

# **Artificial Intelligence in Finnish Art Museums**

Current Applications, Implementation Conditions and Future Directions

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<b>Abstract</b>	
<p>This thesis explores how Artificial Intelligence (AI) is currently being used in Finnish art museums and analyses the factors shaping its implementation, with particular attention to associated needs and challenges. Conducted between August 2025 and March 2026, the research uses a qualitative, exploratory multiple-case study design involving museum professionals from seven major Finnish art museums: EMMA – Espoo Museum of Modern Art, Finnish National Gallery, Helsinki Art Museum, Lahti Museum of Visual Arts Malva, Sara Hildén Art Museum, Tampere Art Museum and Turku Art Museum.</p> <p>The research combines a review of current AI applications through publicly available materials with interviews and email correspondence with museum professionals. The data were analysed thematically, forming the basis for an empirically grounded framework that helps explain current approaches to AI adoption in the art museum sector.</p> <p>The findings indicate that AI adoption in Finnish art museums is still at an early stage and is mainly oriented towards operational uses. In most cases, AI is being used through informal, staff-led experimentation rather than being coordinated through an institutional strategy. This reflects not only the absence of formal internal AI governance structures, but also constraints related to resources, expertise and the broader social and policy context surrounding AI.</p> <p>At the same time, this thesis argues that art museums are not only well placed to engage critically with AI as a force changing culture and society but also have a responsibility to develop opportunities for critical engagement with its implications through exhibitions, public programmes, and participatory initiatives.</p> <p>Overall, this thesis offers an empirical overview of how AI is currently being adopted in Finnish art museums and provides a conceptual framework for understanding how it may be approached responsibly within the sector.</p>	
<b>Keywords</b>	
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### **Note on AI Use**

I used Anthropic Claude (model: Claude Sonnet 4.6) and OpenAI ChatGPT (model: GPT-5.4) as proofreading tools to improve the grammar, clarity, and readability of this thesis written component. Claude and ChatGPT were also used to assist with translation of documents from Finnish to English; all translations were subsequently verified by a native Finnish speaker. AI was not used to generate any research content, analysis, or argumentation. All AI-suggested edits were reviewed and approved by me, and I take full responsibility for the final text.

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## 1. Introduction

This thesis analyses the current applications of artificial intelligence (AI) in the practices of Finnish art museums and examines the organisational and contextual factors shaping its implementation, with particular attention to associated needs and challenges. Using an exploratory multiple-case study approach, the research maps existing AI use cases across museum functions as well as museum professionals' perspectives on AI's future role in Finnish art museums. The study aims to develop an empirical understanding of AI adoption in this context to identify the institutional capacities required to support its future development. More specifically, this study aims to address the following main research questions: How has AI been used in Finnish art museums, and which museum functions has it supported? What are the organisational and contextual factors influencing the implementation of AI in Finnish art museum practices? What future AI applications are anticipated by museum professionals, and what institutional capacities are required to support them?

However, before turning to the analyses of existing practices, it is necessary to situate the study within the broader context in which it is developing. Recent technological advancements in AI have contributed to the increased attention to these technologies as they are becoming increasingly powerful, particularly generative AI. This has sparked increased private and public investment, as well as renewed efforts to legislate for and regulate AI across industries, particularly in the European Union (EU), which has played an important role in this matter. Nevertheless, it is important to note that, although the term "AI" now appears more frequently in policy documents and programmes, investment in related technologies often occurred previously under broader frameworks, including "digital transition" or "digitalisation" using more specific terms such as "machine learning." Caramiaux (2024) discusses this shift in terminology giving two reasons for such a change to happen in recent years. First, the author argues that AI has become a "communication and marketing tool" (p. 119) and second, the term AI began substituting more specific technologies under the broad AI umbrella "not to designate a technical object, but instead an infrastructure integrated into the socioeconomic fabric of modern digitized societies, which makes it less easy to define and gives it greater power" (p. 120).

In this study's context, Caramiaux's argument is relevant because this simplification of terminology conceals a power structure that can obscure how these technologies are already embedded in museum practices and their real risks. For that reason, in this thesis, I propose a framework for understanding how AI is articulated across different dimensions of museum work as shown later in this thesis on Table 1.

In Finland's case, as an EU Member State, the country takes part in shaping and implementing EU regulation and policy. At the same time, Finland has distinguished itself as a country that is actively engaged in AI development. Finland is often characterised by strong digital infrastructure and high institutional trust, which create favourable conditions for experimenting with AI. Martti Asikainen (2025) describes the Finnish AI ecosystem as "exceptionally dynamic and diverse for its size". These conditions are not accidental; Finland has been engaged with AI research since the 1970s and in 2017, it introduced what has been described as the world's first national AI strategy (Asikainen, 2025).

Finland's position in AI development is the result of long-term investment in research, governance and skills. For instance, Eurostat (2025; 2026) reports that Finland ranks highly in businesses adopting AI technologies and in the share of the population with basic digital skills. These outcomes are the result of the national AI strategy initiated in 2017, complemented by subsequent policy reports (including *Work in the age of Artificial Intelligence*), aiming to boost business competitiveness, improve public services and public-sector efficiency, and support societal welfare (European Commission, 2021).

In this context, AI adoption is expected to increase across industries in Finland, in line with the EU's strategic investment in these technologies. However, it is surprising that AI remains underexplored in the cultural sector (Derda et al., 2025). This gap is particularly visible in the museum sector, partly because of the nature of these institutions, but also because of their capacities and their responsibilities as trusted institutions for preserving and disseminating knowledge. For this reason, museums were selected as the focus of this study as they provide a particular relevant institutional context for debating AI. In addition, museums are more likely than many other smaller cultural institutions to have the organisational capacity, expertise, and

financial resources required to evaluate and implement AI-based practices, which typically involve substantial investment and maintenance.

Among the broad range of museums in Finland, art museums were selected as the main case study for this research because the arts and culture sector has become a particularly visible arena for debating AI, including criticism concerning the legitimacy, ethics, and cultural implications of AI in creative contexts. Moreover, art museums occupy a central position of influence in Finland's cultural context. According to the Finnish Heritage Agency's Statistics Card 7/2024 (Finnish Museum 2024: Facts and Figures) art museums are the most visited museums in Finland, recording over 3 million visits just in 2024 alone. Some of the most popular are the Ateneum Art Museum with 581,667 visits, the Museum of Contemporary Art Kiasma with 230,148 visits, Helsinki Art Museum with 141,927 visits, EMMA – Espoo Museum of Modern Art with 140,801 visits and Tampere Art Museum with 99,146 visits (Frame, 2025).

In line with the study's focus on AI applications in Finnish art museum practices, museum professionals from art museums across Finland were contacted and invited to participate. The discussion in this thesis is based only on materials gathered through interviews with museum professionals who responded and agreed to participate, together with relevant publicly available information regarding their institutions and the topic of this thesis. The art museums represented in this study are:

1. EMMA – Espoo Museum of Modern Art (EMMA) is a modern and contemporary art and design museum located in Tapiola at the WeeGee Exhibition Centre. Described in EMMA's website as Finland's largest art museum by gallery space, the museum was founded in 2002 by EMMA Art Museum Foundation and is home to the City of Espoo and Saastamoinen Foundation collections.
2. The Finnish National Gallery is a public foundation that operates under the Ministry of Education and Culture and is primarily funded by the Finnish state. It is the largest art museum organisation in Finland, welcoming more than 600,000 visitors each year and employing around 280 professionals. The organisation includes the Atheneum Art Museum, a classical/modern Finnish art museum, referred to as the "home of Finnish art", the Museum of Contemporary Art Kiasma (Kiasma), and the

Sinebrychoff Art Museum, home to what is described as Finland's most important Old Masters collection. The Finnish National Gallery also oversees the Finnish State Art Commission.

3. The Helsinki Art Museums (HAM) operates as a foundation under the Helsinki City Group's umbrella, focused on international art exhibition programmes and is home to Helsinki City's public collection. HAM is also responsible for organising the Helsinki Art Biennial.

4. Lahti Museum of Visual Arts Malva (Malva) is part of Lahti City Museums and includes the Art Museum and the Poster Museum, operating under a municipal museum model as part of the City of Lahti. Malva's Art Museum programme frequently includes technology-related and interactive art exhibitions. Malva is also home to the City of Lahti art collection.

5. Sara Hildén Art Museum is administrated by the City of Tampere, and it serves as the permanent home of the Sara Hildén Foundation. It frames its work around research-based curating, publishing, and public programming, specialising in international modernism and contemporary art.

6. Tampere Art Museum is a city-run museum organisation that manages the Tampere City Collection, with an exhibition programme that ranges from historical art themes to Finnish and international contemporary art. The museum is known for its annual Young Artists of the Year event and exhibition.

7. Turku Art Museum is run by Turku Art Society, exhibiting its collection as well as contemporary art. The collection is owned by the same association that runs the museum, representing what they describe as the golden age of Finnish art, along with Finnish and international surrealism and Finnish pop art.

This sample represents a diverse selection of major Finnish art museums. This diversity is also evident in the different ways the museums relate to technology. These differences can be seen in how technology is addressed in strategic documents and integrated into institutional practices, for example through staff positions especially dedicated to technological matters. At the same time, it is also important to recognise that state and municipal institutions operate within administrative structures that might not be fully reflected in the structures evident on publicly available materials regarding their institutions alone. Nevertheless, upon analysing the

information available on each museum's official websites, technology, which appears under terms such as "digitalisation", "online content", "digital channels", and "digital environments" is understood, for instance, as an institutional capacity, integrated into strategic planning, as is the case in the Finnish National Gallery museums and EMMA. In other cases, technology seems to be approached more pragmatically, that is, as a practical and functional means of addressing specific needs.

It is important to consider this variation because it suggests broader institutional attitudes towards innovation and the role of technology in museum work. Where technology is framed strategically, it may indicate a greater readiness to experiment with emerging systems such as AI, as well as a stronger likelihood that such tools will be embedded across multiple areas of museum activity (such as collection management, audience engagement, communication, education, accessibility). By contrast, where technology is approached mainly as a functional solution to immediate operational needs, AI may be adopted in a more limited or fragmented way, with uses tied to specific tasks rather than to a broader organisational vision.

However, it is necessary to mention that the information publicly available is limited and may not reflect the full reality. The relevance of this research lies precisely in this limited documentation, focusing on AI-related practices and the resulting need to systematically map and analyse how AI is currently being used. By identifying and categorising these applications, the study provides a foundation for developing guidelines and for assessing how museums' adoption of AI aligns with their professional and institutional responsibilities.

Moreover, the contemporary context in which this thesis is situated further justifies it. AI has expanded rapidly, alongside a corresponding increase in research examining its impacts across sectors. However, little of this appears to permeate everyday workplace discussions or practices, as professionals across fields struggle to engage with or adjust to what AI brings (Yläjärvi, 2026). Within the cultural and creative industries (CCI), AI, particularly generative AI, has attracted criticism, especially regarding its potential contribution to the precarity of creative labour in many levels. At the same time, AI is also associated with potential benefits, including improved creativity, productivity and operational efficiency, that are widely valued in public and private organisations. Museums are in a position of tension between these two demands, their

responsibility towards the creative community and society at large, and the pressure to make their operations more efficient and productive, where the use of AI can be clearly beneficial. Moreover, more than operationalising AI, museums have the potential to serve as forums where these technologies are discussed and brought to the public through their services in critical ways, as Murphy (2024) puts it:

“AI might help us sell more tickets and to have more users engage with our digital collections and might help us to run more efficient buildings. But taking a purely operational approach means missing out on a potentially greater calling, the strategic and curatorial vision needed to show the contemporary relevance of museums as a place where ideas, culture, and society are made, not simply displayed” (p.76).

Understanding how art museums navigate these tensions and respond to them can provide an understanding on how AI is currently being framed and implemented in the art museum context and help identify institutional considerations that may shape future decision-making.

Because these tensions are likely to be experienced differently depending on institutional resources and capacity, the study deliberately includes museums of different sizes, which allows an understanding of how AI-related discussions, regulation and practices are currently developing in the Finnish art museum sector as a whole. Nevertheless, it was clear that a gap exists between larger and smaller museums in relation to AI governance and practice. Although AI-related practices can be found in many museums of varying sizes, established AI governance frameworks are only present in larger institutions. By documenting practices and emerging forms of AI governance in larger museums, this thesis can inform other institutions seeking to develop their own approaches and to cultivate institutional dialogue around AI. In this way, this thesis’s contribution is primarily oriented towards smaller museums, particularly those in the very early stages of AI implementation.

Finally, to help the readers understand the terms used in this thesis, “AI applications” in art museums are understood through the examples of the consulted AI-related practices from art museum across Europe and the terminology used to describe such practices in project resources such as webpages and press releases, and in the interview materials analysed. On this basis, I developed Table 1 to clarify the multiple ways AI can be adopted in museum practices, across

both in-house operations and visitor-facing initiatives distinguishing between AI used as a tool and AI addressed as a subject.

	<b>AI as a Tool</b>	<b>AI as a Subject</b>
<b>In-House</b>	Translation and copy-editing support, Brainstorming (when far from decision-making), collection management	Institutional guidelines for AI, Brainstorming (when close to decision-making), collection development (acquisition of AI-related artwork)
<b>Visitor-Facing</b>	Chatbots, Artwork recognition (scan-and-learn), audio guides, accessibility tools	Exhibitions on AI or representing AI-related art practices, talks and debates, lectures on AI, workshops and educational programmes about AI
<b>Hybrid</b>	Online collections, AI-assisted labels and interpretation	Curated interactive AI installations

*Table 1: AI-related practices and tools according to its characteristics*

This thesis is grounded in the premise that AI in art museums is developing along two intertwined dimensions: AI as a tool (operational) and AI as a subject (curated and debated through exhibitions and public programmes). Examining both dimensions enables a clearer understanding of how museums both operationalise AI and how they position themselves in relation to these technologies.

About the term “AI” and recognising the lack of a universal definition, the term is used without adopting a single fixed designation. Taking into consideration that museums operate under several frameworks, each of which may define these technologies differently, even though these definitions might be conceptually aligned, the terminology is not always consistent, and for this reason a fixed definition was deliberately avoided. Given the exploratory multiple-case study methodology of this study, it was considered that imposing an existing definition or attempting to develop one specific to the art museum context, could unnecessarily constrain the scope of the materials gathered in ways that do not reflect how AI is encountered and negotiated in museum

work. Accordingly, “AI” is interpreted in line with how AI-related technologies are understood in the study materials and by the museum professionals interviewed.

This approach clarifies what “AI” means in the context of art museums and allows for a broader range of examples of AI applications. It is important to note though, that the materials considered for this thesis were limited to those that explicitly used the term “AI” and while this criterion ensures consistency in the analysis and avoids classifying technologies as “AI” when they were not described as such by the institutions or the interviewees, it may exclude practices that function in ways commonly associated with AI but are described using different terms. Perhaps, a good way to go around it, is the way Hajri (2024) explains it:

“Given the diverse streams of knowledge that have contributed to AI, it can be regarded as a multifaceted field that cannot be easily classified in one single category. It is not strictly a technical field, although technical disciplines are central to its development. AI is also not solely a vision for a utopian society or a social construct, even though it has implications for both. AI can therefore be understood as an umbrella concept encompassing a wide range of approaches and perspectives” (p.57).

Having clarified how “AI” and “AI applications” are understood in this study, the next step is to examine how these technologies materialise and are governed in museum practice. In the following section, a thematic framework was developed for addressing the research aims. It first explores the current and broader AI context in the EU, with particular attention to Finland. It then examines the use of AI in art museum practices, focusing on European examples, and illustrates these developments through selected applications. The discussion then situates museum AI-related practices within their wider external context by tracing EU regulatory and policy frameworks, including relevant regulations, guidelines, and recommendations. By bringing together authors’ perspectives, practice-based examples, and regulatory documents, the section shows what is expected from museums while navigating these developments, as well as the tools and resources available to support the integration and governance of AI in museum practice.

## 2. Thematic Framework

Before turning to the thematic framework, it is important to clarify why this thesis has employed a more practical than theoretical framework, as this decision reflects both the current state of the field and the purpose of this study. The first reason is because the topic remains insufficiently theorised, while the field itself is also changing constantly, which means that existing literature can lose relevance quickly. The second reason is because this research is oriented towards a practical understanding and the chosen thematic framework better suited its aims, as it allows for the systemic organisation of key patterns and issues emerging from practice and empirical evidence, while also remaining sensitive to contextual complexity. In this sense, the thematic framework should not be regarded as a substitute for theory, but rather as a methodologically appropriate choice for an applied and under-researched area of study, where identifying central themes may itself help lay the groundwork for future theoretical development.

### 2.1. Art Museums in the Era of AI

The rapid adoption of AI across industries has contributed to its increasing presence in both individual and collective activities in our society. Its benefits are well discussed, and established, including greater efficiency, increased productivity, and the automation of mundane tasks. However, despite all these advantages, as Derda et al. (2025) note, AI's "potential in the cultural sector remains underexplored" (p. 533) even as its impact on the Cultural and Creative Industries (CCI) has become increasingly evident, particularly due to the recent boom of generative AI (Amankwah-Amoah et al., 2024). This rapid advancement and adoption of AI have happened at an astonishing pace, especially in sectors that have the flexibility to adapt quickly and that are profit driven. By contrast, organisations with slower operational rhythms and a public-interest cultural mission, such as museums, face significant challenges in integrating AI into their practices.

Nevertheless, as *income-generating* entities operating within an economic environment shaped by rapidly evolving technological dynamics (Derda et al., 2025), museums find themselves in a position that demands both cautious and timely action. As institutions entrusted with the mission of "preserving, interpreting and transmitting shared cultural heritage"

(CULTAI, 2025, p. 46), museums have a crucial responsibility to adopt AI ethically and to establish robust governance frameworks that mitigate associated risks while safeguarding their core purpose (CULTAI, 2025). At the same time, they must also be able to adapt to this economic environment in order to improve their services and ensure their long-term viability. Such adaptation, however, requires substantial investment in areas such as “infrastructure, equipment and highly qualified human resources” (European Union, 2024, para. 2) as well as time, a resource growing ever scarcer in contemporary society.

This is where the central challenge for museums becomes apparent. Beyond their inherently slow planning processes and their obligation to develop sustainable long-term preservation strategies, museums often operate with limited resources (Thiel, 2024). As AI technologies advance and their implementation demands ever-greater investment, sectors with both the flexibility to adapt and the resources necessary to do so, stand in sharp contrast to the realities of the museum sector. This disparity shapes not only the pace of AI adoption in museums, but also the ways in which AI is framed, justified, and operationalised within these institutions.

While museums can benefit from AI at an operational level, it is equally important to recognise that they are primarily purpose-driven institutions (Murphy, 2024). Although AI can be a valuable tool for improving productivity and efficiency, Hajri (2024) cautions that it should be understood not only in terms of its capabilities, but also in relation to the context in which these technologies are developed and the values they may embed. This critical perspective is essential if AI adoption in museums is to be responsible, meaningful, and aligned with their institutional mission, rather than driven only by technological enthusiasm.

Museums occupy a distinctive position in the public sphere as institutions carrying a civic responsibility to engage with the most pressing questions of their time. The rapid proliferation of AI is unquestionably one such question. Beyond operationalising AI within their own practices, museums can and should serve as key spaces for public engagement with, and critical interrogation of technological developments (NEMO, 2024b; Murphy, 2024; French et.al., 2019).

This responsibility is made more urgent by the current context. Dominant narratives around AI are largely shaped by the technology industry itself, narratives that tend to frame these developments as both inevitable and inherently progressive, while systematically obscuring their environmental costs, exploitative operational structures, and other significant concerns. In an environment already vulnerable to misinformation (NEMO, 2024b), the absence of independent, research-informed public voices is not a neutral condition, rather, it allows uncritical adoption to go unchallenged.

Museums are well placed to fill this gap. Their relative independence from commercial imperatives, combined with their established role as trusted civic spaces, positions them to offer something the technology sector cannot: a disinterested forum for critical thinking about technological developments. This means not only promoting the responsible use of AI as a tool, but also actively participating in the broader societal conversation about who these technologies serve, who they harm, and who gets to decide. For the communities museums directly serve, often those most acutely affected by technological disruption, this kind of engagement is not a peripheral concern. It is central to what museums are for.

Even though it might seem like a colossal task, museums are expected to align with the frameworks guiding their practices. According to the International Council of Museums (ICOM) the 2022 museum definition, the most recent, explicitly incorporated sustainability and underscores the evolving responsibility of museums in addressing global societal, cultural, economic, and environmental challenges. In line with the UN's Sustainable Development Goals (SDGs), museums are increasingly recognized as agents of sustainable development (Legget et al., 2023), that is, as catalysts for meaningful change. This addition to the definition created new expectations among the public, policymakers, funding bodies, and other cultural stakeholders, as museums are expected to integrate ethical, environmental, and social responsibility into their practices. In relation to AI, these expectations become especially significant.

Moreover, UNESCO's Recommendation on the Ethics of Artificial Intelligence (2022) calls on museums not only to harness AI to improve their collections and broaden their audiences' access, but also to serve as active spaces for public learning about AI within their educational programmes and to promote AI literacy and digital skills training for artists and other

creative collaborators. This expands museums' role to mediate, interpret, and critically contextualise AI for the public.

One good example of such a practice is the Serpentine's Arts Technologies Programme, initiated in 2014, carrying the mission of examining the relationship between technology and society through artistic practice, research, and experimental projects. As described on their webpage: "Arts Technologies brings together people working in art, technology, law, policy, and academia to share knowledge and develop new ideas about technology and society. Areas of focus include blockchain, artificial intelligence, video games, and life sciences" (Serpentine, n.d., para 1). Part of the programme is the Creative AI Lab, initiated in 2019 and described as a space for long-term research in partnership with the King's College London Department of Digital Humanities with the aim to "speculate about systemic impacts of emerging tools, systems and infrastructures both within the arts & humanities but also, importantly, in terms of wider public interest" (Creative AI Lab, n.d., para. 1). This example is also relevant because, through this programme, Serpentine has established itself as a leading and credible voice on AI, especially as the topic became widely discussed around 2024, particularly in relation to ChatGPT and generative AI (Serpentine, 2024), collaborating with well-known contemporary artists, including Cécile B. Evans, Jenna Sutela, Ian Cheng, Pierre Huyghe, and Hito Steyerl, envisioning AI-related developments long before they became mainstream.

In 2024, the programme's focus was "on developing AI systems in conversation with artists and the public by leveraging Creative R&D and art production" (Serpentine, 2024). Part of the programmes were Holly Herndon and Mat Dryhurst's exhibition *The Call* presented in October 2024 at Serpentine North, which aimed at envisioning "the art institutions as a laboratory for development of new technologies" (Serpentine, 2024) and the release of the *Future Art Ecosystems Vol.4* in March 2024, which is the programme's annual strategic briefing that "breaks down the implications of AI for the cultural sector and offers strategies for claiming greater agency within AI-driven economies (Serpentine, 2024).

Another relevant example is the *Understanding AI* exhibition, through which Ars Electronica incorporated AI technologies into their permanent collection, aiming to let visitors

“acquire a basic knowledge, to establish their own points of reference and to get involved themselves in the questions of positioning on AI technologies” (Ars Electronica, 2019).

Developed through the Ars Electronica Futurelab, the exhibition was designed to provide a series of hands-on interactive stations, where visitors can train a network and see how it learns, or where they can become data labellers, demonstrating that humans are behind the training of AI systems and that AI can only interpret the world through what it was trained on (Ars Electronica, 2019). What is interesting about this project is the demystification of AI technologies for audiences, from how AI works technically, to who shapes it, to what its limitations look like in practice, providing an engaging and playful way to learn about it, especially for younger audiences.

The final example that I consider relevant to mention is the *intelligent.museum project* developed between 2020 and 2024 by the ZKM Center for Art and Media in collaboration with the Deutsches Museum, with the aim to “make AI technology more accessible to artists and the interested public” (ZKM, 2020). The project included a series of initiatives, including artists’ residencies where, for example, invited artists created new AI-based artworks; the talk series *Taming AI*, which covered topics like Queering AI, Decolonising AI, and Curating AI, examining the social and ethical dimensions of AI rather than only its technical aspects; workshops; a publication titled *Why AI Makes Our Museums Smarter*; and the development of AI tools for museums with publicly released, open-source code, allowing anyone to inspect, use, or critique them.

Together, these examples demonstrate the multiple ways museums can position themselves at the vanguard of AI development, not as passive adopters of technologies developed elsewhere, but active sites of innovation that contribute meaningfully to broader technological discourse. They also show that arts and culture sector can be of critical relevance in shaping how AI is understood, debated, and governed.

In the Finnish context, however, the collected materials suggest that such initiatives are largely non-existent. Exhibitions remain the most prominent way to address AI as a subject in visitor-facing or hybrid initiatives within the art museum context. That said, this is not unique to

Finland, as AI still finds its way slowly into these institutions in many European art museums and even globally.

Examples of AI becoming a subject of curatorial and institutional attention can be found in the growing number of exhibitions and museum initiatives. One example is *Neurons, Simulated Intelligence* (2020) at Centre Pompidou, presented as part of the *Mutations/Creation* platform, initiated in 2017. This platform was created to critically examine how digital technologies transform artistic creation across art, architecture, design, and museums while also exploring their broader industrial, social, political, economic, and ethical implications through exhibitions, performances, research collaborations, and public dialogue (Centre Pompidou, n.d.-c). More recently, the Centre Pompidou presented *Apophenia, Interruptions: Artists and Artificial Intelligence at Work* (2024-2025) organised in collaboration with KADIST “a non-profit contemporary art organisation that believes artists make an important contribution to a progressive society through their artwork, which often addresses key issues relevant to the present day” (KADIST, n.d.).

Other recent examples that further illustrate this interest are the Refik Anadol exhibition (2025) at the Guggenheim Museum Bilbao, part of its immersive, site-specific *in situ* exhibition series, which combines art, technology, and performance to rethink how space is experienced, and most recently the Kumu Art Museum’s *Triumph of Galatea: Art in the Age of Artificial Intelligence* (2026) exhibition, marking the museum’s 20th anniversary. This exhibition, as stated on their webpage, demonstrates Kumu’s long-standing focus on new media and technology-based art, exploring how new technologies are transforming human experience, culture, and society (Kumu, n.d.).

This curatorial attention is also evident in museum projects. A relevant example is *Recognition*, developed in collaboration between Tate Britain and Microsoft in 2016 and winner of the IK Prize 2016. The prize was an initiative launched in 2013 by the Porter Foundation, aimed at promoting digital creativity, as stated by Kerstin Mogull, Tate’s Managing Director at the time. In 2016, the specific aims were to develop a project that used AI to “explore, investigate or ‘understand’ British art from the Tate collection in a new way” (Trotman, 2016, para. 4).

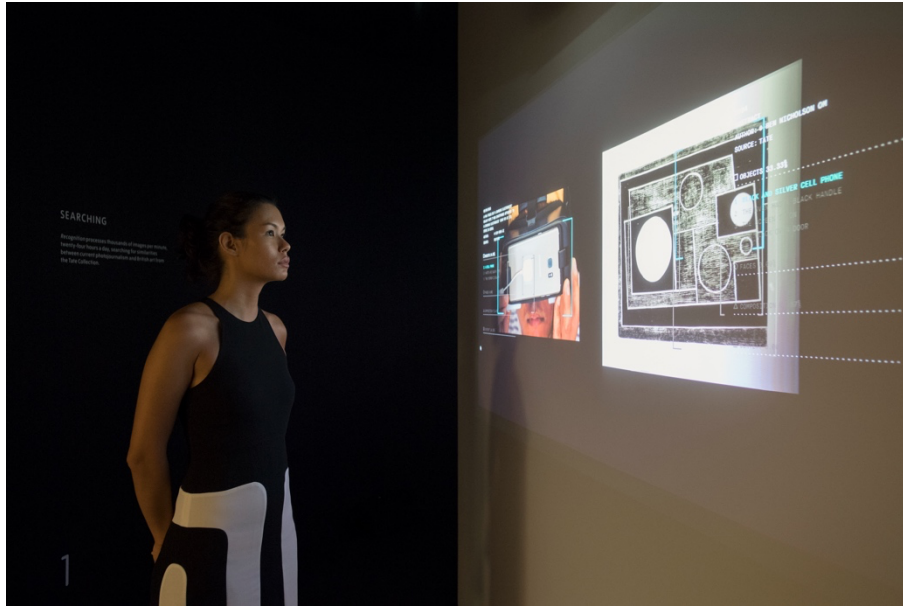


Figure 1: *Recognition*, 2016. © Fabrica and JoliBrain. Photo: © Tate (Joe Humphrys)

*Recognition* was developed by Coralie Gourguechon, Monica Lanaro, Angelo Semeraro, and Isaac Vallentin from Fabrica, a communication research centre based in Italy and part of the Benetton Group. The project aimed to connect works from Tate Britain’s archive with contemporary photographs from the global news agency Reuters, based on similarities in colour and theme (Trotman, 2016). Microsoft contributed by building the installation, which, Trotman (2016) explains, used machine learning and algorithms “to compare compositions, styles and subject matter” (para. 5).

In Finland, examples are the *ARS17 Hello World!* exhibition at Kiasma Museum of Contemporary Art in 2017, which partnered with Microsoft to offer visitors experiences like the *Emotion Loader*, developed in collaboration with Kiasma, Microsoft, Great Apes, and Wörks (Microsoft, 2017). The idea behind the project was to let the audience create artworks (animated videos) through the scanning and recognition of their emotions, using AI to recognise those emotions and generate the videos.

Another relevant example is the *In Search of the Present* (2022-2023) exhibition series curated by Arja Miller and Ingrid Orman at EMMA, which focused particularly on artificial intelligence, where artists’ work reflected visions of an innovative artmaking and brought concerns around this technology to public discussion. Part of the programme was also the *EMMA*

*Talks: Art and Artificial Intelligences* with participating artists Holly Herndon, Sougwen Chung, and Jacob Kudsk Steensen.



Figure 2: *Assembly Lines*, 2022, Sougwen Chung. Exhibited in *In Search of the Present Exhibition*, EMMA. Photo: Márcia Correia

Lastly, the most recent example found is *Type3 – On the Ruins of a New World*, an exhibition by artist Pasi Rauhala at Lahti Museum of Visual Arts Malva (Malva) (2025-2026), using AI alongside 3D animation, game engines, and theatrical environments (Malva, 2025), through which the artist offers a critical reflection on AI itself, as well as on the context from which it is being deployed and controlled.

Moreover, while using AI as a subject in exhibitions and public programmes, museums have also applied AI as a tool particularly in practices related to collection management and audience engagement functions. In collection work, AI is often used to reduce barriers to audience access to collections and to scale digitalisation. The Museo del Prado's *Augmented Reading (Lectura Aumentada)* project, implemented in 2019, illustrates how AI can be used to support interpretive access by linking artwork texts to contextual information, with a monitoring team working to maintain its accuracy. According to Javier Pantoja, then Head of the Digital Development Area, the project emerged from the need to bring the collection closer to audiences by reducing the “expert barrier” in curatorial texts. It works as a feature on the museum’s website where AI was used to scan the artworks’ texts and link them to reliable background

information (Museo del Prado, n.d.). Building on this foundation, Prado later collaborated with the Barcelona Supercomputing Centre on the project *FrAI Angelico* designed to recognise elements in Prado's pictorial collection, to identify previously unnoticed details, and discover new relations between elements through machine learning (Barcelona Supercomputing Centre, 2023).



Figure 3: *Type3 – On the Ruins of a New World*, 2026, Pasi Rauhala, Malva. Photo: Márcia Correia

Another related example is the work developed by the National Gallery of Denmark (SMK), which has, since 2017, used AI to automate processes such as image formatting and object recognition to support the preparation and online publication of collection materials. In 2019, SMK launched a new online collection, made possible by the earlier work on digitising the collection with the support of AI. The aim, again, was to make the collection more accessible and relevant to its audience. To this end, since 2016 the museum has been developing the *SMK Open* project, funded by Nordea-fonden (SMK, 2019).

From these examples, we can see how AI is used as a tool to facilitate the process of making collections accessible to audiences. However, AI can also be used directly by users to explore collection through prompting, for instance. One such example is the *Art Explorer* inspirational tool launched in 2024 by the Rijksmuseum, part of their Collection Online platform

(Charr, 2025). The Rijksmuseum has a long history of innovation; for example, it was the first museum in the world to make its collection of 800,000 objects fully available online in 2012 (Mitchell, 2024). Yet tools like this are still regarded as experimental and not fully reliable, which is one of the reasons why this tool is framed as an “inspirational tool” (Charr, 2025). This is important to note, as it shows that even highly innovative museums continue to frame AI cautiously when questions of reliability, interpretation, and authority are at stake.

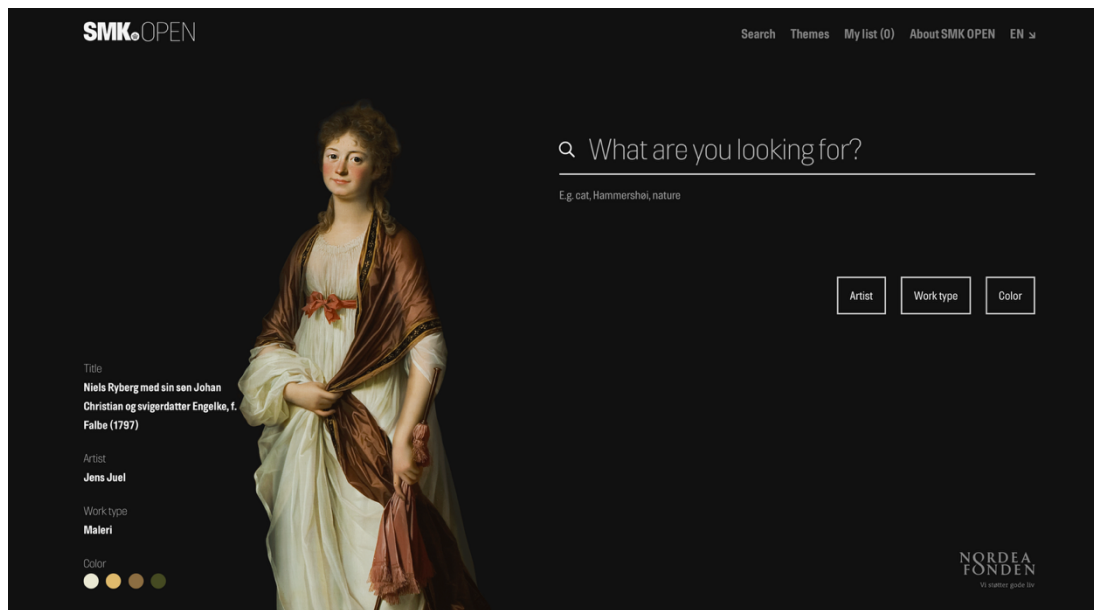


Figure 4: Screenshot of the SMK.Open, National Gallery of Denmark, capture on January 19, 2026.  
<https://open.smk.dk/en/>

In Finland, comparable examples are less common. Nevertheless, according to Virva Salama, Legal Counsel for the Finnish National Gallery, and one of this study’s interviewees, the Gallery is piloting an AI-related project in cooperation with the Finnish Heritage Agency and Sitra (part of their *Productivity for Public Sector* programme) to support collection management work. Sitra (n.d.) explains that the project, which runs from 1 September 2025 to 31 January 2027, is intended to “build and strengthen responsible AI expertise, guidelines, and operating models across Finnish museums, improving access to cultural heritage information and expanding its potential uses” (Finnish Heritage Agency, n.d., para. 2). Moreover, the project “invests in strengthening professional expertise through training programmes and guidance materials. The project is piloting new ways of working so that experts can focus on refining, interpreting, and communicating the information generated by generative AI” (Finnish Heritage

Agence, n.d., para. 3). The idea is to shift expert work towards greater impact as explain by Sitra (n.d.). According to Salama, the pilot phase at the Finnish National Gallery began in early 2026.

In audience engagement, AI, when used as a tool, is often integrated through interfaces that operate on visitors' personal devices, such as chatbots and visual recognition tools. The *Ask Mona* chatbot, integrated into museums' websites and accessible on-site via QR codes, exemplifies this usage. *Ask Mona*, which was developed by a French start-up with the same name founded in 2017 by Marion Carré and Valentin Schmite has been adopted by several major art museums in France, such as the Louvre and Centre Pompidou. Visitors can access the chatbot on their phones, photograph an artwork they wish to learn more about, and submit the image to receive information about it. At the Louvre, the experience is more oriented towards younger audiences (Ask Mona, 2025a; Ask Mona, 2025b).

According to the materials collected for this research there are no current or past documented uses of AI in audience engagement in the museums contacted. Nevertheless, some museum professionals mentioned a few experiments with AI-related visitor guide tools as well as experiments in museum education departments, which were discontinued due to a lack of resources or not meeting teams' expectations.

To better visualise the examples mentioned above, I collected them into the following table that directly mirrors the analytical framework from Table 1 of this thesis. The table is organised by year demonstrating the growing momentum of AI-related museum initiatives over time.

Institution	Country	Initiative	Year	AI Type	AI Scope	Relevance
Tate Britain	UK	Project: <i>Recognition</i>	2016	Subject	Hybrid	AI for reinterpretation of collections
SMK	Denmark	<i>SMK Open</i>	2016–	Tool	Hybrid	AI for digitalisation and online collection access
Kiasma	Finland	Exhibition: <i>ARSI7 Hello World! /</i>	2017	Both	Visitor-Facing	Early example of explicit AI in visitor-facing exhibition context in Finland

		<i>Emotional Loader</i>				
Ars Electronica	Austria	Exhibition: <i>Understanding AI</i>	2019	Subject	Visitor-Facing	Demystification of AI for general audiences
Serpentine	UK	<i>Creative AI Lab</i>	2019–	Both	Hybrid	AI for artistic experimentation and research
Museo del Prado	Spain	<i>Augmented Reading</i>	2019	Tool	Hybrid	AI for interpretive access, linking artwork text to contextual information
Centre Pompidou	France	Exhibition: <i>Neurons: Simulated Intelligence</i>	2020	Subject	Visitor-Facing	Critical curatorial engagement with AI as artistic and cultural subject
ZKM	Germany	Project: <i>Intelligent.museum</i>	2020–2024	Both	Hybrid	Open-source AI tools for museums; ethical and decolonial framing of AI
EMMA	Finland	Exhibition: <i>In Search of the Present</i>	2022–2023	Subject	Visitor-Facing	Finnish example of AI as curatorial subject; public debate around AI in art
Museo del Prado	Spain	Project: <i>FrAI Angelico</i>	2023	Tool	In-House	AI for collection recognition and discovery through machine learning
Rijksmuseum	Netherlands	<i>Art Explorer</i>	2024–	Tool	Visitor-Facing	AI for collection exploration
Centre Pompidou	France	Exhibition: <i>Apophenia: Interruptions</i>	2024–2025	Subject	Visitor-Facing	Collaborative curatorial engagement with AI as artistic and societal subject
Guggenheim Museum Bilbao	Spain	Exhibition: <i>Refik Anadol</i>	2025	Subject	Visitor-Facing	Immersive AI-based art exhibition

Malva	Finland	Exhibition: Passi Rauhala <i>Type3 – On the Ruins of a New World</i>	2025– 2026	Subject	Visitor- Facing	Most recent Finnish example: critical artistic reflection on AI
Kumu Art Museum	Estonia	Exhibition: <i>Triumph of Galatea: Art in the Age of Artificial Intelligence</i>	2026	Subject	Visitor- Facing	AI as subject focus on Kumu long-standing focus on technology-based art

Table 2: Overview of AI-Related Initiatives in International and Finnish Art Institutions

Taken together, these examples illustrate both a range of possibilities regarding AI applications in the art museum context and the disparity in AI adoption between the international context and the Finnish one. Nevertheless, as Finland is among the leading EU countries in AI development and implementation, it is expected that AI will be adopted progressively in the museum sector as well, as some of the Finnish examples above already suggest, given that museums do not operate in isolation from the broader context in which they are embedded.

However, this does not mean that this adoption in Finland will follow the same path as in the examples mentioned above, since most of those initiatives emerged in different contexts and under regulatory and institutional frameworks that are very different from those currently in place in Finland and more generally in EU.

For this reason, the following section examines the current overlapping layers of regulation, recommendations, and guidelines that shape AI adoption in the museum context. This is necessary in order to understand the specific needs and challenges associated with AI implementation today and to assess the role and implications of AI in museum practices in relation to both its impacts and current museums' responsibilities.

## 2.2. AI Governance and Regulation in the Museum Sector

To understand how museums can fulfil their demanding mission in the complex context navigated in the previous section, it is important to review the regulatory landscape in which museums operate. Network of European Museum Organisations presented, on 21 March 2024, three recommendations to policymakers, addressing the development of AI technology in museums, following the conference *Innovation and Integrity, Museums paving the way in an AI-driven society*, held on 20 March 2024, which focused on how museums can proactively shape and lead the implementation of AI rather than being directed by external forces. The three recommendations are:

“The potential of museums as partners in the development of ethical practices related to emerging technologies should be recognised. Financial resources and long-term funding must be allocated for infrastructure, equipment, and training of staff to ensure that AI is successfully applied in the Public Cultural Domain. Furthermore, a European competency hub should be established to bring together expertise and practices, knowledge and resources from experts and practitioners for the sector” (NEMO, 2024b, para. 2).

These recommendations came at a time when the European Parliament approved, on 13 March 2024, the European Union’s AI Act, which is the first comprehensive regulation of AI of its kind globally. Analysed by Culture Action Europe (CAE), three days after its approval, the Act, which does not refer to the cultural sector explicitly, as CAE points out, contains a few articles that are particularly relevant to the sector, related to *the labelling AI-generated content*, *copyright protection* and *data sources* (Culture Action Europe, 2024).

As a regulation applicable to all EU member states, the Act allows a two-year implementation period, which might prove too long given the rapid pace of AI development if adaptations to emergent AI-related technologies are not monitored. However, this framework helps to understand what can be already done within museums to implement AI in a conscious and lawful way. This is as Thiel summarises it: “AI-generated content should be labelled as such; the training sources and fine-tuning of them should be made transparent; copyrighted material should be specially marked and excluded from training processes or foundation models; and the rights of artists and photographers should be protected” (Thiel, 2024, p. 95).

In its Communication to the European Parliament and the Council of 8 October 2025, the European Commission presented the *Apply AI Strategy*, in line with the *AI Act*, aiming to accelerate the EU's adoption of AI by promoting an AI-first approach across industries and the public sector. The strategy seeks to boost AI use, especially among SMEs, to strengthen Europe's competitiveness and technological sovereignty, and to ensure that AI development remains human-centric and trustworthy.

The strategy also aims to support workforce readiness, encourages the integration of advanced AI capacities, and establishes a unified governance mechanism, including the AI Observatory, to monitor developments and guide future actions. As one of the key sectors addressed in the document is the *Cultural and creative sectors and media*, which is directly related to the museum sector, the strategy addresses the fact that all parts of the cultural and creative sectors are benefiting from AI unequally, and that many organisations struggle to adopt AI because they face several common obstacles, such as limited access to ethical, transparent, inclusive and high quality AI models, challenges in securing diverse funding sources and difficulty monetising on specialised AI models, and finally the lack of skilled human resources (European Commission, 2024). On the other hand, the sector is worried about “the unauthorised use of copyright protected content in the training of generative AI models and their outputs which may have a negative impact on cultural diversity, creativity and media plurality” (European Commission, 2024, p. 11), meaning that copyrighted artworks, books, images, music, films and other cultural content can be used in the training of generative AI models, without permission, which means that copyrighted works can be exploited by profit-driven dominant technology companies while contributing to the undermining of the diversity and originality of cultural production (European Commission, 2024).

Although the strategy addresses important risks that indeed are present in the discussion on AI in the CCI, there are two other risks addressed in different sections of the document that are also transversal concerns across other sectors, which are the labour issues linked to the substitution of staff with automated systems, and the environmental costs of AI implementation. The strategy recognises that AI can affect jobs, that some tasks might disappear and the nature of work might change, focusing mainly on solutions that imply staff training, while not mentioning any labour protections regarding technological transitions. When it comes to the environment,

the strategy acknowledges the high energy consumption of advanced AI models and systems, especially in data centres.

The Report of the Independent Expert Group on Artificial Intelligence and Culture (CULTAI) (2025), convened by UNESCO, emphasises directly the opportunities and challenges of applying AI technologies in the museum sector. In institutions that have credibility as a core foundation, AI can blur the line between human and artificial creation, which threatens trust in cultural authenticity. Moreover, concerns also include algorithmic bias, dependence on external technology providers, misuse of cultural content, and the impact on jobs, which are also stated in the document mentioned above. Therefore, in the report, the group argues that AI must be treated not only as an innovation tool but also as an ethical responsibility, requiring strong governance to protect the integrity and mission of museums in preserving and sharing humanity's cultural heritage.

On 13 November 2025, EU adopted the *Culture Compass for Europe*, which is the first EU-wide strategy for culture in nearly a decade (CAE, 2025). The strategy addresses explicitly the “transformative impact of artificial intelligence (AI)” in the cultural sectors (European Commission, 2025, para. 3.). As analysed by CAE (2025), the strategy reflects the general look at AI through an optimistic and competitive way crashing directly with the cultural sector's worries regarding large technology companies using creative works without consent or compensation, concerns not resolved by the *AI Act* and potentially exacerbated by the forthcoming *Digital Omnibus*, which may weaken key digital protections such as the GDPR and the *AI Act*. For this reason, CAE (2025) notes that although the Compass presents AI as a major opportunity, it also recognises serious copyright issues. Therefore, the strategy needs to carefully balance the interest of technology companies and the cultural sector, especially in the context of the upcoming Copyright Directive review.

Even though one can recognise the European Union's work to regulate AI, a work that has no precedents in other governments worldwide, there are still many gaps in the regulation that benefit technology companies at the expense of the protection of human rights (Schneier et al., 2025) and for this reason, it is still important to be analytical and critical when applying such regulations.

### 2.3. Building Capacity for Responsible AI in Art Museums

In an environment where laws, regulations, and recommendations appear overwhelmingly complex, one of the most critical early steps for museums implementing AI is to provide hands-on practical training for museum professionals. Such training is essential to enable a more comprehensive understanding of the increasingly intricate context in which they operate. In addition to training, collaboration with experts from diverse disciplines also becomes essential. As Üstek (2024) argues, professionals from disciplines other than the arts and humanities should work alongside museum professionals. This could be relevant, for example, in a context where companies are competing to offer “the bigger, more ethical or more powerful model” (Thiel, 2024, p. 89). For museum professionals who lack familiarity with machine learning research and development (R&D), assessing which tools are sufficiently mature and suitable for use can be challenging, thereby complicating the evaluation and ultimately the adoption of AI technologies.

As also part of these initial steps, establishing or joining an existing collaborative network, as proposed by Thiel (2024), can play an important role in facilitating knowledge exchange between institutions that are experimenting with AI. Learning from tested implementations and experimental approaches can provide valuable guidance for museum professionals as they navigate the same complexities of AI integration into their work. One example of such networks, and the first AI Network for Museums as the authors put it, was developed by Dr. Oonagh Murphy and Dr. Elena Villaespesa, as part of the project they led, titled, *The Museum + AI Network*. This was a year-long research initiative supported by the UK’s Arts and Humanities Research Council, developed between 2019 and 2020 across the UK and the USA. The aim was to promote debate, develop an ethical framework, and guide museums in using AI thoughtfully and effectively. As outputs of the project were a Museum Planning Toolkit on AI and an open database with information on projects using AI in the museum context, offering descriptions, the type of AI technology used (computer vision, chatbot, machine learning, and AI and robotics), the data used, the date, and links and references for each project, together with the name of the museum in which such project was developed.

*The Museum Planning Toolkit* provides three case studies as an illustration of the application of AI, three practical worksheets and a glossary with terms that might be difficult to

grasp for those not familiar with AI. The worksheets are organised in three sections. The first is the *AI Capabilities Framework Worksheet*, which addresses questions related to the context and resources needed for a potential AI project, for example, what tools are necessary, what type of data will be used, what are the skills the team implementing it must have. The second is an *AI Ethics Workflow Sheet* designed to question the quality of the data to be used, examining, for instance, data bias and the lack of representation on collection data. This section also raises questions related to the use of third-party AI platforms, for example, how ethical they are and whether they represent the museum's values. Finally, a *Stakeholders Management Worksheet* addresses who will benefit from such AI project.



Figure 5: *The Museum + AI Network: Museum Planning Toolkit* by Dr. Oonagh Murphy and Dr. Elena Villaespesa, 2020. <https://themuseumsai.network/toolkit/>

As a starting point, this toolkit raises important questions necessary for an informed and considered AI implementation in museums, intended to be practical and clear, and structured to suit professionals with different levels of technology knowledge. Nevertheless, the project has its limitations, as the authors recognise on the project's website. For instance, nowhere in the toolkit are the environmental implications of AI technologies addressed. Another particularity is the context in which the toolkit was developed. As the authors state, between 2019 and 2020, the period during which the project was developed, there was a growing interest in technological innovation within the museum context. Since the Covid-19 pandemic, that enthusiasm faded as

museums shifted priorities to maintain their operational stability and deliver essential services, and innovation stopped to be a priority. Moreover, the toolkit does not address the regulations and legal implications of AI, as the authors mention that these were largely absent during the project's development, both in the UK, part of EU at the time, and in the USA, which lacks crucial regulation on AI implementation even today.

Training museum teams to ask the right question, together with interdisciplinary collaboration and museum AI networks, is a necessary first step in a fast-moving and often opaque AI environment, towards establishing a robust AI framework for museums, ensuring accountability, transparency, and continuous monitoring.

Moreover, it is important to note that a range of instruments are available to support operational work. For example, the Ministry of Finance's *Guidelines on Using Generative Artificial Intelligence to Support and Assist Work in Public Administration* (2025) can be adopted by individual institutions to meet their needs and help structure day-to-day tasks, as the document itself suggests. In addition, in the international context, particularly regarding collections management, the *AI Preparedness Guidelines for Archivists* (Colavizza et al., 2026), developed within the *FLAME* project (AI For Libraries, Archives and Museums), offer valuable guidance on the use of AI in the GLAM (galleries, libraries, archives and museums) sector. Both documents are written in an accessible manner and are suitable for readers with varying levels of AI knowledge.

## **2.4. Conclusion**

Despite the growing attention to AI in international museum discourse and policy instruments encouraging AI adoption, the preliminary mapping suggests that AI-related practices in Finnish art museums remain limited in publicly available materials. This gap may exist for several reasons: adoption has progressed in less visible ways; AI-related initiatives have not been systematically documented; experiments never reach the public eye for various reasons; or there may be other factors constraining implementation. For this reason, semi-structured interviews with museum professionals were conducted to identify possible experiments and use cases absent from the gathered materials. Moreover, the interview questions were designed to understand how museum professionals themselves perceive and prioritise AI in their work, and to explore their

expectations for future developments. The questions were kept deliberately open-ended, allowing possible relevant factors shaping or constraining AI implementation to emerge organically from the responses, revealing what is more relevant from their perspective. In the next section, I explain the methodological approach adopted in this thesis in more detail.

### 3. Research Design and Methods

Given the emergent and under-researched nature of AI implementation in Finnish art museums, this study adopts a qualitative, exploratory multiple-case study design, aimed at examining the current applications of AI in Finnish art museums and identifying sector-specific needs and challenges related to its implementation. The research was developed in two phases to allow for an initial mapping of current AI-related applications, followed by their contextualisation within both the broader context and the specific art museums' sector in Finland. A qualitative approach was chosen because the aim of this study is not only to map current applications and the contexts in which they are implemented, but also to understand how museum professionals interpret AI implementation processes in the context of their work, and how they envision future applications and the capacities required to make them possible.

The research was conducted between August 2025 and March 2026 and involved museum professionals from the following Finnish art museums: Finnish National Gallery, EMMA – Espoo Museum of Modern Art, Helsinki Art Museum, Lahti Museum of Visual Arts Malva, Tampere Art Museum, Turku Art Museum, and the Sara Hildén Art Museum. These institutions were selected based on their shared public cultural mission and their representative role within the Finnish art museum context, encompassing both national-level and regional museums of varying sizes and organisational structures.

Museum professionals from 11 Finnish art museum were contacted for this study. Not all contacts resulted in usable data: some professionals did not respond, some indicated interest but were unable to allocate time for an interview, and in some cases initial interviews were conducted but the material could not be included because permission for the use of the contributions in this thesis was not subsequently confirmed.

The first phase of the research consisted of a preliminary exploratory study aimed at mapping the current state of AI implementation across the participating museums, drawing on information gathered through the museums' institutional webpages and partner organisations to identify publicly available documentation of relevant initiatives. These materials include project descriptions, press releases, and other relevant communications (Appendix 1). After collecting all publicly available information on relevant initiatives, this phase also involved short

interviews and email correspondence with museum professionals working in a range of functional areas, including curatorial, managerial, and legal roles, to gain access possible to practices unavailable in public documentation.

The interviews were conducted between 17 October and 28 November 2025 in the English language. Multiple communication formats were used in order to accommodate time constraints and participants' availability, as stated in Table 2. Live and online interviews lasted approximately 90 minutes each. Interviews were not audio-recorded, instead, detailed notes were taken during the conversations and subsequently shared with interviewees for review and approval.

As the intention of the interviews was primarily to identify current AI-related practices, a broad range of professionals were contacted to participate, whom I encouraged to suggest a colleague should they feel they were not the most suitable person to speak on the topic within their institutional context. This dynamic approach allowed for a comprehensive overview of how AI-related initiatives are currently being approached and the role professionals play when addressing AI in their specific context.

The interview questions were guided by the materials gathered on each art museum, which indicated varying levels of involvement with AI-related applications. Where AI use was visibly documented, the questions were designed to address specific practices in more detail; where no publicly available evidence of AI practices existed, the questions were kept more open to map what (if anything) was being developed. In both cases, the overall structure of the interview questions remained consistent throughout and was developed to address the main study's research questions.

Interview questions related to the first research question – How has AI been used in Finnish art museums, and which museum function has it supported? – were formulated to identify existing and pilot AI uses, particularly practices that are not publicly available, such as experimental applications, and to determine the museum functions in which AI has been most used. They also aimed to understand how museum professionals use AI in their daily work and understand AI governance within their institutional context. Questions related to the second research question – What are the organisational and contextual factors influencing the

implementation of AI in Finnish art museum practices? – aimed to examine perceived drivers and barriers, including institutional priorities and constraints affecting current and future implementation. The final interview questions addressed the third research questions – What future AI applications are anticipated by museum professionals, and what institutional capacities are required to support them? – and aimed to gather participants’ expectations regarding future applications of AI, including areas in which AI is expected to be more beneficial and areas in which participants considered AI use inappropriate. Moreover, the interviews also aimed to capture how participants conceptualise AI within their work and their general attitude towards its growing role in the museum sector.

Data collected through the interviews and email communications were analysed using thematic analysis. An inductive thematic approach was used to allow patterns and themes to emerge from the material rather than from predefined theoretical assumptions. The interviews and email communications were conducted with the authorisation and informed consent of the participants, who agreed to the use of the collected material for the purpose of this thesis. The participants are presented in the table below:

<b>Interviewee</b>	<b>Role</b>	<b>Museum Name</b>	<b>City</b>	<b>Museum Type</b>	<b>Communication Format</b>
Virva Salama	Legal Counsel	Finnish National Gallery	Helsinki	State-level public institution/Finnish National Gallery Foundation	Email Interview
Aura Vilkuna	Curator of Collections	EMMA – Espoo Museum of Modern Art	Espoo	Foundation (EMMA Art Museum Foundation)/Funded mainly by the city of Espoo	Email Interview
Aki Pohjankyrö	Curator	Helsinki Art Museum	Helsinki	Foundation/City of Helsinki collection/ Funded mainly by the city of Helsinki	Interview

Elias Outakivi	Designer	Lahti Museum of Visual Arts Malva	Lahti	Municipal/City of Lahti	Interview
Virpi Nikkari	Exhibition Manager	Tampere Art Museum	Tampere	Municipal/City of Tampere	Email Interview
Sarianne Soikkonen	Exhibition Manager	Sara Hildén Art Museum	Tampere	Municipal/Sara Hildén Foundation collection/Funded by the City of Tampere	Email Communication
Annina Sirén	Curator	Turku Art Museum	Turku	Non-profit/Turku Art Society: administration and collection ownership	Interview

*Table 3: Interviewed Museum professionals, their role, museum characteristics and communication formats*

The findings from the exploratory phase made it possible to identify recurring themes, gaps in current practices, and shared challenges across institutions. This phase also indicated the value of a more structured and practice-oriented approach to addressing AI-related needs within Finnish art museums. Building on these findings, the second phase extended the analysis through the development of an empirically grounded conceptual framework designed to explain observed patterns in current AI implementation. The framework provides an analytical tool for understanding how museums engage with AI and may support museum professionals particularly those working in smaller art museums, in critically assessing, planning, and implementing AI technologies within their institutions.

The framework was developed through the synthesis of the main themes emerging from the collected data, including perceived opportunities and limitations of AI, ethical and professional concerns, resource constraints, organisational readiness, legal considerations, and environmental impact. It explains how museums engage with AI and the conditions under which different opportunities and constraints emerge.

### **3.1. Methodological Limitations**

As with any qualitative study, the conclusions presented here are shaped by both methodological choices and my own positionality. First, the findings reflect the specific period during which the

data were collected. While I aimed to include the most relevant materials, AI-related tools and policies evolved rapidly during the study, for this reason, some updates and initiatives may therefore fall outside the dataset, and the findings should therefore be read as time-specific rather than as static. Second, the scope of the materials collected presents a further limitation. The documents analysed include only materials that explicitly mention AI, which excludes all materials that reference AI-related technologies using different terminology. Third, the study is limited to the participating museums and the insight from the museum professional interviewed at each institution.

It is important to note that only one professional from each institution was interviewed. While a larger sample would be required to develop a more comprehensive understanding of each individual case, the focus of this thesis is to examine the broader context of AI implementation in Finnish art museums, rather than to produce exhaustive case studies of specific institutions. Nevertheless, this limitation also means that the findings reflect the perspectives, priorities, and level of AI awareness associated with each interviewee's role. If different professionals from the same institutions had been interviewed, the finding might have been considerably different.

Finally, this thesis may also reflect my perspective as a researcher, including an inclination towards responsible AI-related practices and the critical assessment of associated risks. This orientation may place less emphasis on productivity- or efficiency-driven narratives and may influence how the materials are interpreted and which themes are prioritised.

## **4. Empirical Findings**

The empirical findings presented in this section are organised around the three main research questions that guided the research. Within this structure, the findings are discussed through themes identified through an inductive analysis of the interview materials. These themes reflect the most consistent and meaningful patterns identified across the materials. The themes are presented in a sequence that begins with the categorisations of current AI applications using the analytical framework introduced earlier in this thesis (Table 1), before examining how these uses are positioned within different stages of AI adoption across institutions. This section then presents the factors shaping AI implementation, including the institutional models and implementation capacity, followed by the key needs identified by interviewees. Finally, it turns to the areas of museum practice seen as most likely to benefit from AI, as well as interviewees' wishes for future applications in art museums and the related risks and ethical considerations.

Again, I would like to emphasise that the findings here presented reflect a specific moment in time. Given the rapid pace of AI development and the evolving nature of intuitional responses to it, the picture presented here should be understood as a snapshot of an ongoing process rather than a definitive account of the sector's engagement with AI.

### **4.1. Current AI Applications**

Practices identified through the interviews relate primarily to in-house operations and experimental uses and refer to specific areas that reflect the scope of AI use permitted within the art museums. The interviewees reported that generative AI is used to support a range of operational tasks, including grammar checking, translation, brainstorming, summarisation, and marketing-related tasks. The tools mentioned included Microsoft Copilot, ChatGPT, and Gemini. It was also reported that experimentation with AI within museum education departments has been discussed internally without being made public. Moreover, AI-related tools were referenced in visitor-facing interpretive materials (e.g., visitor guides), but these were discontinued due to lack of resources.

#### **4.1.1. Categorising AI Applications According to their Characteristics**

Taking Table 1 into consideration, in which different AI-related practices were categorised according to their characteristics, the activities documented in Appendix 1 and those reported in the interviews mentioned above, were categorised accordingly in order to determine the areas in which AI is most prevalent in Finnish art museums.

Drawing on the interview data, it is apparent that AI is used primarily as an in-house operational tool. Nevertheless, some institutions have taken steps that position AI as an explicit subject of organisational attention through in-house initiatives. For example, the Finnish National Gallery has established an AI framework. This type of development was not reported by other institutions, which did not indicate that AI guidelines or frameworks had been established within their institutions. AI also appears as a subject in visitor-facing activities, particularly in exhibitions in which AI is a central theme or where curators select artists who incorporate AI into their work.

The data show, therefore, that AI use in Finnish art museums is concentrated primarily in internal operations, with few established AI frameworks or guidelines. Visitor-facing applications are present but are most commonly found through exhibitions and represented artistic practices that engage with AI as a theme or a method. This suggests that, currently, AI in Finnish art museums is more commonly treated as a set of discrete tools used according to individual needs and artistic themes than as a cross-cutting institutional capacity.

#### **4.1.2. Stages of AI Adoption**

Based on the documented AI uses (Appendix 1) and the interviews data, an overview of the current state of AI adoption in art museum in Finland was developed, identifying four different stages of adoption. The stages function as an analytic typology to describe how AI is manifested in practice, ranging from informal and largely undocumented activity to institutionally governed and embedded implementation. It is important to emphasise that, in comparison with the international context, Finnish art museums are still in the early stages of AI adoption, as was mentioned frequently during the interviews. Therefore, when this study describes practices as becoming “institutionalised,” this does not imply that AI is already fully embedded across

museums practices, rather, it indicates a trajectory toward institutionalisation (e.g., allocation of resources to AI adoption, development of governance frameworks and formal guidelines). The development of this typology is motivated by the frequent characterisation of AI implementation by interviewees as “early-stage” and by the need to understand what this characterisation means across different institutions. The four stages of adoption were defined as follows:

### **Stage 1 – No Visible AI Use > Experimentation**

In Stage 1, AI is not visible, or is visible only to a very limited extent, within museum practice. Activity at this stage is characterised by light, undocumented experimentation with AI-related technologies and by in-house use of AI in staff members’ day-to-day workflows.

### **Stage 2 – Experimentation > Piloting**

In Stage 2, experimentation becomes documented and includes the uses described in Stage 1, alongside limited piloting of projects and tools.

### **Stage 3 – Piloting > Operational Adoption**

In Stage 3, AI implementation shifts from piloting towards operational adoption.

### **Stage 4 – Operational Adoption > Institutionalised**

Stage 4 describes a context in which AI is regulated and implemented through institutional guidelines, with visible and documented projects.

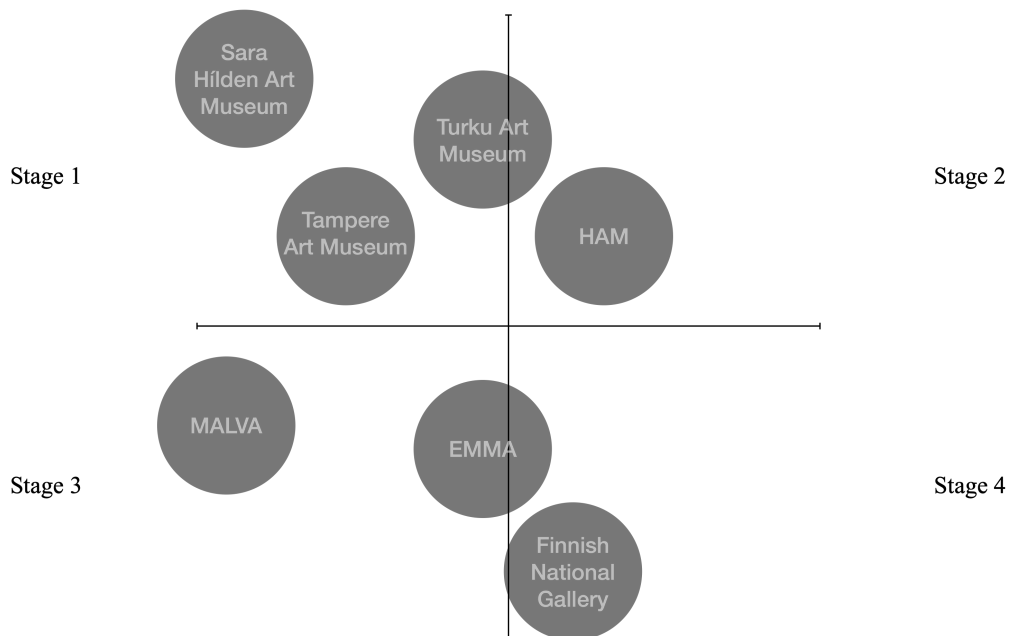


Figure 6: Museums' position on the stages of AI implementation in Finnish Context

## 4.2. Factors Influencing AI Implementation

Data collected from the interviews suggests that AI implementation in art museums is shaped by two interdependent sets of factors. First, the institutional models, referring to how museums are organised and governed. Second, implementation capacity, referring to the organisational conditions that enable or constrain AI adoption (e.g., resources, skills, data readiness).

### 4.2.1. Institutional Models

The selected art museums represent a range of institutional models within the Finnish museum sector, differing in terms of governance arrangements, funding structures, and degrees of organisational autonomy.

Starting with the Finnish National Gallery, which consist of the Atheneum Art Museum, Museum of Contemporary Art Kiasma, and Sinebrychoff Art Museum, EMMA – Espoo Museum of Modern Art, and most recently, Helsinki Art Museum<sup>1</sup>, all of these are arm's-length

<sup>1</sup> Since January 2023, Helsinki Art Museum has operated as a municipal arm's length foundation. While the city of Helsinki retains ownership of the collection and provides the core institutional grant, the foundation structure grants HAM increased operational autonomy, particularly in areas such as staffing, partnerships, and long-term planning. City of Helsinki. (2023). *HAM*

institutions operating under foundation models. This means that although publicly funded, these institutions are organisationally separated from direct municipal and state-level administration. This structural separation provides greater autonomy and flexibility in decision-making while simultaneously placing greater responsibility on the institutions themselves to define strategic priorities and manage risks. This grants these institutions a comparatively higher capacity to engage proactively with emerging technologies, including AI.

The Finnish National Gallery provides a particularly illustrative example of how this capacity is operationalised in practice. It has recently established a framework for AI governance, developed by a dedicated AI working team led by Virva Salama in relation to their current pilot project mentioned earlier in this thesis. At present, AI implementation is situated in an exploratory phase, focusing on experimentation and institutional capacity building, informed by an internal inquiry conducted as part of the efforts to understand AI implementation, which assessed current use, as well as the needs and expectations related to AI in the Finnish National Gallery context.

Municipal in-house museums, such as Lahti Museum of Visual Arts Malva, Tampere Art Museum and Sara Hildén Art Museum, operate as integral parts of their city administrations. This means that their operations are embedded within municipal structures, which tend to prioritise stability, regulatory compliance, and long-term public service provision. On one hand, this model offers financial security and institutional continuity, on the other hand, it constrains organisational agility, particularly in relation to rapid technological experimentation or the adoption of tools not yet fully understood in terms of their outputs and impact across the different areas of museum work. It is important to mention that Malva's core mission, according to Malva's Designer Elias Outakivi, is to introduce new technologies to the public through art, which makes Malva, in this context, an exception. For instance, before entering the exhibition space, visitors are immersed by an interactive artwork that uses technologies such as motion detection, artificial intelligence, and simulation algorithms by Finnish Echo Collective, which has been a permanent piece since Malva's opening in 2022, serving almost as a symbol of what the museum stands for.

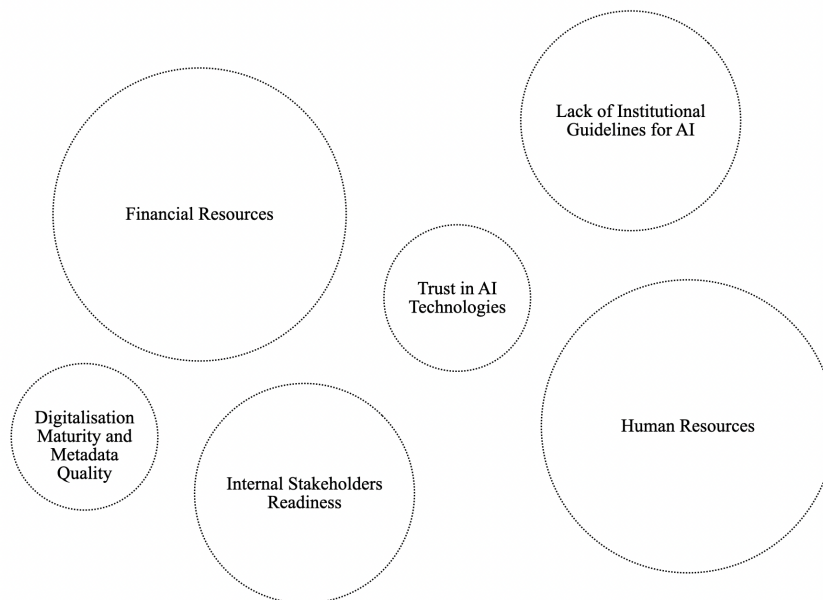
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*Helsinki Art Museum's conversion into a foundation in January 2023.* <https://www.hel.fi/en/news/ham-helsinki-art-museums-conversion-into-a-foundation-in-january-2023>.

Finally, the Turku Art Museum differs from the institutions above, as its operations are run by the private Turku Art Society (Konstföreningen i Åbo), which also owns its collection. While the City of Turku provides substantial annual funding, the museum operates autonomously. This model represents a distinct governance logic and distinctive accountability structures. Because decision-making in such institutions involves additional governance thresholds, innovation initiatives may be slowed down, redirected, or otherwise constrained, making it difficult for these types of institutions to remain flexible and responsive.

#### 4.2.2. Implementation Capacity

After gaining an understanding of the organisational and funding models of the participating museums, which emerged from the materials collected as a clear factor influencing the AI implementation, other factors connected to the implementation capacity were also mentioned during the interviews. I categorised these factors by frequency of mention, as shown in Figure 3, with larger circles representing the most frequently mentioned factors and the smaller circles the less frequently mentioned.



*Figure 7: Identified factors influencing AI implementation and their prominence in interviewees responses*

As shown in Figure 7, museum professionals most frequently identified financial and human resources as the factors exerting the greatest influence on AI implementation. This

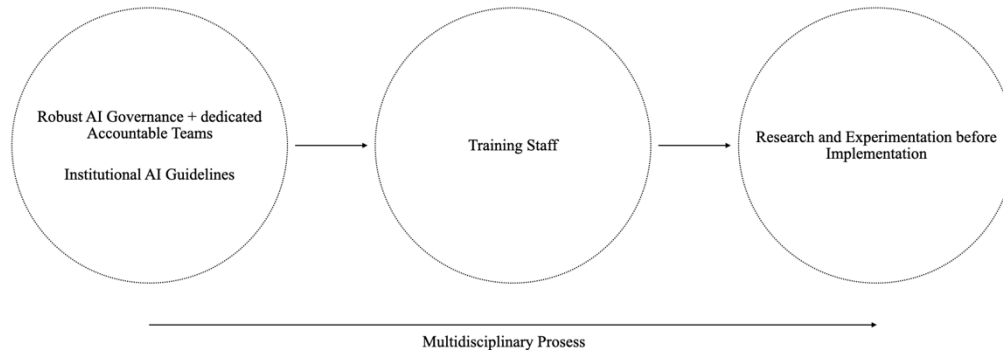
emphasis is unsurprising given the substantial reductions in cultural funding in Finland in recent years. Moreover, factors such as the lack of institutional AI guidelines and the limited readiness of internal stakeholders suggest that discussions of these technologies within museum teams remains underdeveloped, alongside a lack of practical training aligned with day-to-day museum work. These conditions may place decision-making regarding AI primarily in the hands of individual museum professionals and their personal judgement, which may not always be informed by a robust understanding of the practical implications of these technologies. Such circumstances can lead to inconsistencies in working practices and may promote a culture of scepticism between staff who engage positively with AI and those who refuse its use. Trust in AI was also mentioned as a factor in decision-making regarding these technologies.

Finally, in relation to collections work, participants highlighted the maturity of digitalisation and the quality of metadata as factors influencing the use of AI to support collection management systems and online collections.

### **4.3. Key Needs Identified**

Across the data, AI adoption in Finnish art museums appears to have started before the necessary structures were in place, with interviewees describing decentralised and practical experimentation across museum functions. This is not surprising, since AI is becoming embedded in a number of services that have great potential for supporting day-to-day workflows as well as museum services. As this potential carried many benefits but also many risks, the interviewees identified the key current needs for a responsible and effective AI adoption.

One of them is the need to move from an “informal adoption” to robust AI governance, with a dedicated multidisciplinary team and the development of institutional guidelines that translate ethical principles into concrete operational rules. A second need is the internal competence building not “abstract AI awareness”, but targeted staff training and practical workshops for museum teams. Finally, there is the need to experiment more with AI to assess feasibility and identify possible risks before implementation.



*Figure 8: Process of AI implementation according to the needs identified*

#### **4.4. Visions on Future AI Applications and Capacities**

In the interviews, participants were asked to describe what AI developments they expect see in the context of art museums in Finland and, more specifically, which AI tools or services they would like to see implemented in the museums where they work. It is important to note that the professionals interviewed represent different areas of museum work, which influenced the findings. Nevertheless, this variation in roles contributes to a broader understanding of expectations across museum functions. The data also help to understand participants' positions regarding AI, whether they view it positively or negatively and how these views shape their expressed preferences for the use of AI within their work contexts.

Moreover, when interviewees articulated their wishes, constraints in organisational capacity became evident. These wishes were frequently framed as aspirations not yet feasible in practice. In discussing desired AI applications, interviewees often linked their preferences to limitations in resources, expertise, or infrastructure, and therefore identified the capacities required to realise these wishes. Finally, when reflecting on the future of AI in Finnish art museums, participants frequently identified specific areas in which AI could provide the greatest benefit, sometimes drawing on international examples, but also describing these more broadly.

##### **4.4.1. Areas of Museum Practice Most likely to Benefit from AI**

The areas most frequently identified as those in which AI would be highly beneficial were the collections work and operational functions, such as visitor services and staff day-to-day museum

work. Interviewees reported, for example, that existing collection management systems are outdated, and that AI could improve their efficiency by reducing the associated routine documentation tasks, such as cataloguing. Many participants described cataloguing as a lengthy and monotonous process. Within visitor services, interviewees emphasised areas such as accessibility, where AI can be used to tailor information to different individual access needs, thereby making museums more inclusive across exhibitions, programmes, and publications. Moreover, AI was expected to provide additional support for everyday tasks such as those already mentioned in Section 4.1. (e.g., grammar checking, translation, brainstorming, summarisation, and marketing-related activities), but within a clear governance framework.

#### **4.4.2. Wishes for Future AI Applications in Art Museums**

The wishes expressed by the interviewees come mainly from the three areas of museum work mentioned in the previous section. First, and the most frequently mentioned, are collections and documentation, where professionals wish to see AI support the automation of routine cataloguing tasks, help to complete metadata, interpret images, and reduce the volume of collection material that is required to be digitised, ideally embedded directly within collection management systems and connected workflows. Second, in research and curatorial work, interviewees expressed a desire for a unified cross-institutional portal that brings together archives, texts, images, and other digital collections. Third, expressed wishes relate to visitor services and accessibility, including personalised AI guides, multilingual support, and automated image descriptions to better serve diverse audiences. Overall, participants expressed a desire for these applications to form part of a sector-controlled, high-quality, secure, ethical, and environmentally sustainable AI infrastructure that can be trusted and shared across the Finnish LAM sector.

#### **4.4.3. Identified Risks and Ethical Consideration of AI**

While discussing their wishes regarding the future use of AI in museum work, interviewees identified several risks that need to be addressed when considering AI in this context. These risks are directly connected to their vision for future museum practice and relate to the areas they emphasised in the previous section, nevertheless, these risks and ethical considerations connect to present practices as well. The issues raised concern data governance and the potential for dependency on private-sector actors. For instance, participants noted that sharing collection data

or operational information with external organisations can be problematic, since, once materials enter private infrastructures, it becomes difficult to guarantee control over access, reuse, and downstream processing.

Interviewees also expressed ethical concerns regarding the use of AI to support collection management, particularly in the absence of a robust monitoring mechanism to detect misleading outputs or inappropriate labelling, for example. This concern is closely linked to the technical reliability of AI. Hallucinations, for example, are a common feature of many AI systems. In museum context, which relies on credibility, unreliable cataloguing, interpretation, or visitor-facing tools could undermine institutional trustworthiness and create long-lived errors, that are difficult to detect and correct.

Finally, interviewees raised concerns from an environmental perspective. The environmental impact of AI technologies is well documented, and participants recognised the high resource intensity of these technologies, particularly in terms of energy and water consumption. This suggests that adopting AI in museums would be justifiable only if its use aligns with institutional values and environmental goals, regardless of the operational benefits AI might bring.

## 5. Discussion

### 5.1. Current AI application in Finnish Art Museums: Early-stage and Operational

Findings suggest that AI adoption in Finnish art museums is still at an early stage, is uneven in its visibility, and is concentrated mainly in the operational uses that often remain internal to the organisation rather than being publicly articulated. Here, “early-stage” refers to limited documentation of AI related practices, limited shared training on AI for staff, and uncertainty about transparency and accountability within an already existing AI experimentation process. AI is already present in everyday routines, but without internal frameworks, shared definitions of acceptable use, or systematic evaluation, with the exception of the Finnish National Gallery, which has an AI framework and an AI team in place regarding their new upcoming project, as would be expected given the size of the organisation and its model. It is also known that museum professionals have had some training to become familiar with AI, especially in the municipal museums, as such training is part of the city councils’ strategies. However, these courses were described as introductory and not focused on the museum context.

When interpreted through the four-stage typology developed in the Empirical Findings, most participating museums appear to cluster between Stage 1 (“No Visible AI Use > Experimentation”) and Stage 2 (“Experimentation > Piloting”), with only limited movement toward Stage 3 (“Piloting > Operational Adoption”). Only the Finnish National Gallery appears to show a clearer trajectory toward Stage 4, in which AI begins to be governed and embedded through formal institutional structures.

This concentration in the earlier stages of adoption is not simply a sign of resistance to innovation. As discussed in the Thematic Framework, museums differ fundamentally from profit-driven sectors in the adoption of AI. They are purpose-driven, publicly accountable institutions expected to preserve trust, act ethically, and align innovation with cultural and civic responsibilities. In this context, the fragmented and mainly operational character of AI use in Finnish art museums is not surprising. Rather than signalling simple resistance to innovation, it reflects the institutional conditions under which museums must evaluate, justify, and implement technological change.

At the same time, international examples mentioned in the Thematic Framework show that these institutional constraints do not prevent more structured forms of AI adoption. Institutions such as the Rijksmuseum and SMK have developed cross-functional AI initiatives that connect infrastructure, experimentation, and public access. Other cases, including Serpentine's Creative AI Lab, Ars Electronica's *Understanding AI* exhibition, and the ZLM's *intelligent-museum* project, further show that AI in museums can be developed not only as an operational tool, but also as a curatorial subject, a research infrastructure, and a site of public engagement. What distinguishes these examples from the Finnish context is not simply the availability of resources, but the presence of institutional vision, sustained infrastructural development, and governance frameworks that give AI adoption a coherent direction.

Within the Finnish context, the Finnish National Gallery represents the closest parallel to these international examples, and this is not coincidental. As a nationally funded organisation encompassing three major museums, it is structurally more comparable to the large, nationally supported international institutions than to the smaller municipal and foundation-based institutions that make up the rest of the participating museums in this study. Its exceptional position within the Finnish context therefore reflects differences in institutional scale and structural conditions as much as differences in institutional will or strategic vision. For this reason, comparisons between the Finnish National Gallery and the other participating museums must be made with this asymmetry in mind. More broadly, the contrast with the international examples mentioned is not merely a contrast in "advancement". Rather, it reveals that meaningful AI adoption in museums depends on the capacity to connect experimentation, governance, long-term institutional strategy, and public engagement.

This helps explain why AI in Finnish art museums currently appears in such an informal and task-oriented form. AI, and more concretely generative AI, seems to have emerged in response to museums' need to manage workload and improve operational efficiency. In this context, the question that arises is why AI is unfolding in such an informal way. One reason is that museums operate on limited resources, as Thiel (2024) argues. While AI adoption can require substantial internal resource allocation, tools that are largely free to access and provide rapid, direct support for routine tasks are particularly attractive. Such tools can assist day-to-day practices that would otherwise take longer to complete without AI. In this sense, AI is being

integrated primarily as a supportive, assistive layer, continuing a role that earlier digital tools had already performed well before the recent “AI hype”.

At the same time, when museum professionals consider using generative AI, the costs versus benefits aren't just about whether the technology performs well in terms of efficiency in their context, but they are also about how AI changes the museum as an institution depending on how close the use is from decision-making. Several hidden costs can become evident precisely because of the individualised and informal use of AI. For instance, while using AI to save time on certain tasks, the time spent checking output accuracy can take that time back, not being very efficient. If the check is not done, errors may occur, and if these become public, they can affect the museum's reputation as a trusted institution. Moreover, the use of AI without clear guidelines can jeopardise compliance with data protection frameworks, particularly when used without a full understanding of the external platforms involved. Understanding the founding principles of prominent AI tools can also be useful for assessing their suitability within the museum context.

While day-to-day use of AI is currently a daily practice, as explained above, projects involving AI have in some cases been experimented with in educational departments but never actually reached the public, according to the interview data. Nevertheless, a very visible way AI entered the art museum sector was through exhibitions and programmes, for instance, through artists working with AI or through exhibitions focused on AI as a subject, both under curatorial decision-making. According to the data collected, no assessment of impact was made within teams regarding AI in such projects.

As mentioned above, AI entered art museums before these institutions had clarified what the use of AI would mean for institutional values, what risks it might pose, or how responsibilities and resources should be allocated. Currently, AI-related practices often rely on ‘common-sense’ guidance such as “do not input sensitive information”, “double check facts” or “avoid using AI for interpretation”. The problem is that, in the absence of explicit governance, practices are uneven and depend heavily on individual experience, personal ethics, and informal peer learning. As a result, this tends to produce variation in both quality and risk exposure across teams.

From the perspective of museum practice, these variations are important to address because museums operate within a trusted environment. Audience trust is built on perceptions of credibility, care, and accountability, yet informal use of AI can introduce significant risks if it is not overseen by individuals who understand the technology. This is particularly evident with generative AI used via external platforms, which can produce highly convincing but unreliable outputs. Such risks include hallucinated facts, inappropriate phrasing, cultural insensitivity, untraceable sources, and unintentional copyright issues. Where policy is missing, the responsibility for risk management falls on individual staff members, often without sufficient time, training, or authority to make consistent decisions.

When it comes to AI-related projects, not having their impacts assessed can, again, go against institutional values and mission. For instance, when it is unclear how an artist used AI in their artworks (training data, model, degree of automation, and human labour involved), how can museums ensure that the artistic practices they are representing are aligned with values such as fair labour, consent, anti-exploitation, and respect for creators? If curators do not know the right questions to ask about the techniques behind AI-related artworks, there is a risk of endorsing and representing practices that do not align with their institutions' values.

Taken together, the findings suggest that AI in Finnish art museums is not absent, but weakly formalised, unevenly documented, and concentrated in operational use. This pattern reflects both the early stages of adoption identified in section 4 and a marked contrast with the more structured cross-function, and publicly articulated initiatives identified in the international cases discussed in section 2. This contrast should not be understood simply as a lag behind innovation, but as a symptom of the structural and institutional conditions under which Finnish museums currently operate.

As identified in the collected data, there is a need for structured discussions of AI within museum teams, including both an examination of its opportunities and its risks in the specific context of art museums. For day-to-day uses of AI, clear internal guidelines are essential to ensure consistent practices across teams and to avoid unnecessary risks that could undermine the museum's trustworthiness with audiences and stakeholders.

The Finnish Ministry of Finance published, on 30 March 2025, the “Guidelines on using generative artificial intelligence to support and assist work in public administration”, with the aim to “encourage the use of generative AI at work and improve efficiency of public sector” (Ministry of Finance Finland, 2025). In the document, the Ministry recommends that the guidelines should be adapted to the needs of each organisation. This document may support museums in addressing the issues associated with routine AI use and justifying the need to develop organisation-specific guidance for the use of generative AI.

A concrete example of such an attempt to align staff practices under shared guidelines is the efforts of Tuuli Ahlholm, Digital Heritage Expert at The Finnish Postal Museum, part of Logi in Tampere, to develop the museum’s “Rules for the Use of AI for Staff” (2025).

In communication with Ahlholm (personal communication, 2025), she explains that museum staff were already using AI in their work, for which they had received training, however, the teams had not discussed what considerations should guide the use of these tools, nor had they agreed on how to use them consistently as a team. According to Ahlholm (personal communication, 2025), the discussion took place in a context in which they had observed incidents at other museums and public bodies involving AI-generated images, and in these cases, audiences and other stakeholders had reacted negatively. Moreover, she noted that, to the best of their knowledge, no other museums in Finland had yet discussed the issue and agreed on a shared basic set of rules for the use of AI in day-to-day museum work. For this reason, they developed the idea of drafting the museum’s “Rules for Use of AI for Staff” which they considered an important step towards fulfilling their institution’s responsibility for digital culture in Finland.

This case illustrates how the use of generative AI in routine museum work can be addressed at team level to establish shared expectations and accountability. As Ahlholm suggests, clear guidelines can increase transparency and help normalise AI-supported practice by creating an environment where staff can discuss AI use openly rather than hide it. In turn, this creates a clearer basis for seeking advice and resolving uncertainty.

Beyond routine use, the findings also suggest that relatively few AI-related projects are emerging in museums. This might be for several reasons, for instance, museums, as the

professionals interviewed mentioned, are at the early stage of AI implementation, which is an obvious explanation. Yet it could also point to structural barriers, including limited funding or institutional readiness, which I will discuss in the next section. It is important to note here that this interpretation may also be constrained by the fact that only projects in which AI was mentioned explicitly were taken into account for this study, and that AI embedded in existing projects may simply not be labelled as such. Nevertheless, in projects where AI is addressed explicitly as a subject, the data suggests that little attention has been paid to evaluating the impacts of these technologies or to assessing their alignment with museum values and mission, beyond the projects' conceptual or artistic merit. One explanation for this may be that museum teams have a limited understanding of how these technologies function. AI may be treated as a "simple medium," and this may be compounded by a lack of training, or by teams lacking professional expertise beyond the arts and humanities, expertise that would allow them to assess the technical scope and implications of AI within such projects (Üstek, 2024). As suggested previously, in the case of these complex AI initiatives beyond routine use, practical frameworks can support teams in asking the right questions before, during, and after implementation. For example, the toolkit developed by Dr. Oonagh Murphy and Dr. Elena Villaespesa (2019-2020), mentioned in the thematic framework of this thesis, is a strong example of a highly practical tool that can support decision-making by translating ethical and organisational concerns into concrete project-level guidance.

Besides these measures to regulate the use of AI and evaluate its impacts in day-to-day work and projects, an additional important initial step is to learn from those who have experimented with it most extensively and share that knowledge with other professionals in the sector. As Thiel (2024) argues, participation in a collaborative AI network can provide valuable learning opportunities for professionals navigating the same complexities that AI brings to the museum context. Given the clear disparity in AI implementation among Finnish art museums, it is evident that institutions such as the Finnish National Gallery could play an important role in supporting sector-wide cooperation and knowledge exchange in the future.

Looking at the findings, museums could benefit from initial measures that help assess the impacts of and mitigate the risks associated with the use and representation of AI technologies. Although the suggestions in section 2 are not resource-intensive and can be implemented as soon

as museum teams recognise their importance, it appears that this recognition is developing slowly due to various other factors. The following section, therefore, examines these factors within the current context of Finnish art museums.

## **5.2. Resource Constraints as a Key Factor Shaping AI Adoption in Finnish Art Museums**

According to the interview data, the factor influencing the most AI adoption in art museums is resource constraints, which clearly explains what types of AI applications are emerging (low-cost, low-risk, and individualised) and the delay in the development of formal AI governance.

Although it is known that museums operate under limited resources, this condition has been worsening in Finland as government cultural budgets shrink every year, even though the museum sector has been growing in terms of visitor numbers and service revenue (NEMO, 2024). As the CEO of the Finnish Museums Association puts it:

“Museums have been record popular in Finland, but the museum boom may soon be over. Museums are now announcing a reduction in exhibitions, a reduction in opening hours and reduction in staff. The number of visitors will certainly decrease if the Government’s proposals for cuts are implemented to the extend proposed” (cited in NEMO, 2024)

One example that illustrates this situation, and a direct repercussion of the Finnish Government’s 2025 budget cuts was the announcement that the Finnish Heritage Agency was considering closing four museums (Yle, 2024). The cuts affected staff employment conditions, museum services, and projects. In a communication on the Finnish Heritage Agency website about the end of their negotiations with the Government, the Agency explicitly mentioned that technological development would be suspended, stating: “the cuts will suspend important development projects in, for examples, the use of digitalisation, especially artificial intelligence, in the cultural heritage sector” (Finnish Heritage Agency, 2024), recognising that “falling behind in development reduces the opportunities for EU funding and the introduction of new operating models and innovations in the cultural heritage sector”. (Finnish Heritage Agency, 2024)

For the museums included in this study, it is important to acknowledge these cuts, since most fall under the VOS-system – statutory government subsidies for museums and performing arts (Ministry of Education and Culture, n.d.). This context helps to explain why interviewees so frequently identified financial resources as a key factor shaping the use of AI in museum practices. As Cupore (2024) notes, museums in Finland are funded primarily by the state and municipalities, with central government providing subsidies to municipal and independent cultural institutions, intended to reduce regional disparities. The Finnish National Gallery, nevertheless, is again a notable exception, as in 2024, its budget was secured by a dedicated Act passed during the previous government term, meaning that no cuts were expected in relation to the 2025 budget proposal (Suomen Teatterit, 2024) which may account for their advanced position in the stages of AI implementation (Figure 6).

For those affected by the cuts, it is not surprising that, in a survival-oriented operating context, resources are typically allocated to sustaining core functions such as collection care, basic visitor services, and essential operations, leaving limited capacity for experimentation and innovation. This may explain why there are relatively few examples of AI being adopted in complex, end-to-end museum initiatives, while there is heavier use of low-cost, off-the-shelf AI tools to support routine workflows. At the same time, there is a clear understanding of innovation as strategically important for the sector, but again, under precarious financial conditions museums often prioritise tools that are readily available within existing software ecosystems, which do not require intensive resource allocation. This approach shapes AI adoption toward incremental uses rather than infrastructural ones, which helps to explain the delay in regulating such uses.

It is important to note that resource constraints matter not only because they limit experimentation, but because responsive AI adoption in museums is governance-intensive. As discussed in the Thematic Framework, emerging EU and international frameworks increasingly expect cultural institutions to ensure transparency, accountability, copyright compliance, and ethical considerations when applying AI. For museums, this means that adopting AI responsibly requires more than access to tools. It requires time, legal awareness, technical understanding, institutional coordination, and sustained staff training. Under conditions of financial austerity,

these enabling conditions are difficult to build, which helps explain why AI adoption remains concentrated in low-cost, low-risk, and weakly formalised uses.

The budget cuts suggest that the Finnish Government does not recognise museums' capacity to lead AI implementation in the cultural sector, a potential identified by NEMO (2024a), which argues that museums can collaborate in shaping ethical practices for emerging technologies in the cultural sector. This also suggests that museums are not understood as living places where "ideas, culture, and society are made" (Murphy, 2024), but merely as places where objects with cultural value are kept and displayed, since systematic cultural budget cuts limit most museums to their basic operational existence.

In these conditions, museums must still ensure that their practices remain aligned with their institutional mission, as set out, for example, in the ICOM's 2022 museum definition, despite the obvious challenges involved. As the CULTAI report (2025) notes, institutions whose credibility depends on public trust cannot treat AI merely as an innovation tool, because its misuse has direct reputational consequences for organisations whose authority rests on that trust. It is therefore unsurprising that trust in AI technologies emerged as one of the key factors shaping AI implementation in Finnish art museums. The interview data suggest that tools such as generative AI (LLMs) are already trusted to perform certain tasks without formal institutional oversight, which implies that they are often perceived as posing little risk to museum operations. Yet low risk does not mean no risk, and ensuring that those tools remain so requires several safeguards. This is exactly why clear institutional guidelines are essential. At the same time, the interview data indicate that in many of the participating museums, discussions around drafting such guidelines had not yet been initiated. This gap connects directly to the issue of internal stakeholder readiness. As discussed in the previous section, meaningful policy development is unlikely to emerge unless museums first open up internal conversations that demystify AI technologies and make both their potential and their risks understandable to staff who are less familiar with them.

This need for clearer institutional guidance is also reflected in recent public-sector recommendations on AI governance. For instance, as advised in the "Guidelines on Using Generative Artificial Intelligence to Support and Assist Work in Public Administration" from the

Finnish Ministry of Finance (2025), AI use should be open, transparent, and responsible, in line with the principles of good governance and the ethical obligations that apply to all official duties. In practice, this means that the use of AI must be clearly disclosed when generative AI has been used, and that its outputs should be verified before they are made public, since such systems can produce inaccurate content or reflect biases. The guidelines also emphasise safeguarding privacy, ensuring fairness and non-discrimination, and recognising that negligent use can harm an organisation's credibility, particularly when drafting materials intended for wide public attention, such as press releases. Moreover, generative AI should not be embedded into automated decision-making or operational systems without appropriate risk management and safeguards, and its use must respect copyright and licensing requirements.

While the Ministry guidelines are not binding for museums that are not part of the public sector, for instance, the ones run by foundations or associations, which are private entities, these guidelines are still relevant as best practice, especially for museums collaborating with municipalities, or using public funds, which is the case of all museums participating in this study, since they are either state- or city-owned or part of the VOS-system.

The interview data further suggest that three needs are especially urgent in this context as illustrated in Figure 8: a shift from informal AI adoption to robust governance structures, targeted competence building through practical and museum-specific training, and increased experimentation under conditions that allow institutions to assess feasibility and risk before implementation. These needs closely mirror the recommendations discussed in the Thematic Framework, particularly the emphasis on capacity building, interdisciplinary cooperation, and practical support structures for responsible AI use in museums.

A related constraint in the specific area of collection work, mentioned during the interviews, is the sector's uneven level of digitalisation and the uneven quality and interoperability of collection metadata. In Finland, most art collections have been entered into electronic collection management systems (around 90%), yet only a small share have been published online (around 15%) (Museotilasto, 2025). This gap is consequential because many high-value AI applications in art museums, such as cross-collection retrieval, depend on

standardised, reliably shareable metadata that can be aggregated and interpreted across systems (e.g. via Finna) which requires sustained investment.

In the Museum Policy Programme 2030 (2018) issued by the Ministry of Education and Culture, the Ministry outlines what “success” should look like for museums by 2030. The vision emphasises the development of infrastructure, including digitalised collections, interoperable data, shared platforms, and measurable digital services. Although the document does not refer to AI explicitly, these priorities can be interpreted as foundational capacities that may facilitate the subsequent adoption of AI tools and methods. This document was issued under the previous government, which reveals a misalignment between the decreasing investment in the cultural sector and the vision outlined in 2018, which may help to explain the delay in developing such practices in the museum sector.

As noted in the “AI Preparedness Guidelines for Archivists” (2026) by the Archives & Records Association (UK & Ireland), “AI can support archival work, but only when collections are properly prepared [...] automation is not a magic solution, and that careful preparation, documentation and governance are essential to making collections ‘AI-ready’”. Preparedness also requires addressing issues such as bias and lack of representation, which are important to take into consideration as they affect not only the quality of the digitised materials, but also the quality of the information attached to them, such as metadata, tags, and labels, which shape how collections are found and understood in digital environments. Yet, in a constrained budget context, such developments are difficult to prioritise, which tends to limit AI adoption to smaller, tactical interventions rather than long-term infrastructure development.

Taken together, the findings suggest that what appears to be “slow adoption” is not simply a matter of institutional conservatism or lack of interest. Rather, it reflects a structural condition in which museums are expected to adopt AI responsibly while lacking many of the financial, organisational, technical, and governance capacities required to do so. From this perspective, resource constraints and governance constraints are not separate issues.

In the next section, I examine the vision for AI in the context of art museums in Finland as articulated by the museum professionals interviewed. I look into the areas in which they

believe AI could be most beneficial, as well as the considerations they regard as essential to its adoption in ways that align with museums' responsibilities.

### **5.3. Future Uses of AI in Finnish Art Museums: Operational Benefits and Institutional Consideration**

According to the museum professionals interviewed, AI is regarded as a technology that is here to stay. It is most often seen as beneficial for operational tasks, particularly those related to routine workflows across different museum functions, as it may reduce the burden of labour-intensive, repetitive, or mundane work. It is also considered useful for visitor services, especially in relation to accessibility and inclusion. These perceptions are shaped by two main forces: the organisational capacity constraints (resources, expertise, and infrastructure) and sector-specific considerations tied to credibility, governance, and institutional values.

While addressing the operational benefits of AI, the interviewees generally expressed a positive view, reflecting a sense that AI could assist an even broader range of day-to-day tasks in the future. However, while these operational advantages are widely recognised, attitudes become more cautious when AI is considered for work that moves it closer to a “content creator” role, one currently occupied exclusively by human professionals. In this case, professionals tend to focus on the potential risks and often argue that certain responsibilities should remain in human hands. They draw a clear distinction between operational tasks, where AI is seen as efficient and useful, and creative or interpretative work, where they do not believe AI can produce outputs with the depth and authenticity required. This suggests that AI is not viewed as an immediate threat to the core creative functions of museum work, even though its broader influence is clearly acknowledged.

One of the most pressing issues in discussions about the future of AI in museums is the tension between what AI may come to represent and what museums stand for. This tension becomes particularly visible when considering the risks associated with these technologies and the grounds on which their use can be justified within cultural institutions. One recurring example of such a concern is the environmental impact of AI. The physical infrastructure that supports AI is resource-intensive, data centres are a prominent example, as their operations depend on substantial energy consumption and significant volumes of freshwater.

In recent years, Finland has attracted investment from major technology companies such as Microsoft and Google to build their data centres. This is often attributed to a combination of factors such as Finland's cold climate, easy access to renewable energy, the availability of abundant freshwater, and tax incentives (Reuters, 2024; Business Finland, 2025). The industry frequently frames these data centres as sustainable, pointing to impact mitigation measures such as repurposing excess heat for domestic heating. However, technology companies are not always fully transparent about their environmental impacts. The Guardian (2024), for example, reported that an analysis covering the years 2020-2022 found that the greenhouse gas emissions of large technology companies, including Microsoft and Google, were substantially higher than officially reported (O'Brien, 2024). Given the sector's tendency to promote "technology-as-solution" solutionist narratives around high-demand and opaque systems, museums should approach such claims, and the services build upon them with caution.

When museum practices and services rely on opaque, so-called "black box" systems, several risks arise, including hidden bias and discrimination, accountability gaps, unreliable yet highly convincing outputs, and security vulnerabilities. These risks stem from the fact that such AI systems can produce outputs through internal decision-making processes that are neither intelligible nor traceable, making those outputs difficult to explain and verify in a transparent manner. This matters for museums in particular, given their accountability to public trust and their obligations towards the communities they serve.

While interviewees primarily envisioned AI in terms of its operational benefits and associated risks in future museum practice, the literature suggests that museums should act not merely as "AI adopters", but as active cultural actors shaping the public understanding of it. Murphy (2024) cautions that if museums treat AI only as an operational instrument, they risk falling short of their mission towards society. This matters because AI is already reshaping the creative communities towards which art museums have responsibilities. From a strategic and curatorial perspective, museums can do far more than adopt AI into back-office functions, they can help their audiences make sense of it. As Üstek (2024) argues, museums are well-positioned to serve as spaces for critical discussion and public learning, enabling them to participate actively in contemporary debates and, in doing so, to sustain their cultural relevance. In practice,

this means engaging with AI as a cultural issue, through exhibitions, public programmes, and participatory formats.

This argument aligns with UNESCO's Recommendation on the Ethics of Artificial Intelligence adopted in November 2021 and published in 2022 titled.<sup>2</sup> With particular relevance to the museum sector, the recommendation calls on GLAM institutions to harness AI systems to improve and expand access to their online collections and libraries to wider audiences. It further encourages the development of educational programmes that engage the public in understanding AI through participatory approaches. Moreover, the recommendation also calls on museums to promote AI literacy and digital skills training for artists and other creative collaborators working within the museum ecosystem.

These recommendations, while essential, address what museums can do with AI rather than what they can do about it. AI literacy and public engagement initiatives are a necessary foundation, but they only fulfil their potential when museums treat them as platforms for critical participation rather than simply as services. This distinction matters because one positions museum as facilitators and the other positions them as active participants in shaping how AI is understood and governed.

The Serpentine's Creative AI Lab, introduced in the thematic framework of this thesis, offers a concrete example of what the latter can look like in practice. Founded in 2019, the Lab was built on a relatively simple but consequential premise: that artistic engagement with AI produces a kind of knowledge the technology industry cannot generate on its own. Grounded in open-ended artistic research rather than measurable outcomes, in the Lab it's allowed to ask questions about AI that fall outside the scope of industry-driven development. This matters particularly now, when the powerful technology industry exerts enormous influence over public understanding of AI, and when science and technology narratives dominate the conversation. The Lab's work suggests that arts and humanities perspectives are not peripheral to this debate, they are essential to it. Art museums, as institutions that hold public trust, curatorial expertise

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<sup>2</sup> Carolina Monté from the UNESCO Cultural Sector at UNESCO, and host of the UNESCO conference "The Role of Artificial Intelligence in Museums" held in Uzbekistan on 1 November 2025, described it a visionary document whose recommendations remain fully applicable today. Monté further noted that, while these recommendations are non-binding instruments, member states' governments are nonetheless expected to report to UNESCO every four years on the measures they have taken in the relevant areas.

and relationships with artists, are well positioned to host and sustain this kind of critical engagement.

As demonstrated in this section, the integration of AI into museum practice cannot be reduced to a question of technological adoption alone. At its core, it is a question of institutional values. From the environmental costs of AI infrastructure to the risks of “black box” systems and the responsibilities museums hold towards the communities they serve, the challenges are as ethical as they are operational. The UNESCO Recommendation provides a normative foundation for navigating these challenges, but translating its principles into meaningful museum practice requires more than policy alignment, it demands a fundamental rethinking of what museums are for, and who they serve, in an AI-shaped world.

This study suggests that Finnish art museums are struggling to act on this recommendation, for the reasons discussed in the previous section. Some of this difficulty may reflect genuine commitment to values such as transparency, accountability, and public responsibility as there is still uncertainty about how to engage with AI, but good intentions alone are not enough. Without the knowledge, resources, and institutional capacity to engage with AI thoughtfully, those values cannot be translated into meaningful practice.

There may also be a more fundamental issue, such as the lack of awareness of why bringing AI into public discussion matters now, especially for the creative communities these museums are meant to support and represent. This, I would argue, is the more pressing problem. Art museums are, by their very nature, spaces where difficult cultural conversations should be taking place, and AI is one of the most urgent issues of our time. It raises questions not only about technology itself, but also about authorship, ethics, labour, power, and the future of human creativity. If art museums do not engage with these questions publicly, they risk narrowing their role precisely at a moment when their critical and civic function is most needed.

## 6. Conclusions

This thesis examined the current applications of AI in the practices of art museums in Finland by addressing three main research questions concerning current uses, implementation factors, and anticipated future developments. The aim was to provide an overview of how AI is currently used in the art museum context, rather than focusing on specific application cases. This approach was considered necessary because, at the beginning of the study, the state of AI implementation in Finnish art museums was unclear due to the limited research available in this area within the Finnish context and the limited publicly available materials.

### 6.1. Key Findings

In response to the research questions, the study finds that AI is already part of everyday workflows within museum functions, while it has also been experimented with in projects in different museum departments. However, these practices are characterised here as early-stage, since they have been mainly staff-initiated without formal governance across different areas of museum work. This suggests that Finnish art museums are at a stage of determining how AI implementation should be organised, governed, and aligned with institutional values.

Moreover, the most visible way AI appears in museums' initiatives is through exhibitions and public programmes. In exhibition contexts, AI appears either as an explicit theme or as a medium or method forming part of the artistic process. In either case, whether in exhibitions about AI or those representing artists who incorporate AI into their practices, curatorial selection is never neutral, it functions as an institutional position that shapes how AI is made intelligible and meaningful for audiences and how it is opened to critical interpretation. This is important because it shows that museums are not merely "displaying" AI but actively mediating its cultural meaning.

This study also identified key factors influencing museums' AI implementation, factors that are not only in the hands of museum professionals but also those of policymakers, that must recognise museums as playing an important role in the cultural sector and society more broadly, as living environments for public dialogue, learning, and critical thinking. Within museum teams, there is a need to start the discussion on AI technologies within museum practices and to

invest in hands-on, museum-specific training on AI. Such training would help staff identify useful tools, understand their limitations, and ask the right question when using AI in workflows or projects. In this sense, the challenge is not the concrete technicality of the adoption, but the creating of institutional conditions that enable informed, responsible, and sustainable use.

The professionals interviewed predict that AI will inevitably become part of museum practices, mentioned mainly from the operational perspective, again in workflows, but also in audience engagement tools and customer services, for example. Nevertheless, beyond operationalising AI, museums must also respond to the broader social and cultural disruptions these technologies have created. Because AI is reshaping how knowledge, creativity, labour, and communication are understood in society, museums cannot remain outside this discussion if they wish to stay relevant in contemporary public life. This can be done through exhibitions, but more importantly through public programmes, engaging their local communities in learning activities, creative laboratories, talks, panels, seminars, and others participatory formats, as exemplified by the Serpentine's Creative AI Lab, Ars Electronica's *Understanding AI* exhibition and many others.

## **6.2. Key Contributions**

By combining mapping of current applications with an analysis of implementation conditions, this thesis offers both an empirical overview and an interpretive framework for understanding AI adoption in the Finnish art museum context. In practice, this study identifies core needs and expectations regarding AI in the art museum context and draws on the literature and examples of AI applications in art museums to advance a framework for making AI work across different dimensions of museum work in alignment with their responsibilities towards society.

Taken together, the findings suggest that the central challenge for Finnish art museums now is not primarily the selection of efficient AI tools, but the development of institutional conditions for responsible and sustainable use. This involves investment in staff capacity building and the establishment of shared guidelines and governance frameworks capable of translating ethical commitments and regulatory requirements into everyday practice because as Hajri (2024) argues:

“Technology is not neutral, and AI systems are susceptible to biases and inaccuracies. It is therefore imperative for us to critically evaluate algorithmic decisions, consider the broader social context, and ensure AI aligns with ethical principles. Let us not forget that behind the algorithms, numbers, and datapoints lie the intricacies of humanity, which cannot be reduced to a mathematical formula” (p.59)

This ethical imperative, however, extends beyond the internal governance of museum institutions. It implicates the broader context in which AI, as a technology and a social force, is being defined. Finnish art museums have largely occupied a passive position in this regard, engaging with AI on operational and curatorial terms while ceding the wider conversation to technology industry actors. Yet the analysis presented here suggests that this position is neither inevitable nor sustainable. The question is not simply whether museums adopt AI, but whether they can shape what AI becomes.

Art museums are uniquely positioned to intervene at this level. Unlike technology companies, they hold a public mission, an institutional obligation to serve and represent society rather than commercial markets. This is important because the dominant narratives around AI have been produced mainly by commercial actors, with arts and humanities perspectives largely absent from the infrastructural and policy conversations where the direction of technology is being decided. Finnish art museums, as public-mission institutions embedded in a society navigating these changes, have both the legitimacy and the responsibility to contest this imbalance.

### **6.3. Final Reflections**

Reflecting on the thematic framework, the empirical findings confirm the idea that art museums, as public-interest institutions operating under resource constraints, are adopting AI in ways that are shaped by those limitations. Across all participating institutions, except for the Finnish National Gallery to some extent, lack of time, funding, infrastructure, and staff capacity emerged as the most immediate obstacles contributing to the fragmented and unregulated use of AI across museum areas. As Thiel (2024) argues, AI’s rapid, experimental development logic sits uneasily with museum processes oriented toward caution, preservation, and long-term sustainability. The

challenge, then, lies not only in doing more with less, but in reconciling fundamentally different organisational tempos and priorities.

Moreover, AI in museums should not be seen only as a practical tool, even though this is still how it is mostly approached. Derda et al. (2025) argue that AI is already changing organisations by speeding up routine tasks, information processing, and efficiency, including in areas such as collections, visitor data, and others. In the Finnish art museums studied, however, it is still used mainly for internal and efficiency-related purposes. There is little sign of broader experimentation. This supports Murphy's (2024) concern that museums risk narrowing their role when AI is understood mainly in instrumental terms. It also suggests that Finnish art museums have not yet moved toward the wider institutional change described by Üstek (2024), since AI remains marginal and cross-disciplinary expertise is not systematically integrated.

There is also a clear gap between frameworks, such as UNESCO's *Recommendation on the ethics of artificial intelligence* (2022), and current AI-related practices in Finnish art museums. This suggests that the challenge is not only the available instruments themselves, but also how broad principles can be applied in museum practice. Responsible AI adoption therefore depends not only on "rules", but also on training, experimentation, and shared learning across institutions and disciplines.

As this thesis was being finalised, The Finnish Heritage Agency published a news release on March 19, 2026 titled *Museoalalla vahva kiinnostus tekoälyn käyttöön kokoelmatyössä – Museoviraston ja Kansallisgallerian yhteishankkeessa kehitetään museoiden yhteistä tekoälyosaamista* (*There is a strong interest across the museum sector in using artificial intelligence in collection work – a joint project by the Finnish Heritage Agency and the National Gallery is developing shared AI expertise for museums*), which further supports one of the central arguments of this thesis. As discussed earlier in the Thematic Framework, a joint AI-related project involving the Finnish National Gallery, the Finnish Heritage Agency and Sitra is currently under development. The findings presented in this March publication indicate that AI is already used in many of the 34 museums surveyed across Finland, mainly in low-risk experimental tasks such as translation and summarisation, while its use in core collections work remains limited. Museum professionals identified clear benefits, including time savings and

improved information retrieval, but they also expressed concerns related to data protection, ethics, and the continued need for human expertise and review. Moreover, many professionals reported that their AI-related skills are low, showing strong motivation to learn. For this reason, professionals manifested a need for practical tools, guidance on data preparation, and training to support safe and effective use of AI. In this sense, the publication does not add new empirical material to this thesis, but it does reinforce its central conclusion: that meaningful adoption of AI in museums depends not only on the availability of technology, but also on shared capacity building and structured guidance.

#### **6.4. Future Research**

Looking ahead, future research could extend this work through case-based, practice-oriented studies across art museums, using participatory formats such as workshops and discussions as part of the research methodology. Such an approach could help identify concrete AI use cases, assess museum professionals' expectations and needs, and inform the development of responsible governance frameworks within each participating museum. Rather than just mapping what is happening, future research could adopt a collaborative methodology that works alongside museum teams to co-develop AI guidelines, governance frameworks, or training programmes. One example of this kind of practice-oriented approach is *The Museum + AI Network* by Dr. Oonagh Murphy and Dr. Elena Villaespesa discussed in the thematic framework. This would make it possible to move beyond documenting institutional responses to AI and toward supporting museums in shaping approaches that are aligned with their missions, values, and professional responsibilities.

#### **6.5. Research Limitations**

Finally, it is important to acknowledge the limitations of this study. Its scope is restricted to the participating museum professionals who were interviewed and to the publicly available materials about their institutions and practices that explicitly use the term "AI". While these sources capture informed perspectives, they may not reflect all roles or practices within the Finnish museum sector. Another limitation is that the analysis relies primarily on interviewees' self-reported practices rather than direct observations of workflows, which may lead to an under- or overestimation of the extent of AI use. Moreover, this study was conducted from an outsider's

perspective, which may have affected the interpretation of sector-specific norms and context. The findings also reflect a particular time window during which AI tools, and internal and external policies, are evolving rapidly. Accordingly, the conclusions should be understood as context specific. Lastly, because I am not proficient in the Finnish-language, and this study examines a Finnish case, Finnish-language materials may have been absent from this thesis's sources, as searching primarily in English may have limited the range of documents identified and analysed.

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## Appendix 1

Analysed publicly available materials related to AI applications in the participating museums

Museum	Project Name	Year	Main Partners	Tech	Type	Relevant Links
Finnish National Gallery	Tekoäly kulttuuriperinnön palveluksessa (AI in the service of cultural heritage)	2025-2027	Sitra Finnish Heritage Agency	Image recognition	AI as a tools/In-House	<a href="https://www.sitra.fi/rahoitettu-hanke/tekoaly-kulttuuriperinnon-palveluksessa/">https://www.sitra.fi/rahoitettu-hanke/tekoaly-kulttuuriperinnon-palveluksessa/</a>
EMMA	Draped – Art of Printed Fabrics	2025-2027	Aalto University's New Landscapes in Textile Design Project	Generative AI	AI as a subject/Visitor-facing	<a href="https://emmamuseum.fi/en/draped-mobile-guide/">https://emmamuseum.fi/en/draped-mobile-guide/</a> <a href="https://emmamuseum.fi/en/draped-art-of-printed-fabrics-wraps-emmas-exhibition-space-in-a-tapestry-of-patterns/">https://emmamuseum.fi/en/draped-art-of-printed-fabrics-wraps-emmas-exhibition-space-in-a-tapestry-of-patterns/</a>
Malva	Pasi Rauhala: Type3 – On the Ruins of a New World	2025-2026	Lähitapiola Vellamo	AI (type not defined), 3D animation, game engines	AI as a subject/Visitor-facing	<a href="https://www.malvamuseo.fi/en/exhibitions/pasi-rauhala-type3-on-the-ruins-of-a-new-world/">https://www.malvamuseo.fi/en/exhibitions/pasi-rauhala-type3-on-the-ruins-of-a-new-world/</a>
Tampere Art Museum	Surrealism – A Collective Dream	2025	Institut für Kulturaustausch	In Marco Brambilla artwork only (AI type not defined)	AI as a subject/Visitor-facing	<a href="https://www.tampereentaidemuseo.fi/en/exhibitions/surrealism-a-collective-dream/">https://www.tampereentaidemuseo.fi/en/exhibitions/surrealism-a-collective-dream/</a>
Kiasma	Milky Way Tour	2024-2025	-	AI (type not defined)	AI as a subject/Visitor-facing	<a href="https://kiasma.fi/en/exhibitions/milky-way-tour/">https://kiasma.fi/en/exhibitions/milky-way-tour/</a>

HAM/ Helsinki Biennale	Ludovica Schaerf, Pepe Ballesteros Zapata, Valentine Bernasconi, Iacopo Neri and Dario Negueruela del Castillo: Re- imagining the city of Helsinki	2023	-	Computer Vision/Patt ern Recognitio n	AI as a subject/Hybrid	<a href="https://arxiv.org/html/2306.03753v4">https://arxiv.org/html/2306.03753v4</a>
HAM	Janu Ruscica: Begin. Again	2023	Helsinki Upper Secondary School of Languages in Myllypuro	Algorithmi c artificial- intelligence verse generator	AI as a subject/Hybrid	<a href="https://www.hamhelsinki.fi/en/indoor-sculptures/begin-again/">https://www.hamhelsinki.fi/en/indoor-sculptures/begin-again/</a>
EMMA	In Search of the Present	2022- 2023	Aalto University, Espoo City Theatre and Helsinki festival	AI (type not defined)	AI as a subject/Visitor -facing	<a href="https://emmamuseum.fi/en/exhibitions/in-search-of-the-present-22/">https://emmamuseum.fi/en/exhibitions/in-search-of-the-present-22/</a>
EMMA	EMMA Talks: Art and Artificial Intelligences	2022		AI (general)	AI as a subject/Visitor -facing	<a href="https://emmamuseum.fi/en/event/emma-talks-art-and-artificial-intelligences/">https://emmamuseum.fi/en/event/emma-talks-art-and-artificial-intelligences/</a>
Malva	Permanent Interactive Artwork – Ahto: Finnish Ekho Collective	2022		Computer Vision/Neu ral– Network	AI as a subject/Visitor -facing	<a href="https://www.malvamuseo.fi/en/uncategorized-en/interactive-artwork-by-finnish-ekho-collective-permanently-on-display-in-malva/">https://www.malvamuseo.fi/en/uncategorized-en/interactive-artwork-by-finnish-ekho-collective-permanently-on-display-in-malva/</a>
EMMA	Anni Puolakka: Diamond	2020		AI Chatbot	AI as a subject/Visitor -facing	<a href="https://emmamuseum.fi/en/exhibitions/">https://emmamuseum.fi/en/exhibitions/</a>

	Belly on <i>Touch</i> <i>Exhibition</i>					<a href="https://www.anni-puolakka.com/anni-puolakka-diamond-belly/">ns/anni-puolakka-diamond-belly/</a>
Kiasma	Emotional Loader	2017	Microsoft	Computer Vision	AI as subject and a tool/Visitor- facing	<a href="https://news.microsoft.com/europe/2017/08/11/this-ai-powered-exhibit-creates-art-with-your-facial-expressions-and-emotions/">https://news.microsoft.com/europe/2017/08/11/this-ai-powered-exhibit-creates-art-with-your-facial-expressions-and-emotions/</a>  <a href="https://kiasma.fi/en/exhibitions/ars-17/">https://kiasma.fi/en/exhibitions/ars-17/</a>