Recommendations on Using Artificial Intelligence in Archival Appraisal and Selection
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This article reports on discussions from a three-day webinar about artificial intelligence (AI) in archival appraisal and selection. Increasingly, workshops and research are conducted to discuss AI and archives. This article is an example of this growing interest in the potential of AI for the field of archives. Yet, within the field, discussions about how AI can be applied in archival appraisal and selection is still limited. To advance a conversation on the issue, and particularly on ways to use AI in archival appraisal and selection, we organized a three-day webinar in 2022 with a diverse group of researchers and practitioners involved in AI and archival research. Our discussions revealed that implementing AI in archival appraisal and selection largely begins with identifying the need for AI. Our discussion further demonstrated that developing a set of guidelines or a framework for the use of AI in archival appraisal and selection is not possible. For example, as stated below, contexts are different, and a one-size- fits-all approach is likely to disregard the plethora of influencing factors. However, there are several questions or a list of things that researchers, practitioners, and organizations can ask/do in order to implement AI in archival appraisal and selection.

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Introduction

The way we create, produce, and access information in the digital age is changing. Emerging technologies, and particularly artificial intelligence (AI) is increasingly shaping, filtering, suggesting, and selecting information we consume or have access to. Given the large quantities of records, appraisal and selection has always been one of the most important functions in archives management. Yet, when it comes to AI in archival appraisal and selection, discussions are still limited. Current models or frameworks developed for appraisal and selection mostly focus on traditional archiving, digital curation, or on the internal functions and information packages of an archival repository.[1] Yet, appraisal and selection happen before resources are added to any archival repository. The fields of archives and records management are slowly undergoing a paradigm shift with emerging research on the potential use of AI in archival practices and spaces. With AI being increasingly applied to digital and hybrid digital/physical collections,[2] exploring ways to approach AI for archival appraisal and selection is relevant today. In March 2022, we participated in a three-day webinar titled "Artificial Intelligence in Archival Appraisal and Selection."

AI presents challenges and opportunities for archival appraisal and selection. Even though AI is used in archives and records management, more attention is yet to be given to AI application in appraisal and selection. In this article, we reflect on discussions from the 2022 webinar about AI in archival appraisal and selection. The purpose of the webinar was to propose ideas that would shape and facilitate the application of AI in archival appraisal and selection. As part of the reflection process, we circulated minutes from the meeting to selected webinar participants for comments along with a summary of the key ideas and suggestions. A draft paper of these comments was circulated among co-authors for feedback.

Workshop Description

The webinar brought together a diversity of peers and practitioners in AI and archival research, including academics from national and international institutions who attended the three-day webinar organized in collaboration with the Hub for AI research in Archives (HAIRA) and sponsored by the International Council on Archives (ICA). There were eighty-one participants from different countries (e.g., Brazil, Cameroon, Canada, France, Netherland, Russia, Spain, UK, and US).

The goal of the webinar was to discuss the challenges and opportunities AI presents for archival appraisal and selection. On the last day, we focused on things to do when using AI for archival appraisal and selection. The webinar was held for three days, for a total of over four hours. We used a discussion format that started with an introduction from the moderators, followed by presentations from guest speakers and an open discussion where the audience was invited to interact with the guest speakers. The last day of the webinar was designed as a working session. This allowed the guest speakers to focus on approaches to facilitate the use of AI in appraisal and selection.

The webinar was captured through video recording and notetaking. At the end of the

webinar, we agreed to circulate a draft of the recommendations and examine consensus on the suggestions discussed prior to publication. Following are recommendations and ideas to consider when an institution or a group of practitioners applies AI for archival appraisal and selection.

Defining Archival Appraisal and Selection

Niu states that "appraisal is a term often used in archives management, museum studies, and art galleries to assess the values of archival materials, museum artefacts, and artworks."[3] Appraisal follows criteria and/or methods that inform the process including: a) the alignment with the mission of a preserver; b) the value of the data/records both the data/records producers and users other than the creators of the data/records; c) the cost related to preserving the selected materials; and d) the institutional capacity to maintain the material/ records.[4] In 2016, the International Organization for Standardization for records management (ISO 15489-1:2016) extended the definition of appraisal to include an analysis of records' business context, processes, and risk. As Findlay put it "appraisal is no longer limited to the selection of records for permanent retention as archives, but includes an analysis of business, requirements, and risk for making a wide variety of decisions about records."[5] Hence, archival appraisal is an archival practice that requires the archivist to appraise and select a record based on the quality of its content and its provenance.

Archival appraisal is about the acquisition and preservation of the said record.[6] Yet, this practice also involves deciding whether to create records; determining what metadata are necessary to contextualize and handle these records; identifying who should access these records; and deciding how long they should be kept.[7] Archivists are history makers and shapers as they actively build, make, and remake memory, thus determining what should or should not be kept now for the future.[8] They preserve and create the collective memory of people, nations, institutions, individuals, and movements.[9] Archivists have the power to appraise, select, and acquire "important" records and data—that is, records and data they find valuable to remember or memorialize.[10] This brings to light the questions of biases, representation, and erasure of some communities, voices, and histories. Hence, the significance of appraisal processes and the challenges they present given the role archives play in shaping identities, collective memories of nations, individuals, and/or institutions.

Given that archival appraisal is a process that includes determining which records maintain, and how to manage these records over time, selection is the implementation of the appraisal activity. Archival selection is therefore a component of archival appraisal. It is with this understanding that Theimer defines archival selection as an activity that takes place once an aggregate of materials with organic relationships has been created.[11] There cannot be archival selection without archival appraisal.

AI in Archival Appraisal and Selection

To advance AI literacies among archivists, that is, an understanding, sense making, and use of AI by people in various contexts or situations for diverse reasons/outcomes, this webinar was held to create guidelines or, rather, a framework that could be used for archival appraisal and selection processes. It should be noted that the webinar panelists did not make a distinction between archival appraisal and selection. Yet, as previously stated archival selection is a component of appraisal, and AI may have greater potential in archival selection than it does in archival appraisal. Still, this webinar did not engage in such a distinction. Rather, it provided broader guidelines useful for any application of AI in appraisal and selection, and for AI application

in archival spaces in general. But first, what do we mean by AI in this context?

Artificial intelligence refers to digital systems that automate or assist with activities associated with human thinking such as decision making, problem solving, creating, and learning.[12] Increasingly, archives are digitized, and newborn digital records submitted to archives.[13] This large amount of data (big data) makes manual archival processes challenging and almost impossible.[14] In this paper, AI is a substitute for machine learning (ML), often seen as an application of AI, which is the study of computer programs that naturally learn from data.[15] In addition, there are other terms related to AI such as natural language processing (NLP), which focuses on text processing;[16] and deep learning (DL), a subfield of machine learning with algorithms consisting of multi-layered artificial neural networks which can extract universal features in complex datasets.[17] Thus, AI is about ML, NLP, DL, and any automated digital systems that facilitate activities linked to human thinking.

Our discussion revealed that context, that is, records and data, organizations, or institutions are different. Furthermore, with the complexity of archival appraisal and selection processes, we argue that the best approach or guidelines today is to question, share experiences, and learn from others. In our view, the time of developing frameworks or guidelines is over. For instance, recent social issues have shown that archiving does not and cannot happen in a vacuum. We believe that contexts are different, and what works in one context cannot be replicated in another setting. For instance, today, questions of diversity and biases are at the forefront; they are no longer overlooked in the interaction of emerging technologies such as AI with society or archives particularly in western contexts. Recognizing that several concerns, not limited to ethical and racial issues, should be considered in AI deployment. Thus, the intersection of these issues with AI begs for an approach that questions AI use in archival appraisal and selection processes. For this reason, it seemed appropriate for us not to develop guidelines or a framework, but rather share ideas you should think about to avoid certain mistakes. For AI in appraisal and selection processes, it appears more useful to suggest ideas that could facilitate the use of AI in this practice. In the following section, we discuss a list of things to do, ideas, and questions to ask when planning/considering AI in archival appraisal and selection.

Handling Appraisal and Selection

The use of AI in any archival activity requires the understanding that AI allows the automation of some archival practices and processes. Appraisal and selection are proactive processes that enable the creation, identification, and management of records. With the large number of records and data that archivists must engage with today, AI provides a way to handle these volumes of data or records.

Appraisal and selection involve complex processes. These processes cannot all be completed by a machine or automatically. Human intervention remains and will remain critical to perform these activities. Sensitivity review is one of the challenging activities archivists encounter when processing digital records/data.[18] Given the nature of sensitivity review tasks, it is difficult to automate them with the subtleties, knowledge of the context— that is, an understanding of what is said, who said it, where, when, and why, that archivists have. Yet, we suggest doing the following: Ask the question: should you even think about AI? As an organization, institution, researcher, or archivist, you should think through the problem you are trying to address and understand whether solving this issue requires AI. AI is not always the answer and is not a panacea. There is no doubt that AI techniques are increasingly being applied to traditional recordkeeping practices, and as a new way to capture, organize, and access under-utilized records or archives.[19] One should not run before they can walk.

Availability of data and records in computable form. There is a need to have records/data available. This point leads to the question of data ownership. Knowing who owns the data, what permissions need to be secured, and how long it takes to receive these permissions should be factored in the plan. In general, AI refers to the use of a computer to complete a task or mimic human-like intelligence or behavior with limited human intervention.[20] This means that records or data need to be digitized for AI to be used, or be in a machine-readable form.[21] Thus, it is critical to ensure that the records and data are digitized to experiment AI in appraisal and selection. Technology adoption and adaptation. Most AI technologies are developed by commercial providers with limited or no knowledge of archival appraisal and selection processes. Archivist and record management experts are often not in the room. Hence, applying AI in this area will require adopting and adapting these technologies to the data and the needs of each institution. For this reason, it is important to have a team of experts who are knowledgeable and would lead the adoption and even adaptation of the commercially developed technology.

It is our opinion that archivists cannot be replaced and that AI approaches cannot be used in all archival appraisal and selection processes. As the field keeps evolving and exploring the effect of emerging technologies such as AI on archival workflow, archivists need to develop trust in AI. Building human capacity. Along with technology adoption and adaptation, human cost is an aspect to consider as well when thinking about AI in these processes. To understand the current technology and how it can be used for appraisal and selection, other actors and experts are needed to hire and partner with to facilitate a contextualized application of AI. The need to build human capacity aligns with the need for archivists to be intelligent consumers. Being intelligent consumers means that archivists and record keepers need to have or be equipped with an understanding of AI and its techniques and applications to be able to a) make informed decisions on the technologies to utilize; and b) to shape discussions about AI in archival appraisal and selection. In other words, it is becoming critical to provide basic training to archivists on AI and machine learning to bring them up-to-speed.

Appraisal and selection are a challenging process. Yet, it does not mean that it cannot be performed without AI. We argue that archivists would have to add their own steps in the process, where AI technologies help optimize the processes like a) providing an overview of data/records; and b) facilitating the review of large amount of time in less time.[22]

Develop a shared language. It is necessary to establish a common language when planning to use AI for archival appraisal and selection. Such an initiative entails collaboration with people from different disciplines and domains of expertise. Therefore, establishing a language that could be understood by all will facilitate collaboration and communication among experts. As we previously stated, in building human capacity, bringing experts from different fields (e.g., data scientists, archivists, and IT developers) begs the need to have a common language that can be understood by everyone. For example, archivists' expertise is necessary for computer scientists to understand the kind of biases that can creep in when we are performing selection and appraisal. Developing algorithms to complete these activities is a small piece of the entire ecosystem that makes up selection and appraisal.

Advance a shared understanding of metrics. Understanding and knowing how to measure success is also key when considering AI in this area. In other words, having standards for assessing the application of AI in archival appraisal and selection processes is as important as having a shared language. Talking about metrics, in the literature, Shabou et al. propose a combination of data and archival metrics for AI in archival appraisal.[23] We add that metrics explored in the literature can

serve as a basis for creating metrics that will be context driven. Indeed, the context, which can refer to the institution or the data, allows metrics to have an impact.

Building a working relationship with AI. Most archivists have received a traditional training and education and are less likely to be programmers or individuals comfortable with algorithms. Hence, we contend that archivists need to develop trust in AI by learning the basics of AI approaches, experimenting with a small set of data to develop a relationship between archivists and the algorithm. Learning how algorithms work will develop archivists' confidence in AI and facilitate collaboration between archivists and AI.[24] Indeed, it is not enough to develop tools or write programs; archivists need to experiment with these tools with enough support and guidance from IT developers to be comfortable and trust the technology to complete the task.
Cost. The term cost refers to the funds needed to build the infrastructure (e.g., cloud platforms) as well as the human cost of hiring data scientists or training employees to manage and apply AI to appraisal and selection processes. For instance, the sensitivity of the material may require specific security settings from cloud hosting services, which may increase the cost. In addition, digitizing large volumes of data and records often requires a) sharing data sometimes between different institutions or individuals; b) the development of an ecosystem for sharing data; c) decision on how to share the data and records; d) the data center host; and e) including data ownership in the cost of using AI.

Conclusion

Research on AI in archives is emerging and we anticipate more integration of AI in the workflow of archivists and an increased interest in AI in various archival practices. Appraisal and selection are essential for archives.[25] With the emergence of AI in archival spaces, we believe that these ideas will provide a setting to frame the application of AI in archival appraisal and selection.

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