

8. Information Retrieval (IR; Search)

10x10 – Introduction to Biomedical Informatics & Artificial Intelligence
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Information retrieval (IR, aka search)

IR deals predominantly with accessing knowledge-based information, i.e., the scientific basis of biomedicine and health

- As distinguished from patient-specific information

Other reasons this unit is important

- Improve your searching skills
- It is my area of research!
- Growing role of generative AI and large language models (LLMs)

Searching – everyone does it ...

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"First, they do an on-line search."



... but new problems have emerged



And now we are in the era of generative AI

Generative AI having profound impact on almost all aspects of IR

- Confabulating answers and references cited
- Undermining peer review
- Enabling scientific misconduct and fraud

Can be useful but for many tasks, but need more than answers, i.e., “search still matters” in that where information comes from is as important what it says (Hersh, 2024)

- Clinical – patient-care questions
- Research – methods and insights
- Teaching – synthesizing knowledge for students

This unit will approach IR as content, indexing, and retrieval of published material but discuss impact of AI

Unit 8 overview

Process, Information, and Challenges

Content

Indexing

Retrieval

Generative IR

Evaluation and Future Directions