

The human element in digital heritage: an interview with Ines Vodopivec

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Ines Vodopivec is a scholar, institutional leader, and international policy voice, she currently serves as Chair of artificial intelligence for libraries, archives, and museums (AI4LAM) the global network that is becoming the reference community for responsible artificial intelligence (AI) adoption across the gallery, libraries, archives, museums (GLAM) sector. Her background is both deep and wide: she has served as Deputy Director of the National and University Library of Slovenia, sat on the Management Board of the Europeana Network Association, and contributed to the UNESCO Memory of the World National

Committee. In short, she brings the rare combination of on-the-ground institutional knowledge and high-level strategic vision that a moment like this demands. Under her guidance, AI4LAM has grown into a genuinely global coalition. Through regional chapters, specialized working groups – from speech-to-text tools to AI literacy education – and a growing web of strategic alliances with organizations such as Conference of European National Librarians (CENL), Europeana, IIF, ICARUS, and IIPC, the network is building collective capacity that no single institution could develop alone. Its annual flagship event, Fantastic Futures, has become a landmark gathering for the field. The interview that follows offers a window into both the complexity of the challenges ahead and the clarity of purpose that Vodopivec brings to meeting them. From the ethics of data governance to the long-term preservation of AI-generated cultural artifacts, her answers reflect a practitioner who has thought carefully about where this technology is taking us – and who is determined that cultural heritage professionals will help shape that destination, not simply arrive at it.

Q1. AI4LAM's work suggests a paradigm shift for GLAM (gallery, libraries, archives, museums) institutions. In your view, what is the single most significant ethical challenge AI currently poses to the core mission of preserving and providing access to cultural heritage?

Since the beginning of written history, institutions such as libraries, archives, and other cultural heritage institutions have been the custodians serving as the keepers and providers of reliable and trustworthy information. With the widespread public adoption of the internet, this role has increasingly been questioned, placing cultural heritage institutions at the margins of digital information accessibility. Today, in a rapidly evolving AI-driven digital landscape, this tension has reached a new peak. With the acceleration of AI-driven information delivery this long-standing role is being questioned even more. Users no longer turn first to GLAM institutions; they turn to AI systems that provide instant, synthesized answers, often without transparency about sources, accuracy, or context, or the references and sources are unreliable, even fake.



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But the challenge is no longer only WHERE the public, our users, seek information, but also HOW information is shaped, filtered, presented and delivered to them, especially when we consider the unprecedented speed and convenience offered by generic AI systems. Yet GLAM institutions continue to hold authoritative resources and trustworthy knowledge, and these strengths will play a major and crucial role in the future.

The ethical dilemma lies in determining how to make trusted data available in a user-oriented way while participating responsibly in global AI ecosystems. We must find ways to integrate with widely accessible AI platforms without compromising security, trust, data quality, or the integrity of our collections.

One of the most significant ethical challenges AI poses to the core mission of preserving and providing access to cultural heritage is maintaining the trustworthiness of information in an environment where AI systems increasingly mediate how people seek and receive knowledge. Ultimately, the central ethical challenge is ensuring that cultural heritage remains authentic, verifiable, and responsibly represented to the public understanding. Participating in an open, widely accessible digital landscape requires us to uphold rigorous standards of ethical stewardship.

Q2. The founding principle of AI4LAM emphasizes collective action: “individually, we are slow and isolated. Together, we can go faster and farther.” Can you share a concrete example of how the alliance has enabled its members to achieve an AI-driven project that a single institution could not have accomplished alone?

As a global organization, AI4LAM operates across diverse environments and regions, where cooperation between member institutions is essential. Collaboration takes place through AI4LAM Working Groups and regional Chapters, which focus on specific AI-related tools and services, such as metadata creation or the development of educational programs within the Teaching and Learning Working Group.

Yet the AI landscape is so complex and rapidly evolving that our first responsibility is to act as advocates for positive AI-driven digital transformation. We aim to speak with a common voice, protecting the essential role of the human professional in the loop while also encouraging the responsible adoption of new technologies that support cross-sector digital progress. Through collaboration, we address shared challenges and work toward solutions to issues that all GLAM institutions encounter in the digital environment.

One of the most important areas of our work is the organization of workshops and the sharing of knowledge among community members and within the broader sector. Investing in the education of our workforce is one of the most meaningful long-term contributions we can make to our collective future. For this reason, we are launching new educational initiatives, including AI4LAM Academia and a Strategic Forum designed for institutional leaders.

Q3. GLAM institutions are positioned as strategic data producers and archives for AI training. How is AI4LAM helping its members establish robust ethical frameworks and clear data governance policies to ensure this valuable data is used responsibly by external partners and AI industries?

Approaches to data sharing vary widely from organization to organization and from country to country. Policies in the USA differ significantly from those in Europe, and even more so from approaches common in parts of Asia. Despite this diversity, AI4LAM members engage in several activities that help shape more coherent data-sharing frameworks, usually more concrete in regional or sectoral focused groups, although the added value of AI4LAM is in fact in cross-sectoral knowledge sharing.

First, we facilitate the exchange of knowledge and good practices to support the implementation of use cases when members seek guidance. Second, we encourage the

sharing of strategies and policies that are already functioning effectively within member institutions. Third, we participate in high-level events and policy discussions to ensure that our community has an active voice in shaping the evolving global data landscape.

Q4. You noted a change in user behavior and the emergence of AI companies as a new “user” seeking curated data. How does AI4LAM balance the traditional commitment to public access with the commercial interests of the AI industry regarding GLAM collections?

The AI-driven digital transformation is fundamentally reshaping the user landscape of GLAM institutions. Cultural heritage organizations have traditionally been established to support and develop the public good – to serve society, provide access to knowledge, and offer insights into the past that help us understand the future. Yet their future role is expanding. Increasingly, GLAM institutions are also serving new categories of end users who were not previously part of their ecosystem. These users may include government agencies, commercial companies, tourism organizations, or scientific enterprises across a wide range of fields.

A strong example is the collaboration between the National Library of Norway (NLN) and the Norwegian Directorate of Health in developing a large language model to support nationwide healthcare operations. Such partnerships are possible only when a cultural heritage institution is both future-oriented and technologically advanced. In this regard, NLN stands at the forefront of global GLAM innovation in AI.

An interesting question is emerging from ongoing discussions in the sector: while scientific data and research outputs are generally expected to be open access and FAIR, cultural heritage institutions often challenge this model. Many GLAM organizations restrict access to their data, making it available only to specific researchers, defined research projects, and with carefully selected data sets. This imbalance between different approaches to data provision is particularly striking and deserves closer consideration.

Q5. One of AI4LAM’s strategic priorities is “advancing professional competencies.” what are the most critical AI and data science skills that library, archive, and museum staff need to acquire today to remain relevant and effective in the digital heritage sector?

Before we can talk about skills and competencies, we need to recognize that there is no single “AI.” The term is an umbrella for a wide range of advanced technologies that can help cultural heritage institutions – as other sectors – improve their processes and services. Because of this diversity, the answer to what constitutes the most critical AI and data-science skills is far from uniform. The skills needed in GLAM collections work differ greatly from those required in digital preservation centers, where cybersecurity may be the top priority.

More importantly, both current GLAM professionals and future generations must understand how new technologies can be used responsibly and effectively – whether for professional tasks, personal use, education, research, or broader societal benefit. They need the ability to critically assess information produced by AI tools, to recognize and track misinformation, and to detect false or manipulated content. Navigating an environment where tool-generated outputs coexist with original data will require even deeper knowledge and stronger critical thinking skills than before, ensuring that users remain in control of the results and understand their origins and limitations.

An excellent example of skills development in libraries is the AI Literacy Framework developed at the University of Virginia, which offers programs tailored to different stakeholder groups, including both students and staff.

Q6. In terms of “accelerating the development and integration of AI tools,” what is one key open-source tool or collaborative project that AI4LAM is currently championing to help institutions adopt AI quickly and affordably?

In AI4LAM, new areas of work continue to emerge as the technological landscape evolves. One of the more focused Working Groups I can highlight at this stage is our Speech-

to-Text Working Group, where experts from multiple continents collaborate on identifying the most effective extraction tools for sound and audiovisual collections. The group tests existing AI tools available on the market, develops its own solutions, evaluates results, and shares its findings with all interested parties. This ensures that organizations seeking to adopt Speech-to-Text practices in their workflows do not need to start from scratch.

Of course, several other Working Groups are actively contributing to our collective work, and new ones continue to emerge as needs and technologies evolve. All knowledge produced within the Working Groups is openly shared and accessible to everyone involved.

Q7. How is AI4LAM working to “advocate for systemic change” in the policy and legislative arenas, especially concerning copyright and intellectual property laws, to ensure they support the ethical application of AI in digital heritage?

AI4LAM works to advocate for systemic change in the policy and legislative arenas by actively engaging in high-level discussions, alliances, and cross-sector initiatives that shape the future of AI in digital heritage. Our role is not to act as a lobbying body, but to ensure that the voices and needs of the GLAM community are represented wherever AI-related policy is being formed.

We participate in policy-focused events, expert consultations, and strategic dialogues where issues such as copyright, intellectual property, data governance, and ethical AI use are debated. Through these engagements, we help articulate the specific challenges cultural heritage institutions face when applying AI to collections for responsible reuse of digitized materials.

AI4LAM also organizes cross-sectoral workshops and community meetings that bring together policymakers, legal experts, technologists, and GLAM professionals. These gatherings create shared understanding across sectors and help identify practical pathways toward legislation that supports innovation while safeguarding cultural heritage values.

By working collectively, we strengthen our ability to influence systemic change and promote ethical, sustainable, and legally sound approaches to AI across the global heritage landscape.

Q8. The partnership of AI4GLAM with the Conference of European National Librarians (CENL) is highlighted. What are the specific, measurable goals of the CENL-AI4LAM collaboration, and what concrete output is expected from this international cooperation?

CENL is only one of many international network collaborations that AI4LAM is building and developing, all with a shared purpose: advocating for the trustworthy and sustainable implementation of AI in the digital transformation of cultural heritage. Numerous other international networks contribute to this effort as well – Europeana, the Data Space for Cultural Heritage; ICARUS, the International Centre for Archival Research; IIF, the International Image Interoperability Framework Consortium; and IIPC, the International Internet Preservation Consortium, to name just a few.

AI4LAM works collaboratively with each of these communities to leverage emerging technologies in ways that advance the cultural heritage sector and reinforce global cooperation. Within CENL, a dedicated working group has been established in collaboration with AI4LAM to support European national libraries in implementing AI-enabled practices within their workflows. Each of these collaborations typically organizes a workshop or community meeting at the **Fantastic Futures conference**, our annual flagship event.

Q9. Looking ahead five years, how do you see the role and structure of GLAM institutions fundamentally transformed by the influence of artificial intelligence?

Over the past decades, the GLAM sector has steadily grown into a high-tech ecosystem, and this trajectory will only continue. Globally, some institutions – such as the National

University Library of Singapore – have already moved their physical collections into closed storage facilities to make space for AI labs and technology-focused learning environments.

With this in mind we can say that AI will undoubtedly become an integral part of GLAM workflows. Yet, true to the sector's long-standing practices, I am confident that this transformation will be approached with stability, sustainability, and long-term thinking. GLAM institutions have always integrated new technologies carefully and responsibly. One only needs to recall the transition from card catalogues to early DOS-based systems to see how profoundly the sector can evolve while maintaining its core mission.

Q10. As AI changes how information is created and consumed, what is AI4LAM's stance on the long-term digital preservation of AI-generated or AI-augmented cultural artifacts, and what strategies are being developed?

The question of long-term digital preservation of AI-generated or AI-augmented cultural artifacts is emerging not only within AI4LAM but across all legal deposit institutions. Every national library must now consider whether AI-generated books and other digitally born outputs fall within its preservation mandate. In many cases, these decisions are influenced by practical constraints, such as the availability of storage capacity at the institutional or national level, since such materials can consume substantial digital space.

At the same time, another important question arises when thinking about AI-generated content. Beyond concerns about the accuracy or reliability of the information, we must also consider its cultural and historical value. AI-generated content reflects the technological and societal trends of today and will almost certainly become a fascinating object of study for researchers in the future.

Legal deposit institutions harvesting the web are often “forced” to make selective choices about what to capture due to limited human and technical resources. For example, digital advertisements are frequently excluded from harvesting. Yet historically, librarians never cut advertisements out of printed newspapers or journals to save physical space. Imagine holding a newspaper full of holes where the ads once were – it would be unthinkable. Interestingly, those very advertisements are now often the subject of research in various fields of the humanities.

On the other hand, preserving digital advertisements is still more of a luxury than a standard practice today. As a result, our future collections of digitally born materials will inevitably contain “holes,” missing important elements of contemporary cultural and societal output.

The same risk arises when institutions neglect or refuse to preserve AI-generated content. Cultural heritage professionals should not act as censors; our role is to preserve and provide access – whether we are dealing with a Nobel Prize – winning book or an AI-generated children's comic strip. The age of censorship has long since ended, and there is little desire anywhere to revisit it. As cultural heritage professionals, our role is to safeguard the record, leaving it to future generations to assess the historical, cultural, or scholarly value of the materials we preserve.

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