

# Tech Demo: AJAR Application

*Academic Journal Article Recommender*

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*General Assembly - DSI*

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# Introduction - Academic Literature Searching

Academic papers are the standard for sharing findings among the scientific community

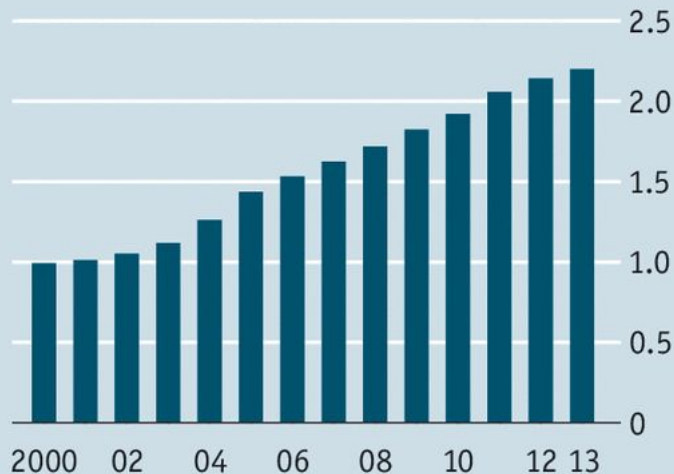
However, taking time each week to browse through multiple journals can take many hours away from study or experiments



# Introduction - Academic Literature Searching

## Publication pile-up

Science and engineering articles published annually worldwide, m



Source: National Science Foundation

Economist.com

Furthermore, the rate of publications is increasing each year

Estimates point to over 2 million articles published a year, across over 30,000 journals

**How can we help researchers effectively find relevant papers in a timely manner?**

# Introduction - AJAR Application



AJAR is a free online academic paper database that provides a number of services:

- An archive of nearly 20,000 recently published papers
- Personal accounts for researchers to save papers of interest
- Daily recommendations for new articles that match a user's saved papers

# AJAR Methodology: Data Source

A background image for the section header showing a hand holding a pen over a notepad, with the text 'Springer Nature API Portal' overlaid in white.

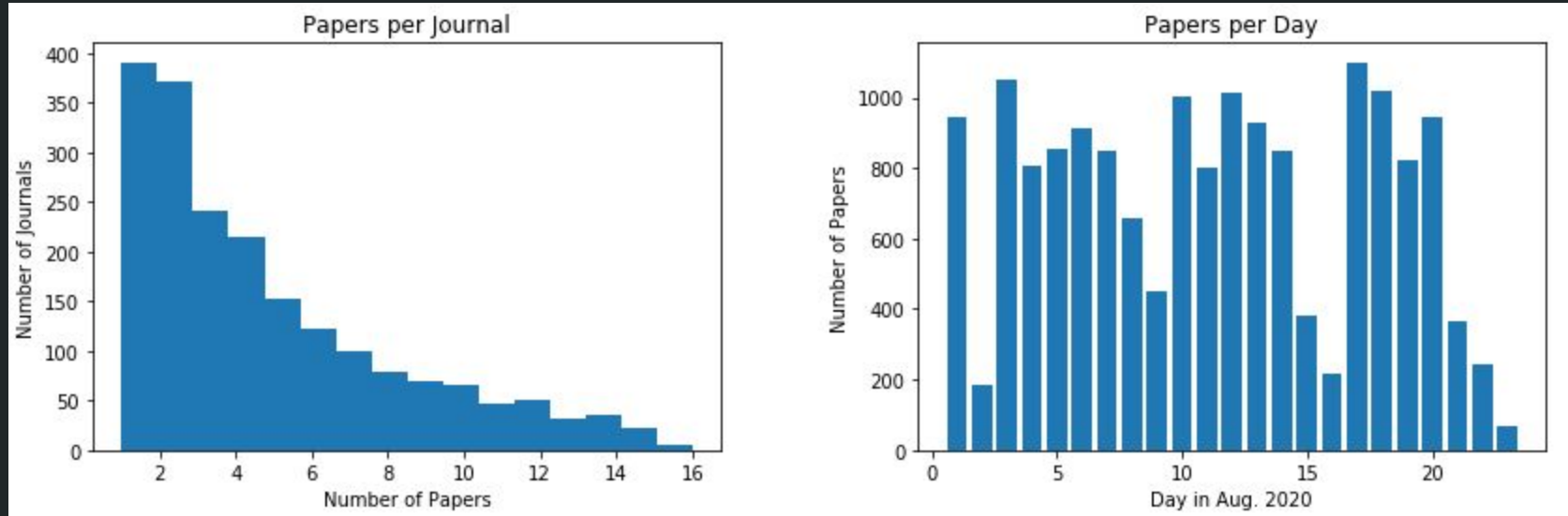
## Springer Nature API Portal

Articles are collated each day using the Springer API (<https://dev.springernature.com/>)

Data processing involves:

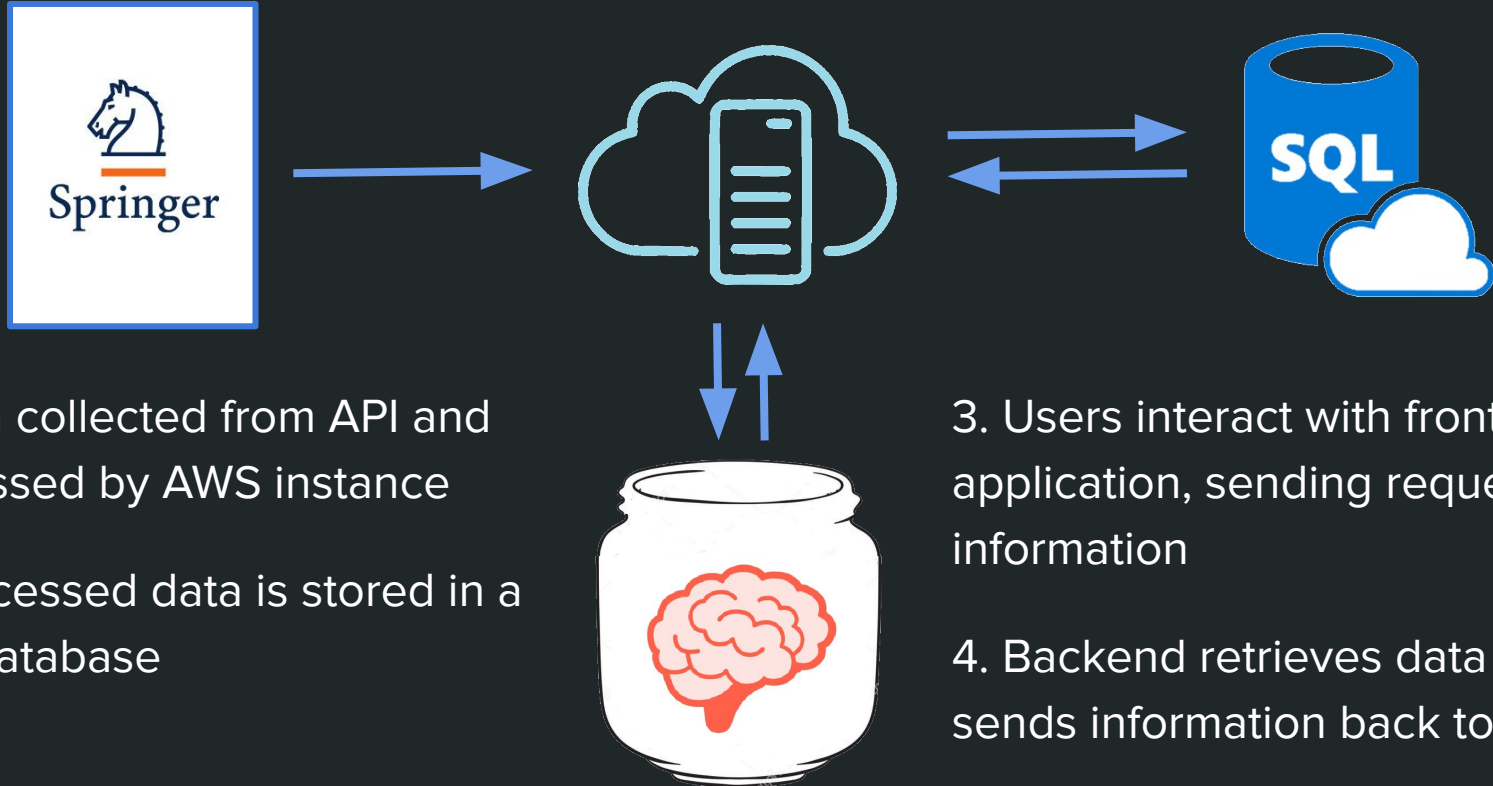
- Removing non-English articles
- Removing redactions/reprints/corrections
- Removing entries with incomplete information

# AJAR Methodology: Data Source

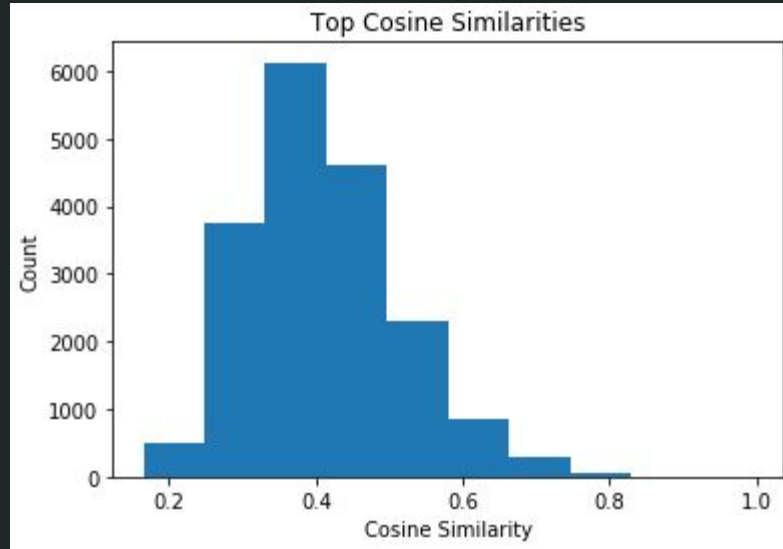


Database information for articles pulled for the month of August

# AJAR Methodology: Process Diagram



# AJAR Methodology: Recommender



Language features created using a Tfidf Vectorizer applied to the abstracts for each paper

Cosine similarity is calculated to determine best matches between favorited papers and papers published each day

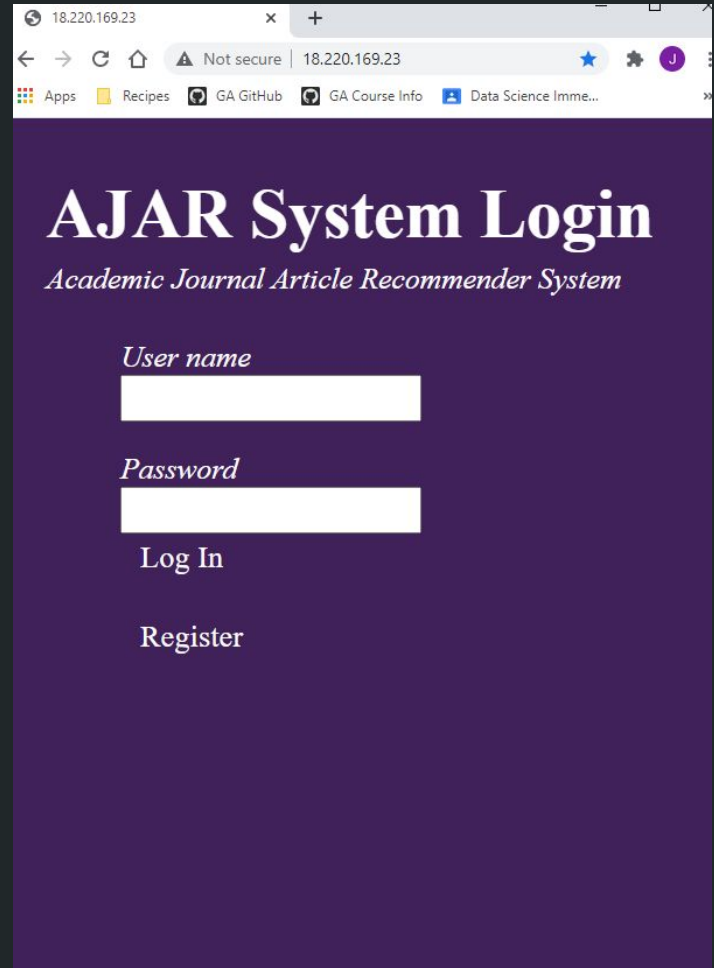


# AJAR Demonstration

AJAR can be found online at the ip address

18.220.169.23

Please feel free to explore the app on your own machine during the demonstration



The screenshot shows a web browser window with the address bar displaying '18.220.169.23'. The page has a dark purple background. At the top, the title 'AJAR System Login' is written in a large, white, serif font, with the subtitle 'Academic Journal Article Recommender System' in a smaller, italicized, white, serif font below it. The login form consists of two white input fields: the first is labeled 'User name' and the second is labeled 'Password'. Below the password field are two buttons: 'Log In' and 'Register', both in a white, sans-serif font.

18.220.169.23

Not secure | 18.220.169.23

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## AJAR System Login

*Academic Journal Article Recommender System*

*User name*

*Password*

Log In

Register

# Conclusions and Next Steps

AJAR is a tool to help researchers across all disciplines spend more time doing research, while still effectively keeping abreast of advances in their fields. While a fully effective application in its current form, there are still several possible avenues for improvement:

- More sophisticated recommendations (feature engineering, BERT)
- Incorporating additional sources of data beyond Springer
- Metadata analysis (author tracking, for example)

Through your support, we can continue to build this platform to assist in academic pursuits in labs across the world

Questions?

Thanks for listening!