

BEYOND BOOKS

Library Professionals As Champions In The AI Revolution

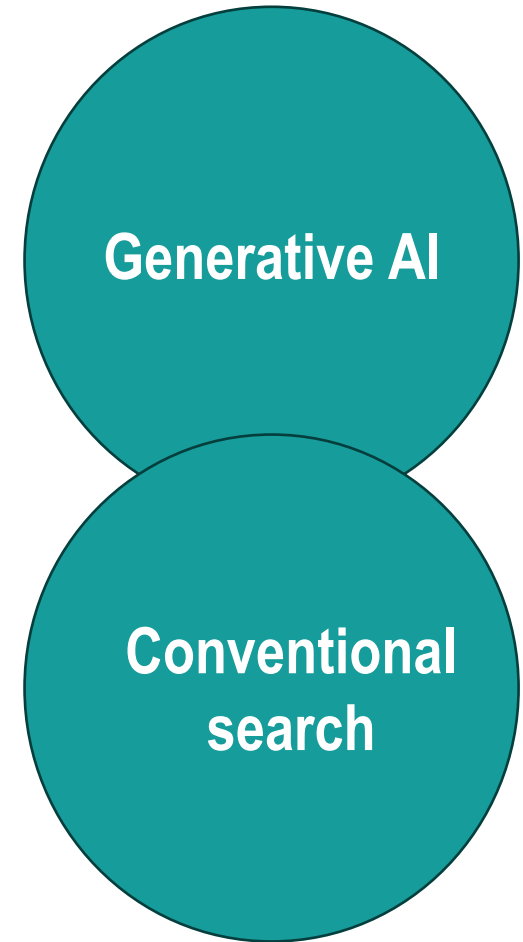
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What we will cover

- ❖ Introduction
- ❖ How students search for information
- ❖ The conventional Search
- ❖ Prompt Engineering
- ❖ Similarities
- ❖ Differences
- ❖ Skills
- ❖ Conclusion



Introduction

HIGHER EDUCATION STUDENTS

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graph TD; A[HIGHER EDUCATION STUDENTS] --> B[Conventional Search]; A --> C[Artificial Intelligence];
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Conventional Search

- ❖ Library Discovery Systems
- ❖ Books, Journals, Databases
- ❖ Institutional Repository
- ❖ Open Access

Artificial Intelligence

- ❖ Generative AI
- ❖ ChatGPT
- ❖ Copilot
- ❖ Quillbot , Perplexity

The search for Information

How students generally search

- ❖ Social media - Tik Tok, YouTube
- ❖ Google - the favourite
- ❖ Print resources
- ❖ Electronic resources
- ❖ Generative AI



How librarians teach students

- ❖ Library subject guides
- ❖ Library discovery systems
- ❖ Evaluation of resources
- ❖ Critical analysis of content
- ❖ Citation and referencing

Do students really use AI for academic research?

66%	54%	36%	53%
Use AI to explain concepts	Use AI to suggest ideas	Use AI mainly as a private tutor	Use Generative AI for assessments
35%	22%	63%	65%
Unaware that AI produces false information	Are satisfied with AI support	Consider their institution has a clear AI policy	Think their institution can detect AI-generated work

Freeman, J. (2024). 'Provide or punish? Students' views on generative AI in higher education', HEPI Policy Note 51. Available at: <https://www.hepi.ac.uk/wp-content/uploads/2024/01/HEPI-Policy-Note-51.pdf>

The conventional search - Strategies

- ❖ Keywords and subject headings (MeSH)
- ❖ Boolean operators AND/OR/NOT
- ❖ Synonyms; variation in spelling
- ❖ Phrase searching, quotation marks
- ❖ Truncation and wildcard; proximity searching
- ❖ Filters (date range, source, language, geography)
- ❖ Abstracts (A&I databases)
- ❖ Citation tracking, Impact factor, Systematic review
- ❖ **PICO** – **P**atient, **I**ntervention, **C**omparison, **O**utcome

Prompt Engineering

- ❖ Involves designing queries, instructions or inputs (known as prompts).
- ❖ Could be a question, a command or a statement.
- ❖ Should be able to give standard, correct and valid replies.
- ❖ User trains AI to generate accurate and relevant response
- ❖ AI systems becoming more sophisticated; prompt engineering also evolving
- ❖ Learn more here: <https://promptengineering.org/>

Some Prompt Engineering strategies

- ❖ **Zero-shot** : giving instructions without examples
- ❖ **One/multiple shot** : giving instructions with a single or multiple example(s) so LLM understands what the ideal answer is
- ❖ **Chain-of-thought** : requesting AI to explain its reasoning
- ❖ **Iterative** : refining queries during the same session
- ❖ **Negative** : Specifying what the model should not do
- ❖ **Role playing** : instructing AI to adapt a persona to provide a response suitable for the context

One / Multiple-shot prompting

- ❖ Provide one/two/multiple examples of complete questions and answers
- ❖ The system learns the style of the examples
- ❖ When you give it a new question, it gives an answer that follows the same structure

Input : What are the challenges of implementing a 4-day working week?

Output : ???

Chain-of-thought prompting

- ❖ Break down the query step-by-step
- ❖ Ask AI to walk through its thinking process
- ❖ The system breaks down the rationale
- ❖ Shows users how to organise arguments
- ❖ Good for mathematics and logical reasoning

5. FINAL VERDICT. Occasionally YES. As long as it doesn't replace balanced eating entirely, dessert-first dining can be a delightful way to embrace life's sweeter moments.

Should I eat dessert before dinner?



1. Understanding the tradition



2. Exploring the appeal



3. Considering Health impacts



4. Balancing enjoyment & nutrition



Iterative prompting

- ❖ Ask a question multiple times
- ❖ Start with a broad search - UK, Christmas
- ❖ Make small changes to your question as you go along
- ❖ Clarify if the response is unclear
- ❖ Encourage deeper understanding as each question builds on the previous one
- ❖ Remember - AI is learning from your dataset



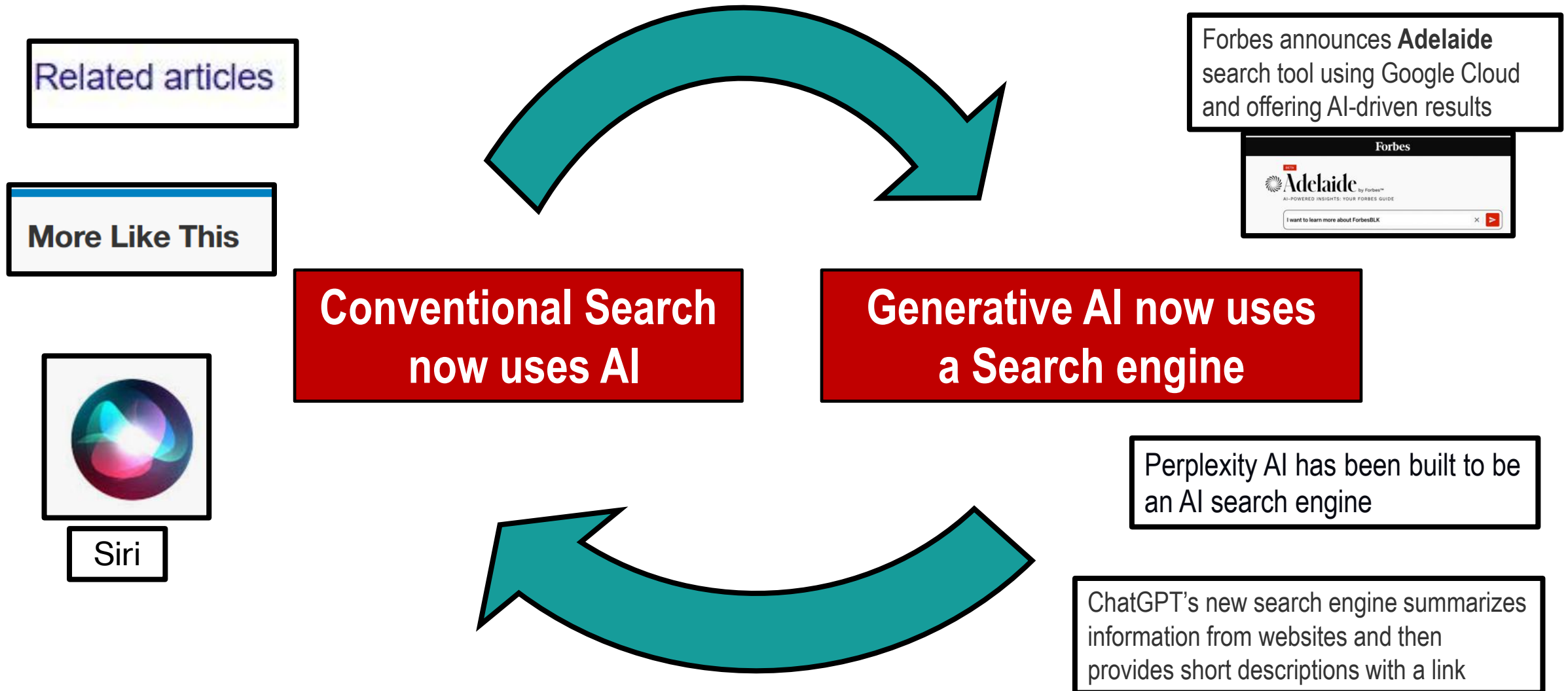
Conventional and AI search - Similarities

	Parameters	Indicators
1	Searching	Both require specific inputs to retrieve information. Search can be made narrow or broad to refine results
2	Technology	Both require purchase/subscription, access and knowledge (hardware and software) creating a Digital Divide
3	Speed	Nanoseconds – and getting better
4	Algorithm	Constantly changing but concealed because it is revenue generating
5	Results	Both extract from large amounts of data
6	Cost	Expensive; Paywall to access and use complete package IEEE - £20,000 per year, Paid ChatGPT - £200 per year
7	Ethics	Data privacy violation: Both Google and AI use your data to know more
8	Sustainability	High energy consumption for data processing and use in both cases

Conventional and AI search - Differences

	Parameters	Conventional search	AI search
1	Searching	Links directly to the information source	Provides information extracted from different sources
2	Information source	Academic resources, databases, discovery and management systems Depends on the organization	Pre-trained datasets inputted into the system Depends on the choice of AI tool
3	Keywords	Metadata connected by Boolean operators	Extracts keywords from natural language prompts
4	Filters	Narrows search results providing focussed information retrieval	No filtering options unless specified in the prompt
5	Accessibility	Academic search is often free for the user/student	Better results might require payment
6	Results	If not found, yields 0 results	Might hallucinate in its effort to please the human
7	Currency / Relevance	Provides more current results but also sponsored outcomes	Might provide results from older datasets unless paid
8	Subsequent searches	Each set of keywords is a new search	Understands previous queries, Yes, No, Please and Thank you (like a conversation)

Conventional or AI search ? It all comes full circle



The CLEAR framework

Librarians can develop their own Prompt Engineering framework

Concise : avoids unnecessary words in prompts

Logical : prompts are sequenced so AI can connect ideas

Explicit : specifically instructing AI to produce results you want

Adaptive : flexible while changing prompts

Reflective : continuously evaluate how effective the prompt was

Do Librarians have the skills to be AI champions?

66%

The AI
Information
Finder

54%

The Prompt
Engineer

36%

The AI
Librarian

53%

The AI
Referencing
Advisor

35%

The Critical
Evaluator of
information

22%

The Information
Ethics Advisor

63%

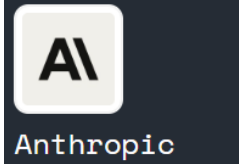
The AI Literacy
Educator

65%

The AI
Copyright
Consultant

Are you a Librarian and/or an AI specialist ?

SAN JOSÉ STATE UNIVERSITY



Senior Assistant Librarian, AI Librarian

£69,000 per annum

This role involves creating AI literacy programs, advocating for the ethical use of AI, and supporting various AI-related initiatives.

<https://jobs.sjsu.edu/en-us/job/542890/senior-assistant-librarian-ai-librarian>

Prompt engineer and librarian

£193,000 per annum

This role involves building up a library of high-quality prompts or prompt chains to accomplish a variety of tasks.

<https://aicareers.jobs/job/prompt-engineer-librarian/>

DEPARTMENT OF TRANSPORTATION
Office of the Secretary of Transportation

Librarian (Digital Publishing, Collections, & Repository Management)

£152,900 per annum

This role involves experimenting with promising new digital tools or technologies, including Artificial Intelligence (AI).

<https://www.transportation.gov/careers>

Conclusion

- ❖ Librarianship is both **relevant** and **essential** in an ever-changing AI landscape
- ❖ A search is a search – whether conventional or AI
- ❖ Knowledge of information **search and retrieval** can be applied to Generative AI
- ❖ Change in role, work strategy and sharing best practices is the **need** of the hour
- ❖ Librarians should be innovative, inventive and always **willing to learn**

*The AI Librarian knows that
the quality of the question impacts
the quality of the answer.*

*“Humanising”
the search experience*

Thank you for giving us the opportunity to add to the value of Librarianship in the AI era.

We gratefully acknowledge the contribution of our good friends, **Generative AI, Chat GPT and Copilot** in the process and production of this presentation.

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