Navigating the New Era: The Impact of Generative AI on Information Discovery and Literacy

Presenters:
Leo S. Lo, University of New Mexico
Emily Singley, Elsevier, Inc.
Elias Tzoc, Clemson University
The Gen AI Revolution in Information Discovery

• A Brief History and Development of Search

• Pros and Cons of Gen AI

• Looking Ahead
AI-powered tool subscription

Elias Tzoc
Associate Dean for Teaching, Learning and Research
Clemson University Libraries

scite_
Information overload/abundance

1. Exponential growth of information over the last 2-3 decades
2. Digital revolution and the emergence of online databases/journals
3. OA has increased access to the literature
4. How do we know what to trust?
5. The lack of FAIRness is an obstacle
Gen AI tools for discovery/research

1. Dozens of AI tools available
2. Libraries and campus wide subscriptions
3. Assessment and trials (faculty and students)
4. Working with campus partners
What have we done?

1. Created an AI group
2. Arranged demos and trials
3. Recommended a one-year subscription
4. Created a research guide (3,300+ views)
5. Co-sponsored an AI Conference (OTEI)
6. Co-authored a conference report
7. Continue to support/advocate for AI awareness
A smart citation index that displays the context of citations and classifies their intent using DL.

It is used by students and researchers from around the world ... initially funded in part by the NSF and NIH ... was acquired by Research Solutions in November 2023.

Find if research has been supported or contrasted.
ChatGPT is outdated, and doesn’t care about real references

Assistant by scite does, by:

- **Augmenting** language models by searching for *new* information in our system
- **Adding guardrails** for claims by language models to ensure they’re grounded in real research.
- **Giving you observability** into the search strategies used, and why references are being recommended.

Backed by our unique database of Smart Citations.

- cataloged over **1.8 billion** references made between articles
- indexed over **1.2 billion** citation statements from full-text articles

**Assistant:**
The Power of Language Models, Backed by Real, Up to Date Research.
Welcome to scite!

In order to get the most out of scite, we encourage you to:

- Try scite Assistant, a ChatGPT for research with answers from scientific literature
- Install our free browser extension to see Smart Citations wherever you read research
- Take a tour of the scite report page to see what was said about a paper’s claims
- Use our unique Citation Statement Search to find expert insights from research papers
- Complete your profile
scite users & top 5 majors/departments

Undergrads
- Psychology, BA
- Construction Science and Management, BS
- Parks, Recreation and Tourism Management, BS
- Computer Science, BA
- Automotive Engineering, Baccalaureate Certificate

Grads
- Teaching and Learning, MEd
- Human Centered Computing, PhD
- Business Administration, PhD
- Industrial/Organizational Psychology, PhD
- Wildlife and Fisheries Biology, PhD

Employees
- Management
- Plant & Environmental Sciences
- Teaching & Learning
- Psychology
- Parks Recreation & Tourism Management
scite user engagement

- **Report Views**
  - Trial: 319
  - Fall: 937
  - Spring: 2066

- **Searches**
  - Fall: 620
  - Spring: 1297
  - Fall: 2044

- **Assistant Queries**
  - Trial: 120
  - Fall: 2108

- **User Sessions**
  - Fall: 948
  - Spring: 1569
  - Fall: 1870

- **Users**
  - Fall: 94
  - Spring: 270
  - Fall: 473

**Dates:**
- **Trial:** June 20 - July 20
- **Fall:** December 15
- **Spring:** March 15
Clemson University has 55,863 publications in the scite database. These publications have received 831,309 citation statements of which 33,227 indicate supporting evidence, 3,661 indicate contrasting evidence, and 778,701 are mentioning.

<table>
<thead>
<tr>
<th>Total Articles</th>
<th>Citation Types</th>
<th>Editorial Notices</th>
<th>2023 scite Index</th>
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<tr>
<td>56k</td>
<td>Supporting: 33,227</td>
<td>Retractions: 15</td>
<td>N/A</td>
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<tr>
<td></td>
<td>Mentioning: 778,701</td>
<td>Withdrawals: 4</td>
<td>5-year SI: N/A</td>
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<td></td>
<td>Contrasting: 3,661</td>
<td>Corrections: 101</td>
<td>2-year SI: N/A</td>
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<tr>
<td></td>
<td>Total: 831,309</td>
<td>Errata: 122</td>
<td>Lifetime SI: N/A</td>
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<tr>
<td>55,863 total publication(s)</td>
<td>Expression of Concern: 0</td>
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</table>
What have we learned and what’s next?

- Get faculty and students involved
- Schedule demos and training sessions
- Check for discipline coverage
- Check for accessibility requirements
- Document user engagement
- Continue to assess
GenAI in scholarly search
what we are learning from users

Emily Singley
VP, North American Library Relations, Elsevier

March 25, 2024
CNI Spring Meeting
One year ago - Exploration

Judson Dunham: "Literature research is clumsy and annoying: can we break the 3-words -> 10,000 papers paradigm?"

Questions not queries

Answers not articles

Passages not papers

Scannable, digestible, immediate, exact

Authored, edited, peer reviewed, curated

Verifiable, citable, linked to source documents
2024 – GenAI is here

• Scopus AI launched in January 2024
• Natural language searching
• Immediate summary generation
• Linking out to Scopus source documents
• Built with LLM, vector search, and custom prompt engineering
• RAG Fusion Technology – Retrieval-Augmented Generation

![Image]
We’ve been exploring utilizing GenAI to make finding, extracting, synthesizing and summarizing what researchers need from the literature more effective and less time consuming than it is today.

Experiment on 1k topic pages: Pre-generated questions & answers on a topic

- Example of Q&A:
  

- Example of Topic Page:
  
  https://www.sciencedirect.com/topics/computer-science/data-fusion

Experiment on 20k articles: Pre-generated questions & answers on the full-text article
Developing with the research community

- Alpha testing – access given to randomized group of users
- Beta testing – thousands of users responded to calls for UX testers (including on library listservs)
- Proactively approached both individual users and institutions
- Also leveraged findings from prior UX testing, focus groups

Validate user need
Understand researcher journey
Identify pain-points
Test new ideas

Scopus AI Beta preprint: functional analysis and cases
Eliruend Aguilera-Cota, Carlos Lopera, and Luis Corina
What we are learning from users
1) GenAI should live side-by-side with “classic” search
2) The paper still matters – a lot!

- Users want links to papers and references to be prominently displayed in the UI.
3) Users wanted to be able to surface influential / seminal authors

- Users asked whether we could identify influential authors and seminal works in response to their questions
- We experimented with highlighting seminal works and experts based on citation relationships
- The result was the addition of:
  - Foundational Documents
  - Topic Experts
4) Short summaries aren’t always enough

- Users expressed the need for longer, more in-depth summaries
- But they also liked the short summary for quick insights
- Kept the short summary as default, added an “expanded summary” dropdown option
Interested?

Contact Emily: e.singley@elsevier.com
What are the implications of these changes?

• Transforming Roles & Skill
  • AI Literacy and Competencies
  • Integrating Gen AI into Information Literacy

• ARL Library Leaders’ Views