's home page, see Main Page. For the English edition, see English Wikipedia. For other uses, see Wikipedia (disambiguation).

Wikipedia (/wɪkɪˈpiːdiə/ 📢 listen) wik-ih-PEE-dee-ə or / wɪki-/ (🛊 listen) wik-ee-) is a free, multilingual open-collaborative online encyclopedia created and maintained by a community of volunteer contributors using a wiki-based editing system. Wikipedia is the largest general reference work on the Internet, and one of the 15 most popular websites as ranked by Alexa; in 2021, it was ranked as the 13th most visited. [4][note 3] The project carries no advertisements and is hosted by the Wikimedia Foundation, an American non-profit organization funded mainly through donations, 80% of which are small donations from individual users. [6]

Wikipedia was launched on January 15, 2001, by Jimmy Wales and Larry Sanger; its name was coined as a portmanteau of "wiki" and "encyclopedia". Initially available only in English, versions in other languages were quickly developed. The English Wikipedia, with 6.3 million articles as of March 2021, is the largest of the 319 language editions. Combined, Wikipedia's editions comprise more than 55 million articles, and attract more than 17 million edits and more than 1.7 billion unique visitors per month. [7]

Wikipedia has been criticized for its uneven accuracy and for exhibiting systemic bias, particularly gender bias, with the majority of editors being male. [8] In 2006, Time magazine stated that the open-door policy of allowing anyone to edit had made Wikipedia the "biggest and perhaps the best encyclopedia in the world", and a testament to the vision of Jimmy Wales. [9] The project's reputation improved further in the 2010s, as it received praise for its unique structure, culture, and absence of commercial bias. [3][8] In 2018, Facebook and YouTube announced that they would help users detect fake news by suggesting links to related Wikipedia articles.[10]

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Wikipedia



Data



WikipediA

The Free Encyclopedia

WIKIPEDIA DATA

Only the English Wikipedia is considered for this project, including over 7 million articles. The text alone of these articles is ~15 GB compressed and ~58 GB uncompressed. It is all available for download on Wikipedia.

CLEANING THE DATA

An XML parser, Gensim's Wikipedia filtering function, and Gensim's preprocessor are used to clean the data into a usable format.

Additionally, only the introduction of Wikipedia articles is used in order to reduce the amount of data.

MULTIPROCESSING

Multiprocessing is used on partitioned Wiki files to reduce the estimated time for cleaning and tokenization from ~20 hours to ~3 hours. Then the tokens and article titles are aggregated into individual lists.



Method

- Gensim's Corpus/Dictionary format was used to examine this data, and the Corpus was streamed directly from memory due to prevent RAM overload.
- This Corpus was converted to a TF-IDF Corpus with basic term frequency, inverse document collection frequency, and cosine length normalization.
- Then the Gensim docsim Similarity Matrix is built from the TF-IDF Corpus and queried in order to find the N most similar articles by cosine similarity.

Wikipedia Recommender

Enter a Wikipedia article:

Brush Mountain East Wilderness

Your recommended articles are as follows:

- -Garden Mountain Wilderness
- -Beartown Wilderness
- -Rich Hole Wilderness
- -Ramsey's Draft Wilderness
- -Category:Wilderness Areas of New Hampshire

Streamlit App

We **query our similarity matrix** through our document title to ID dictionary, and this returns the top 5 similar documents excluding the article itself.



Future Work

OTHER RECOMMENDATION SYSTEMS

Cosine distance and TF-IDF vectors were used to simplify the recommender due to the 7+ million documents. The next goal here is to implement LDA and Word2Vec recommenders as well.

SPEED UP RECOMMENDATION

Storing the top several recommendation systems into memory rather than querying the Similarity matrix would speed up the process.