
Reducing Echo Chambers Through an Anti- Recommendation System



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Recommendation systems are forcing us into echo chambers

Echo chambers are dangerous
- we must try to break free of
our online bubbles

David Robert Grimes



Across the political spectrum we must all work harder to analyse our sources of information and our biases. The consequences of not doing so are dire

Mon 4 Dec 2017 06.27 EST

Source: [The Guardian](#)

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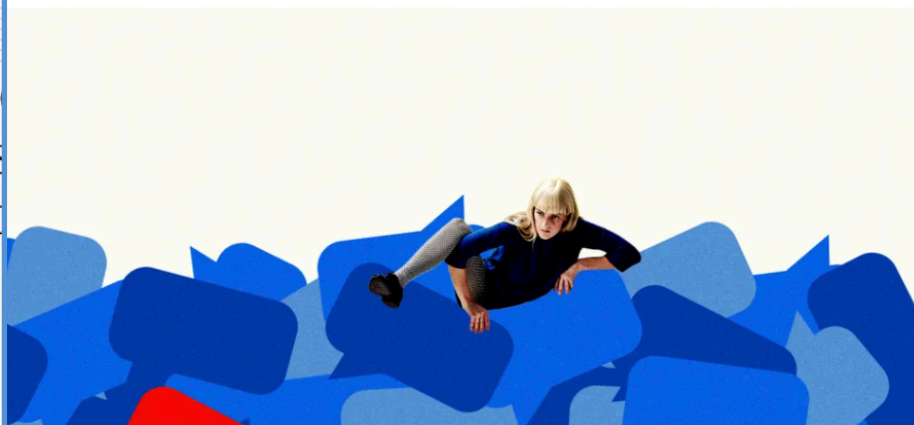
How Some Americans Are Breaking Out of Political Echo Chambers

A growing number of people are seeking a wider diversity of news sources or opinions contrary to their own to combat information silos within social media.



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dire

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Source: [Wired](#)

Goal:

**Create an anti-
recommendation system**

Process for anti-recommendation system

Data Acquisition & Cleaning



NLP Model

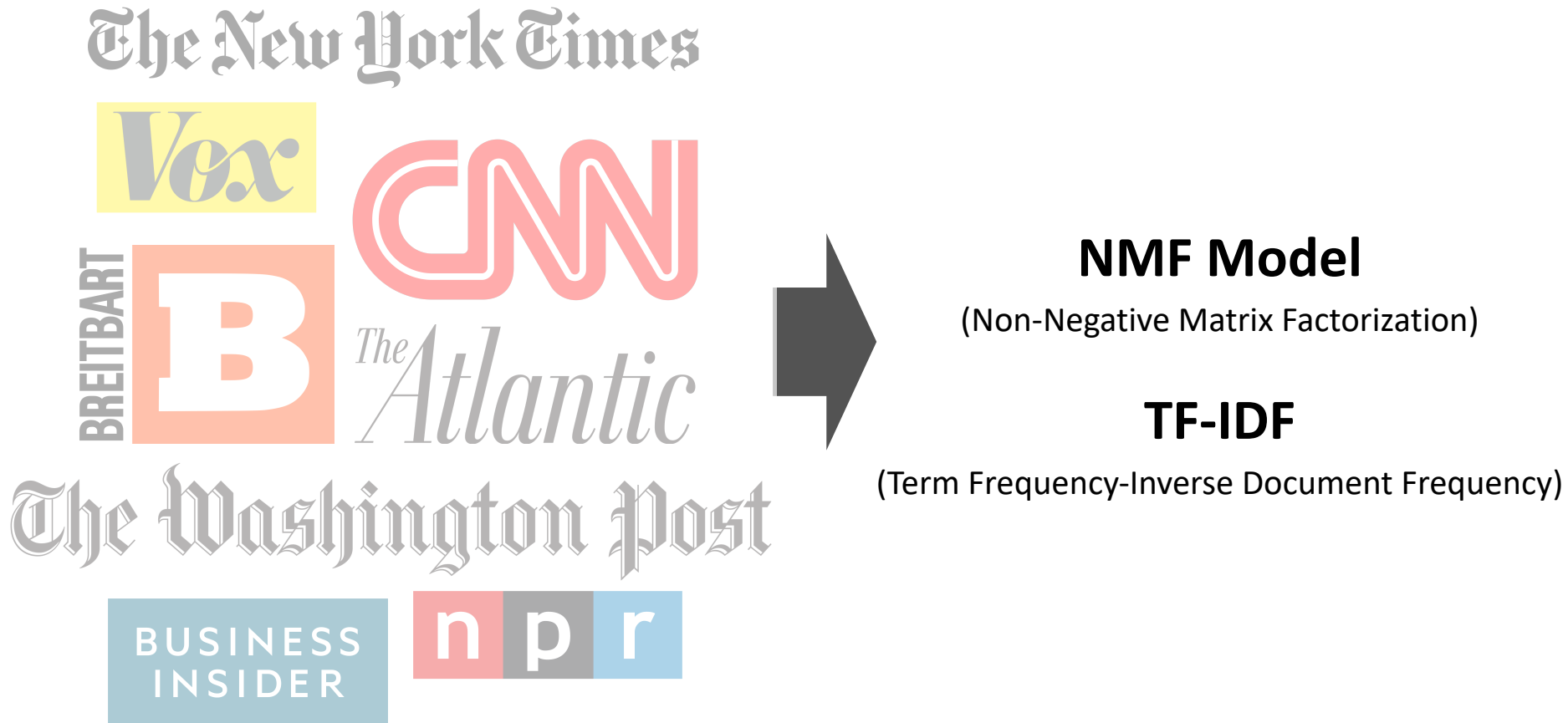


Sentiment Analysis



Web App

Initially leveraged 200,000 articles in a publicly available SQL database



Recommender preformed well for highly reported news events

News Article Anti-Recommender System

As the information access becomes increasingly online, 'echo chambers' have emerged as a growing concern. Often folks tend to consume and interact primarily with similar information. This can lead to heavily one-sided understandings of social issues. The following tool was designed to help people find content outside of their typically recommended content.

Submit an article title to see article titles within the same topic from different perspectives.

Input article title here:

Clinton, Sanders Face Off in Democratic Debate

Find Articles

Both recommendations
were presidential
candidates

Recommended Articles

Article 1: If this keeps up, Trump won't have to do anything to punish China's economy

Article 2: CNN: Tea Party Patriots Warn Against Priebus for Chief of Staff - Breitbart

News recommendations were limited to 2008-2018

News Article Anti-Recommender System

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Input article title here:

Worried About Breakthrough COVID Cases? Here's What To Know

Find Articles

Published in
2016 & 2017



Recommended Articles

Article 1: Portland, Oregon, spent \$250,000 to reinvent the public toilet — and it worked

Article 2: Can the Democratic Party Win Back Voters It Lost to Trump?

Often struggled to connect to anything similar

News Article Anti-Recommender System

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Input article title here:

Blizzard employees walk out over company's handling of discrimination, sexual harassme

Find Articles

The inputted article topic was workplace discrimination and both outputs were political pieces.

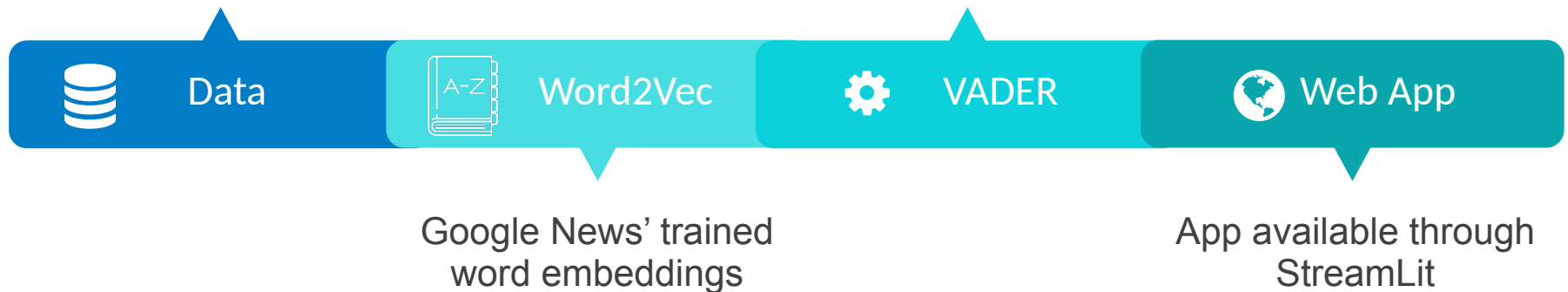
Recommended Articles

Article 1: Pompe drug lauded by Trump costs \$300,000 a year

Article 2: Former CIA chief in Benghazi challenges the story line of the new movie "13 Hours"

Updated data pipeline and NLP model

Fully connected pipeline
with NewsCatcher API &
Mongo DB



Demo of final web application

- Recommended articles are tagged if opinion
- Articles are from within the last few months
- Article links, summaries, and authors are included in the recommendation

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Input article title here:

The U.S. Climate Envoy Went To Moscow And Talked About More Than Climate

Find Articles

Check-out there articles!

Article 1

[Prize-winning activist warns world has 'no time to lose'](#) by None

Article Summary: Kimiko Hirata, winner of the 2021 Goldman Environmental Prize (Photo by Toru Ishii)

News Article Anti-Recommender System

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Submit an article title to see article titles within the same topic from different perspectives.

Input article title here:

US-bound Haitian, Cuban, African migrants overwhelm Necoclí, Colombia

Find Articles

Check-out there articles!

Article 1

[Trump Slams Critical Race Theory in Schools: '1776 Not 1619'](#) by Katherine Hamilton

Article Summary: A topic heavily weighed and discussed during the Conservative Political Action Conference (CPAC) was Critical Race Theory (CRT) — what it is and how to fight it.

Former President Donald Trump during his final speech at CPAC condemned the ideology and warned of indoctrination in schools. He specifically slammed New York Times writer and recent tenured Howard University hire Nikole Hannah-Jones.

'We will completely defund and bar Critical Race Theory — 1776 not 1619,' Trump said, referring to Jo

Article 2

Conclusions

- Utilizing current news sources increases the interpretability of recommendations
- Additional context around the recommendation helps make the articles more user friendly
- Future opportunities may include increasing the model processing speed and add CRON jobs to automate the fully connected pipeline

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