

BACKGROUND

The general implications of Artificial Intelligence (AI) for libraries are much discussed in LIS literature. These include, for example, implications for instruction (e.g. teaching algorithmic literacy), patron services (e.g. Al-driven library chatbots), and collections (e.g. the datafication of the collection). As this discussion takes place at the library-wide level, however, there are also important consequences for subject specialist librarians, who encounter varied applications of AI in the specific populations they support.

Subject librarians are those who specialize in a professional or academic discipline such as law, health sciences, business, or the humanities and social sciences. They may work in public, academic, or special libraries. They often publish in subject-specific journals and keep current with subject-specific literature.

This collaborative project aims to shed light on how subject librarians are discussing AI in the context of these specializations by reviewing the literature published by or for these librarians in subject-specific journals. Our goal is to uncover similarities and differences and to promote greater coherence between those working in disparate fields.



SEARCH TERMS

- artificial intelligence
- machine learning
- neural network(s)
- deep learning
- natural language processing
- algorithm
- text mining
- data mining

We searched subject-specific library journals in the areas of law, health sciences, business, and humanities and social sciences for articles related to artificial intelligence. The list of Peer Reviewed LIS Journals put together by University of Saskatchewan Library was used to inform us of these journals.

To find relevant articles within these journals, we used a set list of search terms and phrases (see "Search Terms" for this list of terms). Articles were examined and selected for those with a sufficient discussion or focus on AI. Articles mentioning AI and related terms in passing were not selected.

To understand the many ways AI is discussed and to expose patterns or trends in the subjects, we identified and defined nine recurring themes and categories (tags). Categorization of articles was broken down into two steps: 1. We noted whether a specific AI tool was the focus of the article.

Additional information that we captured included publication year.

Tag Name	Definition
State of the Industry	Overview of the AI in specific field (e.g. trends)
Teaching AI	LIS professionals teaching about or with AI
Learning Al	LIS professionals educating themselves about AI
Ethics	Ethical issues such as privacy, bias, and equity
Reference	Use of AI as intermediary between the library and the public (e.g. chatbots)
Discovery	How AI facilitates the findability of information
Assessment	Using AI to evaluate library services
Collections	Using/optimizing resources in the library for AI
Role of LIS professional	Opportunities and threats to the worker presented by AI

Limitations:

DISCUSSION

There is a notable difference between subject areas studied. The literature related to law had the greatest number of articles by far, though publishing activity in all disciplines increased significantly in the last 10 years. Few articles were found in the areas of business and humanities/social sciences.

The most prevalent theme overall was the impact of AI on discovery. Far fewer subject librarians appear to be writing about the impact on collections, assessment, librarians learning AI, and reference services. These categories are interesting because they may reflect a lack of expertise in leveraging AI for use in or by the library. Far more interest appears to exist in the subject librarian's role as intermediary between users and vendors/organizations that use AI (e.g. in search interfaces) than in the application of AI to services and collections.

Artificial intelligence was often discussed superficially as a generalized statement. This most commonly manifested as a passing reference that encourages libraries or librarians to keep abreast of changes and potential uses of these emerging technologies as captured in our search terms.

A NOTE ON TERMS

"Artificial Intelligence" is commonly defined as any technology that attempts to replicate tasks associated with human cognitive abilities (Butterfield et al., 2016). As such, use of the phrase over the years has not always referred to the same tools and technologies.

Our project captures the evolving nature of the term by not limiting our timeframe for articles on the topic. As information professionals' understanding of the field has developed in recent years, some have started writing about the topic with more specificity. To capture this, we included several specific terms to search in addition to "artificial intelligence", outlined in "Search Terms".

METHODS & LIMITATIONS

2. We labelled articles with tags based on one or more of the categories with which they aligned. Below is a list of the nine tags used along with how we define each one.

• As our focus was on specific subjects, we have not captured AI topics in all subject-specific library journals or broader, more general LIS journals in our study.

• From the selected subjects, we have not examined all possible library journals yet due to time constraints. • There are not many subject-specific library journals in the humanities and social sciences areas.



NEXT STEPS

Overall, we were somewhat surprised with the trends we uncovered – that artificial intelligence in its various forms is discussed and explored heavily in Law but significantly less so in the health sciences, business, and humanities.

Next steps include conducting a deeper review and analysis of our results to explore patterns around the subject area libraries and information professionals using or not using artificial intelligence.

Terms like 'data mining' and 'text mining' will also be examined further as these terms often appear without a strong connection to artificial intelligence or are discussed only in passing. Beyond our analyses, we see this work as an opportunity to investigate how we might apply machine learning and other applications of AI in our own work as subject librarians.

Ethics







— Humanities/Social Sciences — Business —Health Sciences —Law







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