Generative AI and the Continuing Importance of Information Literacy

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Critical Issues Conference, UM-Flint
March 7, 2024
Agenda

- Data and AI Training
- Back to the Basics: Information Literacy
- Limits and Transparency
- Chatbots and Current Events
- Chatbots and Sources
- Fact Checking and Source Evaluation Activities
- Future of Searching and AI
- Questions
Data and AI training

AI requires data

- AI models are trained using vast amounts of data
- Data scraping - we won’t always know what has been scraped
- Data labeling - combines human and automated efforts
- Data scientists will continue to find ways to automate training and shorten training time
- Humans built these systems - our limits, biases, and misinformation will be present in the data and in the results

(Common Crawl, n.d.; Hart-Davidson, 2023; Megorskaya, 2022; Taulli, 2019)
Back to the basics: Information literacy

Librarians teach information literacy: the ability to find, access, evaluate, and use information, or

“[T]he set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically in communities of learning.”

Questions to consider, and to share with your students:

● Who created this AI tool?
● How did they train it?
● What data was used to train it?
● When was the data published?

(American Library Association, 2006; Association of College and Research Libraries, 2016)
Limits of pretrained chatbots and AI search assistants

Most chatbots are pretrained, no new training material added after release

- ChatGPT 3.5 - January 2022
- ChatGPT 4 - January 2023
- UM-GPT - depends on which model you use, GPT-4 Turbo April 2023

Some are merging chatbots and search engines

- Bing Copilot - “some point in 2021” but able to search for more recent info
- Gemini - “Google doesn't publicly disclose the specific date of my training data's last update.”

(Google, n.d.; Microsoft & OpenAI, n.d.; OpenAI, 2024; University of Michigan, n.d.-a, n.d.-b)
Limits of pretrained chatbots and AI search assistants

Chat-GPT, UM-GPT, Copilot, and Gemini all give disclaimer that information may not be correct
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Copilot uses AI. Check for mistakes. Terms Privacy FAQs Get Copilot Pro

Message ChatGPT...

ChatGPT can make mistakes. Consider checking important information.

Enter a prompt here

Gemini may display inaccurate info, including about people, so double-check its responses. Your privacy & Gemini Apps

Ask U-M GPT Anything! (Resize Chat Box / Shift + Enter for multi-line prompts)

Regents of the University of Michigan
ITS AI Services such as UM-GPT may occasionally produce inaccurate information

(Coulter & Bensinger, 2023; Google, n.d.-a, n.d.-b; Microsoft & OpenAI, n.d.; OpenAI, 2024; University of Michigan, n.d.)
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Alphabet shares dive after Google AI chatbot Bard flubs answer in ad

By Martin Coulter and Greg Bensinger
February 8, 2023 7:49 PM EST - Updated a year ago

(Coulter & Bensinger, 2023; Google, n.d.-a, n.d.-b; Microsoft & OpenAI, n.d.; OpenAI, 2024; University of Michigan, n.d.)
How do they deal with current events?

Pretrained models admit they do not have access to current information.

You

Who won the 2024 superbowl?

ChatGPT

As of my last update in January 2022, I don't have information on events that occurred after that date, including the winner of the 2024 Super Bowl. You can find the latest information by searching online or checking reliable sports news sources.
How do they deal with current events?

Pretrained models admit they do not have access to current information.

What is going on with the U.S. presidential election?

As an AI with a knowledge cutoff in early 2023, I cannot provide real-time updates on current events, including the status of the U.S. presidential election. However, I can give you an overview of the typical election cycle in the U.S. and how it generally unfolds:

**Primary Elections and Caucuses:** These are held in each state and territory to choose delegates who are committed to various candidates for the party's national convention. These usually start in winter of the election year and continue through spring or early summer.
How do they deal with current events?

Pretrained models admit they do not have access to current information.

You
Can you tell me what is going on with the Russia invasion of Ukraine?

ChatGPT
As of my last update in January 2022, I cannot provide real-time information on specific events occurring after that date, including developments related to the Russia-Ukraine conflict. However, up until that point, tensions between Russia and Ukraine had been ongoing for several years, with Russia annexing Crimea in 2014 and supporting separatist movements in eastern Ukraine. Efforts to resolve the conflict diplomatically through agreements such as the Minsk Protocol had not been successful in bringing about a lasting peace.

For the most current information on the situation, I recommend consulting reliable news sources or official statements from relevant government agencies.
How do they deal with current events?

AI assisted searching can pull more recent information, but the content of the chat can still be generic and dated, or somewhat tangential.

Let’s take a look at some Copilot and Gemini examples.
How are they referring back to sources?

It’s all over the place.

- Completely real source, but you should check to see how relevant it is.
- Part of the citation is real - author name, title of journal or news source.
- Complete hallucination.

Real sources can seem randomly selected.

Let’s look at some examples (it gets weird).
Always fact check

More fact checking is necessary for unfamiliar topic.

Cheating or Learning? Walking the AI tightrope in education
Source evaluation and fact checking

AI has added a new dimension to evaluating information, but the classic methods of evaluation are still relevant, though we will need to adjust them a bit.

(Caulfield, 2019)
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Investigating the source

The 5 W’s
Who
What
When
Where
Why

CRAAP
Currency
Relevance
Authority
Accuracy
Purpose

SMELL
Source
Motivation
Evidence
Logic
Left out

ASPECT
Authority
Sources
Purpose
Evenness
Coverage
Timeliness

(Blakeslee, 2004; McManus, 2013; Nagel, n.d.)
Suggested IL activities

- Discussion of how GenAI works
  - Doesn’t have to be that technical, basic understanding.
- Use chatbots for brainstorming, and talk about what kind of evidence you need to support its claims.
- Evaluate AI generated content as you would non-AI sources.
  - Evaluate text for specificity. How generic is the text?
  - Are there any facts that you can trace?
- Evaluate AI generated bibliography.
  - How real are these sources?
  - Where should you go to verify them?
  - If you asked for in-text citations, do the sources match the output?
Future of literature searching and AI

More and more databases and search engines will be incorporating GenAI.

- **scite.ai** - beginning in 2019 they started “developing a deep learning platform that can evaluate the reliability of scientific claims by citation analysis.”
  - “Database of over 1.2 billion Citation Statements and metadata from over 187 million papers”
- **Scopus AI** - “synthesizes the abstracts of relevant [Scopus] documents into a clear, digestible and referenced summary within seconds.”
  - Alpha version Aug. 2023, launched Jan. 2024
- **Web of Science AI Research Assistant** - focusing on literature reviews and improved database search functions
  - Beta launched in December 2023

(Buckland, 2023; Elsevier, n.d., 2023, 2024; Scite, n.d., 2019)
Questions?

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