Artificial Intelligence and the Future of Bibliographic Control

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Outline

- Information and communications technology: Wither direction?
- What is artificial intelligence?
- What is bibliographic control?
- Philosophical basis
- Artificial intelligence and librarianship: Matters arising
- The Future of Bibliographic control
- Ethical issues
- Conclusion

Information and communications technology: Wither direction?

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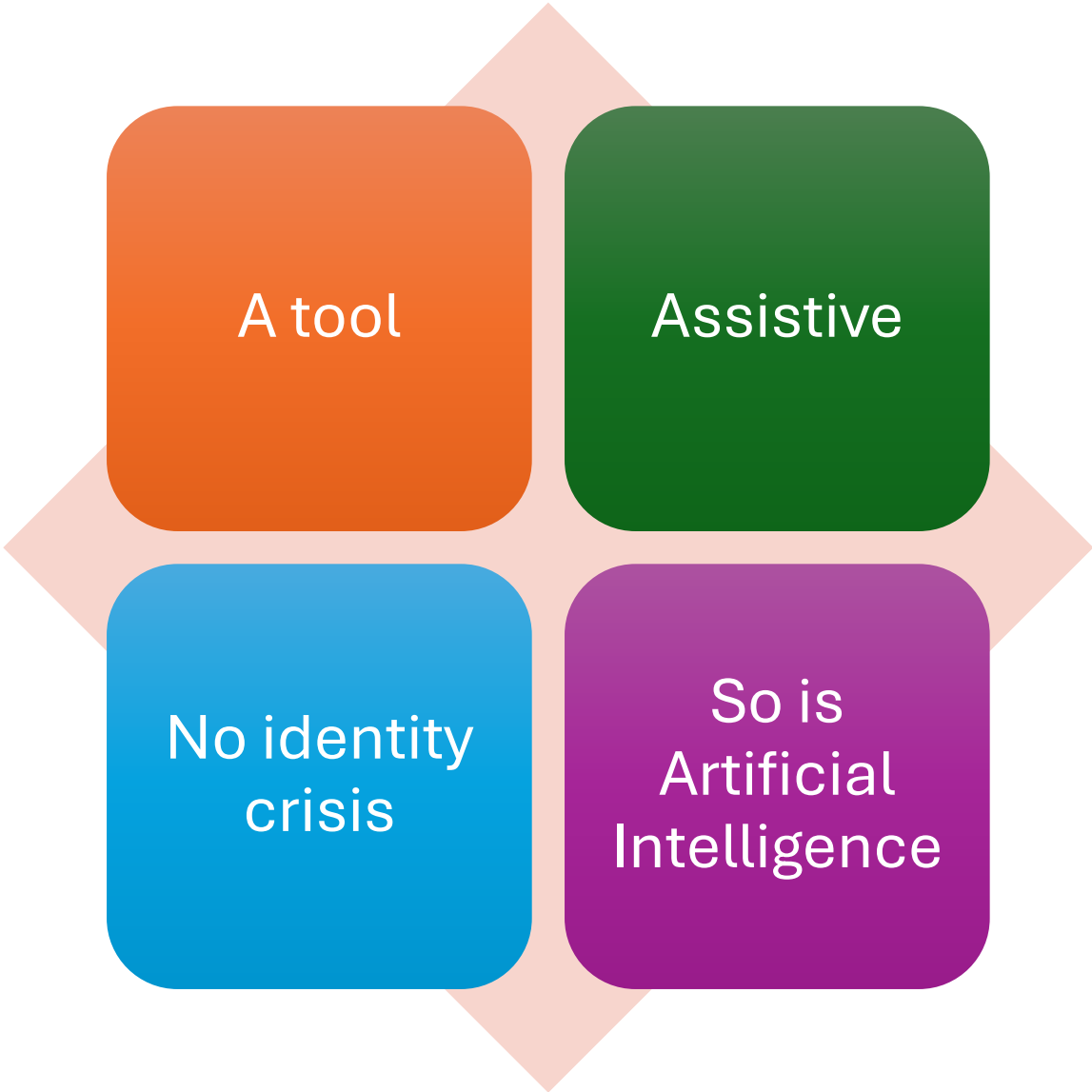
ICT and Librarianship: the nexus



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Where We Are

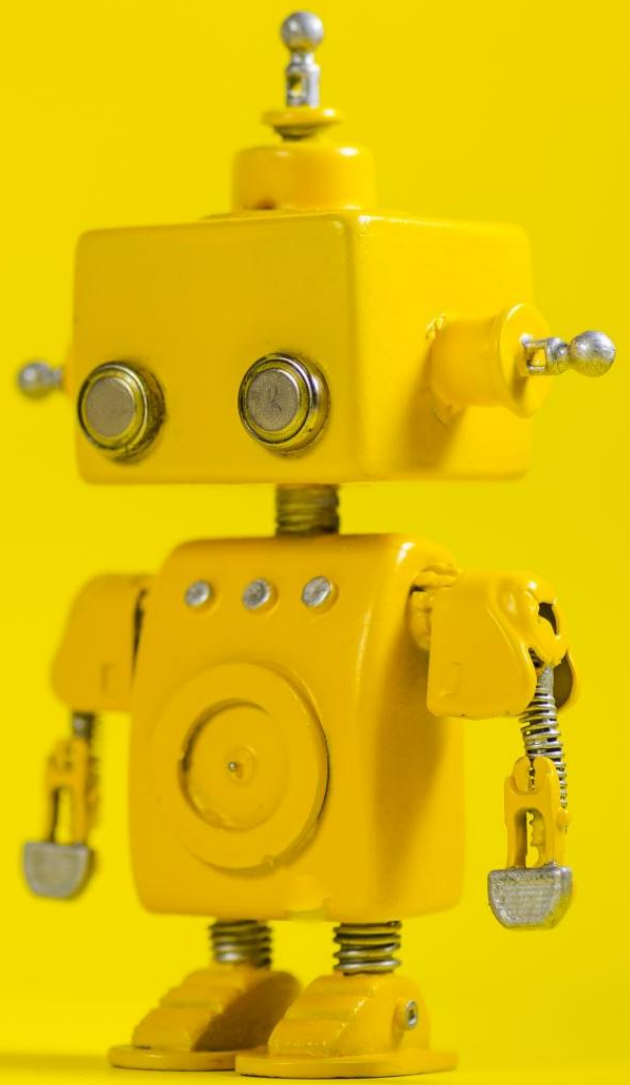
- As an assistive tool, there has been improvements, innovations for better service delivery.
- See
  - Information and Communications Technologies (Including Library and Learning Technologies) - Development – ScienceDirect
  - Historical Evolution Of ICT| UGC NET | CUET Mass Communication and Journalism | CUET PG | COQP 17
- Librarianship is a direct beneficiary of the improvement, riding high on every stage of the evolution of ICT.

Artificial Intelligence (AI)

- It is artificial
- Assistive
- Robotic
- Limited intelligence
- Unlimited exponentiation
- Questionable data integrity
- Ethically problematic

Artificial Intelligence (AI)

- AI has been described by Merriam-Webster Online Dictionary (2026) as ***"the capability of computer systems or algorithms to imitate intelligent human behavior."***
- A severely disruptive technology.



Artificial Intelligence (AI) (Contd.)

- AI comes in the form of robots, simulators, drones, etc.
- Imitates human behaviour, including gesticulations.
- Can be used in providing services – educational (including library), transportation, hospitality, etc.

How about Bibliographic Control?

Discoverability and accessibility to vital documents

Philosophically induced

Standardisation of bibliographic records

Sytematisation of data

Data integrity assured

Universality is the goal

Attempts at Universal Bibliographic Control (Bibliographical control (IEKO))

- Library of Alexandria (c.285-BC).
- Gessner's Bibliotheca Universalis (1545).
- The abstract journal and subject bibliographic databases (1790-).
- Universal Bibliographical Repertory (RBU) (1895-).
- Union Catalogs (1930s-)
  - WorldCat (1971).
- IFLA's and UNESCO's program on universal bibliographic control (1970s-).
- The World Wide Web (1989-) and Google.

Bibliographic Control

- The concept of having a comprehensive and searchable listing of the entire published output in a particular field [or in a particular country or by a particular author or other formal demarcations].
    - Pearson, David (2010, p.523). “Bibliographic Control”. In The oxford Companion to the Book, eds. Michael Felix Suarez and H. R. Woudhuysen. Oxford, UK: Oxford University Press, volume 1: 523, quoted in Hjorland, Birger (2023). Bibliographical control, in Birger Hjorland and Claudio Gnoli (2023) Encyclopedia of Knowledge Organization. Bibliographical control (IEKO)

Bibliographic Control: My Definition *(Contd.)*

- The systematic documentation and searchability of all published and unpublished intellectual works including creative works such as arts, crafts, drawings and images wherever they might be.

Philosophical Basis

Bibliographic Control	Artificial Intelligence
Intellectual assets should be discoverable	Human innovations should be celebrated
Appropriate tools should be developed and deployed for findabilty of resources	Develop more algorithms to trace and link documents
Deploy cataloguing and indexing tools to discover relationships in documents	Deploy data mining for effective discoverability of metadata

Artificial Intelligence(AI) and Librarianship: Matters Arising

- AI is assistive *not* "a one solution fits all."
- Librarians should therefore not resign to AI.
- AI should be deployed with caution.

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Artificial Intelligence(AI) and Librarianship: Matters Arising *(Contd.)*

Each institution should develop policies on the application of AI in every aspect of their work.

Librarianship scholars and practitioners should develop expertise in the potentials and limitations of AI.

Intellectual property rights should be well protected.

Artificial Intelligence(AI) and Librarianship: Matters Arising *(Contd.)*

Training of librarians on AI should be continuous

Librarians should take the lead in the training of faculty and students of institutions of learning on the appropriate uses of AI

AI in Bibliographic Control

- Expedites processing of resources for discoverability
- Backlogs of books and other documents easily captured
- Make up for inadequate staffing in number and expertise
- Easily identifies metadata and other main fields programmed

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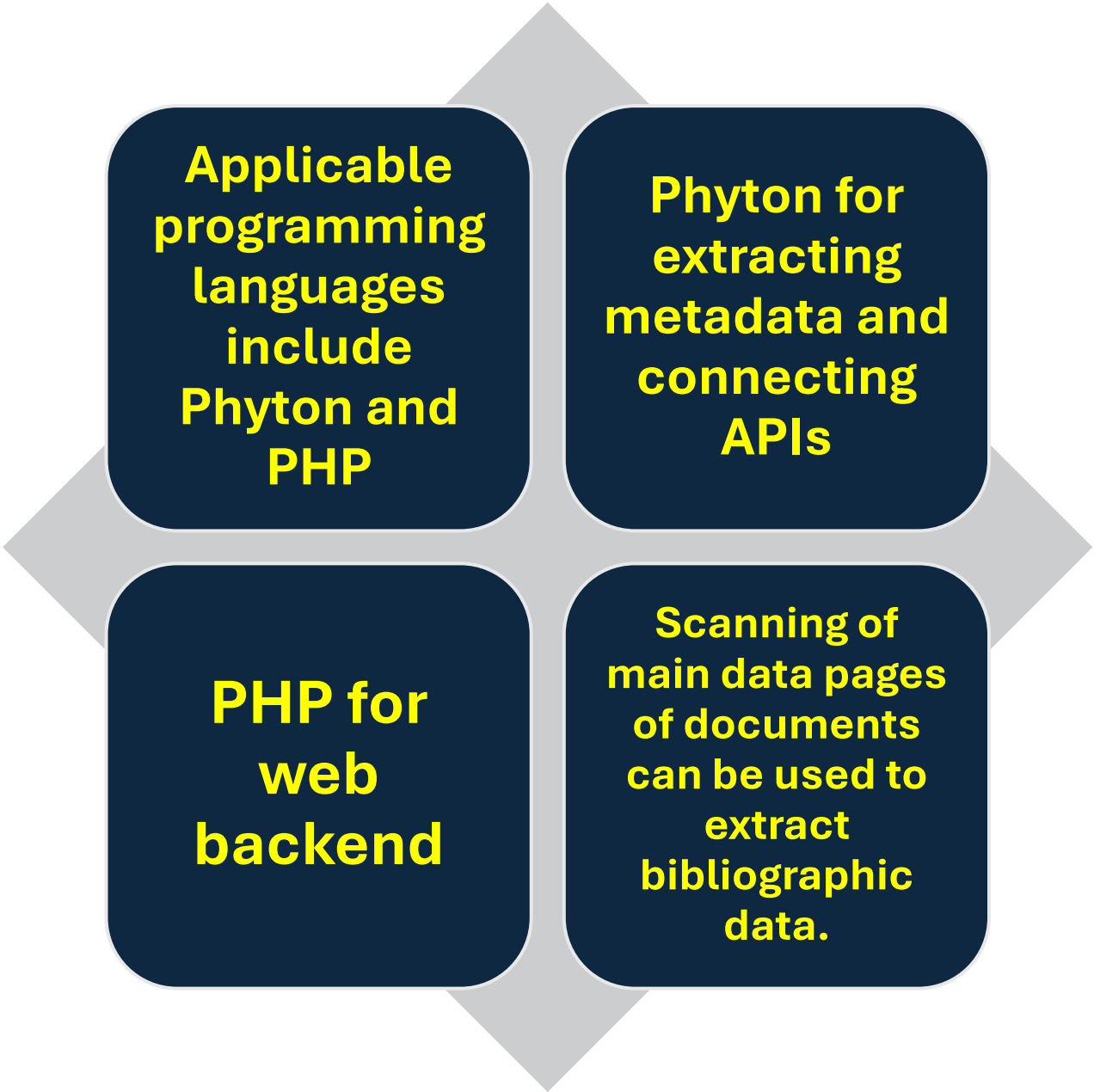
AI in Bibliographic Control *(Contd.)*



AI in Bibliographic Control *(Contd.)*

Documents in digital formats can also be processed easily (PyMuPDF) and Tesseract OCR.
Several databases, including Google Books can be mined for metadata.
MARC records and formats can easily be generated by prompting AI.
Same thing with ISBN, ISSN, author, title, publisher, date of publication, and description.

AI in Bibliographic Control *(Contd.)*

Flexibility of AI

Alma API (from Ex Libris Integrated Library System) can be used to correct incomplete extracted records

Titles, capitalisations, and other fields can be normalized using Alma API

Some example

- AI-powered Bibliographic Control: Automating Cataloging, Standardization, and Data Capture
  - Presentación-IFLA _Maria & Claudio.pptx

AI in Bibliographic Control: Baseline

AI deployment is desirable

It comes with costs: technology requirements e.g. APIs, expertise, and training

Cataloguers must still verify generated records

Accountabilty: Take responsibility for errors

An experience with AI

"It mines data from diverse sources without control for quality for the diverse sources. Besides, it generates wrong information. I was assessing a paper last year. I saw a reference citing article written by me in 2024 which I did not. I hope lecturers in our context understood the strength and limitations of AI as students use it to generate papers and theses."

- From a colleague professor.

The Future of Bibliographic Control

- Increasingly technology moderated
- Emphasis on universality
- Synchronisation of tools, data, findability, and accessibility
- More openness in sharing of data
- Data integrity firmed up
- More attempts by capitalists to impose costs
- Limitations on access to global databases

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Ethical Issues

- Data integrity
- Breaking down pay and other walls
- Intellectual property
- Shareability of data
- Open movement

Conclusion

- Artificial Intelligence has been catalytic in the evolving control of global databases of documents. Data capture, assignment of identifiers for visibility and retrieval of documents will continue to be a necessity. Practitioners will have to improve their knowledge and competencies in order to meet up with the unfolding work environment and access to world documents. The era of document lending and costs is about to end as AI assists in discovering the critical contents of documents. But this will have to be championed by a group of innovators who bargain with technology and pay respect to intellectual properties.

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