



AI Misinformation Detection: An Active Learning Activity for the Information Literacy Classroom

Kevin J. Reagan & Wilhelmina Randtke

Presented at Teaching and Learning with AI, Orlando, FL, July 23, 2024.

Abstract

The ACRL Framework for Information Literacy in Higher Education—a curriculum for academic librarians—was a response to voluminous, unreliable information. Furthermore, existing lesson plans for teaching the ACRL Framework are transferable to teaching research and AI in a world where AI creates misinformation. By situating the ACRL Framework into the context of recent information literacy history, the authors will situate AI misinformation into a larger discourse and provide a hands-on approach to teaching students what hallucinations are, as well as how to ascertain a source’s reality and provenance.

Today's Learning Objectives

By the end of this session, participants should be able to:

- Replicate or adapt the presented lesson plan in the classroom
- Articulate how AI misinformation fits into the greater history of information literacy
- Express the challenges of AI misinformation to students

Session Outline

- I. Activity Context
- II. Learning activity
- III. AI Misinformation & the ACRL Framework
- IV. Q & A



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Some “Librarian” Terms

1. One-Shot Session
2. Information Literacy
3. ACRL Framework
4. Research consultation

Activity Context

- Walk-in research consultation
- Normalize AI disclosure
- Use after a typical one-shot session
- **Not** for advanced AI users

Activity Instructions

1. Groups receive a folder with citations
2. Two real citations; one fake citation
3. Ascertain which source is the fake.
4. Reveal suspect and show evidence of innocent suspect

Student Learning Objectives & Instructions

Learning Objectives:

- Recall how to find to find a journal article by author name, journal name, or article title.
- Discuss the limitations of using artificial intelligence to find scholarly sources

“Your librarian needs your help in cracking the case of the AI imposter. You have been given classified intel about the three citations in question, and it is your duty to conduct a thorough investigation to find the suspect. Be prepared to present how you ruled out your suspects and ascertained the imposter.”

See lesson on LibGuide:

https://georgiasouthern.libguides.com/ai_literacy

Let the Investigations Begin

Solve the case of the unsolved AI misinformation! Also, be prepared to discuss how you might adapt this activity in your classroom.

For digital dossiers, see

<https://georgiasouthern.libguides.com/c.php?g=1380906&p=10211384>

Limitations, Resources Student Reactions

- Limited experience with AI
- Exacerbating the digital divide?
- Students get into the investigator vibe
- Time: I typically do this when an instructor gives me two sessions with their classes

ACRL Framework: A response to online misinformation

The ACRL Framework was designed to address voluminous information and misinformation: “[T]he rapidly changing higher education environment, along with the dynamic and often uncertain information ecosystem in which all of us work and live, require new attention to be focused on foundational ideas about that ecosystem.” (ACRL, 2016, 7).



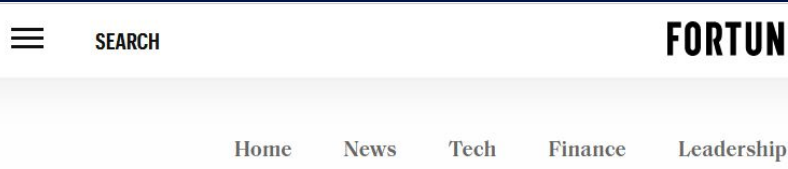
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AI and the Information Ecosystem



Image by Dr. Lasse Rempe, from
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Today: Online misinformation and AI

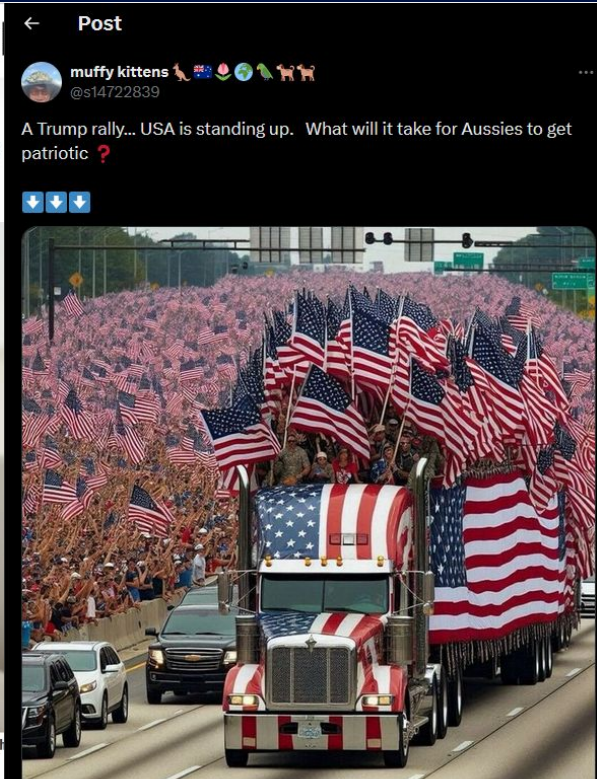


TECH · GOOGLE
‘It’s the worst quality results on Google I’ve seen in my 14-year career’: Web search exec breaks down how ‘SEO parasites’ and AI-enabled spam are breaking the internet

BY PAOLO CONFINO
January 18, 2024 at 2:35 PM EST



Is Google search
GETTY IMAGES



Today: Misinformation from Chatbots

Misinformation can come by someone directly interacting with a generative AI, or by finding misinformation online.

Home > News > The Why Axis

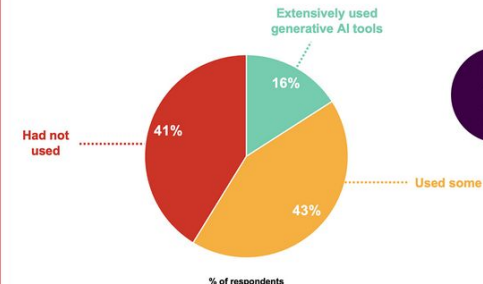
When Will ChatGPT Replace Search? Maybe Sooner Than You Think

A recent Aberdeen Strategy & Research survey asked how you think you'll find internet-based information in the future: AI chatbots beat search engines by a wide margin.



By [Peter Tsai](#) April 12, 2023 [f](#) [X](#) [G+](#) [...](#)

Which AI Tools Are in Use?



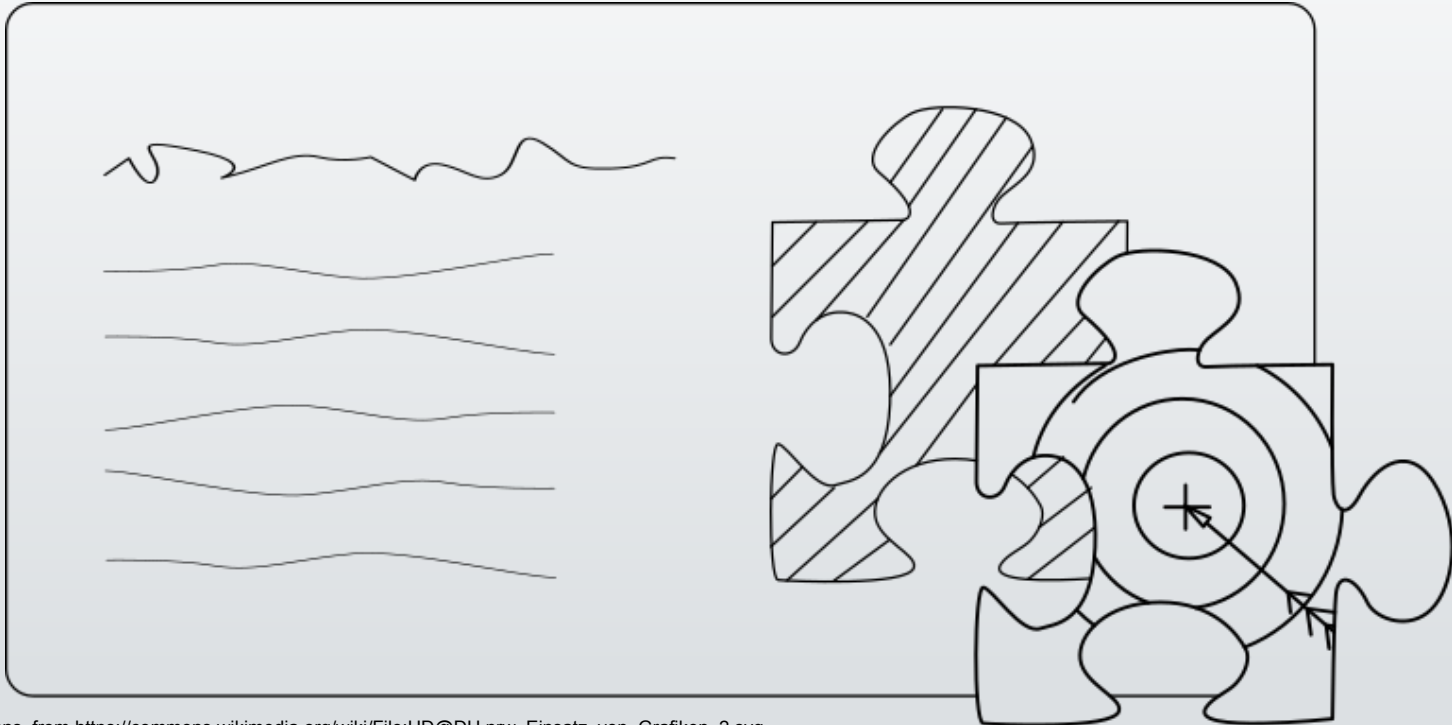
Respondents' Use of Generative AI

- 56% Chatbots
- 20% Image generators

Q12: How familiar are you with the following generative AI tools? (Select one per row); n=642 Source: Aberdeen, March 2023

ABERDEEN
 STRATEGY & RESEARCH

Established use of AI: Microtargeting



Established use of AI: Emotion detection



Image by Chricantrell1989, from https://commons.wikimedia.org/wiki/File:Photo_on_2-3-23_at_10.12_PM.jpg

Established use of AI: Behavioral Modification

Forbes<https://www.theguardian.com/technology/2018/mar/17/facebook-cambridge-analytica-kogan-data-algorithm>

FORBES > BUSINESS > POLICY

Facebook Manipulated User News Feeds To Create Emotional Responses

Gregory S. McNeal Contributor @


I write about business, law, and technology policy.

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Carole Cadwalladr and Emma Graham-Harrison

Sat 17 Mar 2018 09:02 EDT

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115



Introducing the ACRL Framework for Information Literacy in Higher Education

- Predecessor: Information Literacy Competency Standards for Higher Education (2000)
- Adopted in 2016
- Set up dispositions for students: information literacy as a process



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Misinformation, content farms, and artificial intelligence

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Sources

- Association of College and Research Libraries (ACRL) (2000). Information Literacy Competency Standards for Higher Education. Chicago, IL: American Library Association. <https://alair.ala.org/server/api/core/bitstreams/ce62c38e-971a-4a98-a424-7c0d1fe94d34/content>
- Association of College and Research Libraries (ACRL) (2016). ACRL Framework for information literacy for higher education. Chicago, IL: American Library Association. <https://www.ala.org/acrl/sites/ala.org.acrl/files/content/issues/infolit/framework1.pdf>
- Boiy, E., Moens, MF. (2009). A machine learning approach to sentiment analysis in multilingual Web texts. *Information Retrieval*, 12, 526–558. <https://doi.org/10.1007/s10791-008-9070-z>
- Burns, M. N., Begale, M., Duffecy, J., Gergle, D., Karr, C. J., Giangrande, E., & Mohr, D. C. (2011). Harnessing Context Sensing to Develop a Mobile Intervention for Depression. *Journal of Medical Internet Research*, 13(3), 11. <https://doi.org/10.2196/jmir.1838>
- Cadwalladr, C., and Graham-Harrison, E. (2018, March 17). How Cambridge Analytica turned Facebook ‘likes’ into a lucrative political tool. *Guardian.com* . <https://www.theguardian.com/technology/2018/mar/17/facebook-cambridge-analytica-kogan-data-algorithm>
- Confino, P. (2024, January 18). ‘It’s the worst quality results on Google I’ve seen in my 14-year career’: Web search exec breaks down how ‘SEO parasites’ and AI-enabled spam are breaking the internet. *Fortune.com* . <https://fortune.com/2024/01/18/why-is-google-search-so-bad-spam-links-seo-ai-algorithm/>
- Douglas-Cowie, E., Campbell, N., Cowie, R., and Roach, P. (2003). Emotional speech: Towards a new generation of databases. *Speech Communication*, 40(1-2), 33-60. [https://doi.org/10.1016/S0167-6393\(02\)00070-5](https://doi.org/10.1016/S0167-6393(02)00070-5)
- Hatem, R., Simmons, B., & Thornton, J.E. (2023). A call to address “AI hallucinations” and how healthcare professionals can mitigate their risks. *Cureus*, 15(9). <https://doi.org/10.7759/cureus.44720>
- McNeal, G.S. (2014, June 28). Facebook Manipulated User News Feeds To Create Emotional Responses. *Forbes.com* . <https://www.forbes.com/sites/gregorymcneal/2014/06/28/facebook-manipulated-user-news-feeds-to-create-emotional-contagion/>
- Reagan, K.J. (2024). AI literacy: a toolkit for educators & students. Georgia Southern University: University Libraries. https://georgiasouthern.libguides.com/ai_literacy
- Tsai, P. (2023, April 12). When will ChatGPT replace search? Maybe sooner than you think. *PCMag.com* . <https://www.pcmag.com/news/when-will-chatgpt-replace-search-engines-maybe-sooner-than-you-think>



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