



LIVING ARTS
INTERNATIONAL

AN AI OF OUR OWN

Innovating AI for
Diverse Ways of Knowing

Landscape Mapping
Research Report and Reflections

A project of Living Arts International, conducted and written by Gillian Rhodes
Questions and comments on this report may be directed to info@livingartsinternational.org

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1. INTRODUCTION

“An AI of Our Own: Innovating AI to Include Diverse Ways of Knowing,” (AAOO) is an initiative designed by Living Arts International in an attempt to leverage the potential and exponential growth in AI technology. Rather than trying to fit the diverse heritage of the global south into a system which was not built for it, we propose to create “an AI of our own.” We seek to create adaptive and responsive systems wherein cultural heritage is preserved in a way that goes beyond traditional wikis, written datasets, and western methodologies of knowing and documenting. We will leverage existing technological expertise and advancements of the global north but invite them to go beyond and envision a multi-cultural, diverse, and inclusive digital future.

As part of the first phase of the project, LAI commissioned an internal mapping research project within the team in order to:

- 1 Understand the existing landscape of digital heritage projects in Africa and Asia¹ and the place/positioning of AAOO within it;
- 2 Identify African and Asian leaders in the tech and culture spheres; and
- 3 Connect with the identified projects and profiles to start building a consortium of key stakeholders for future phases.

AAOO incorporates four phases of activities; Connect, Nurture, Fund, and Co-Create. This research falls under the first phase of activities, “Connect,” and sets the groundwork for building the consortium for future activities. We use the word “consortium” here rather than “network” as we wish to emphasize the action of coming together to create. We envision this as an initially small group of individuals and companies that can grow in later phases.

In addition to mapping projects and people, included in the research was a brief exploration of the existing discourse on responsible and ethical AI, a field which is evolving at a lightning-fast pace. Research papers emerge daily on addressing and identifying biases in AI models, the lack of data from non-western societies, questions of data governance, and many other related themes. Over the summer alone, many new AI regulations laws came into force, such as the new EU AI Act, along with multiple charters and documents on the need to center ethical concerns in AI advancements.² However, not all countries are pushing for AI regulation – at the end of September, California governor Gavin Newsom vetoed a bill largely passed by the state congress on AI safety and regulation.³ While many digital heritage and cultural projects advance at a fairly methodical pace, the landscaping research highlights the need to move quickly to ensure cultural facilitators, policymakers, and artists are able to meaningfully engage with the global dialogue.

The findings of the research show that the methodology and vision of AAOO is both needed and novel but highlight the challenges and complications of the sphere that could create barriers in developing

¹ While we feel that the long term aim of the project is relevant across the global south as well as minority cultures in the global north (such as Indigenous communities in North America), the initial project focuses on Africa and Asia (including west Asia) for reasons of feasibility in scope, existing networks, and strategic connection with previous LAI initiatives. As such, the research only focused on these regions.

² “AI Act | Shaping Europe’s Digital Future.”

³ Allyn, “California Gov. Newsom Vetoes AI Safety Bill That Divided Silicon Valley : NPR.”

sustainable solutions that truly reach the impact at which the project aims. They also underline the truly dynamic nature of the field at present, and both the importance and the urgency of creating and gathering a large community of voices to work together to address the issues of representation and bias in AI models, particularly concerning cultural heritage in the Global South.

2. METHODOLOGY AND SCOPE

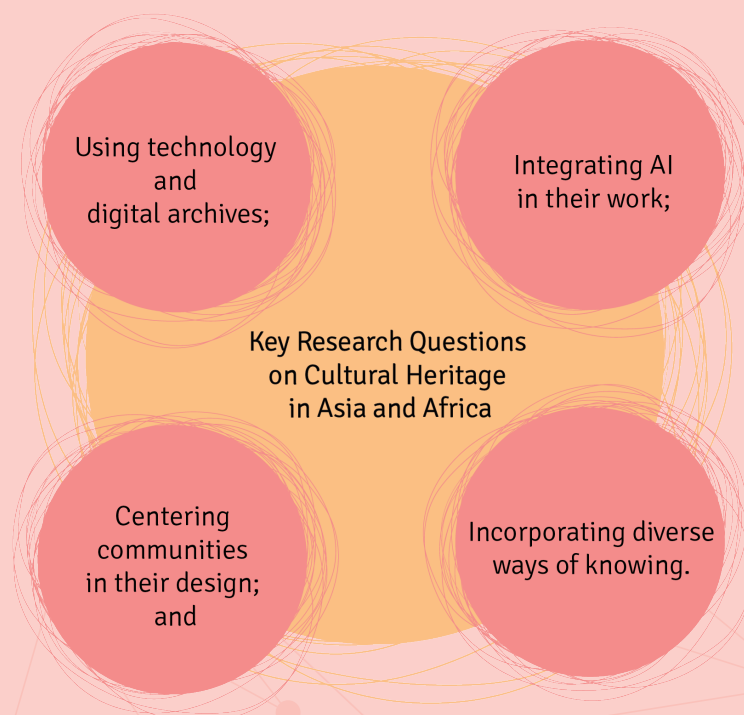
In addressing the identified objectives above, we worked on three separate tracks: existing projects on digital heritage⁴ in Africa and Asia (Asia being defined as east, south, southeast, and west Asia, also known as MENA), leading African and Asian voices in the separate spheres of culture and technology, and ethical approaches to AI. While the former two tracks did at times overlap, they were treated separately. The third track was not initially in our scope, but it was added as the research progressed in order to understand the existing frameworks, methodologies, and approaches for ethical AI.

Identifying existing projects on digital heritage

The first track was primarily conducted through desk research and drawing on information from our existing networks.

We did not intend at the outset, nor did we attempt throughout the research, to create an exhaustive list of projects, and quite certainly, our final list is only a sampling. It was rather our intention to understand the general landscape of digital heritage in the target regions, such that we could analyze where and how AAOO fit into it, where the opportunities and gaps might be, and what challenges we can anticipate.

The driving questions that shaped the research were to understand in what ways cultural heritage projects in Asia and Africa are:

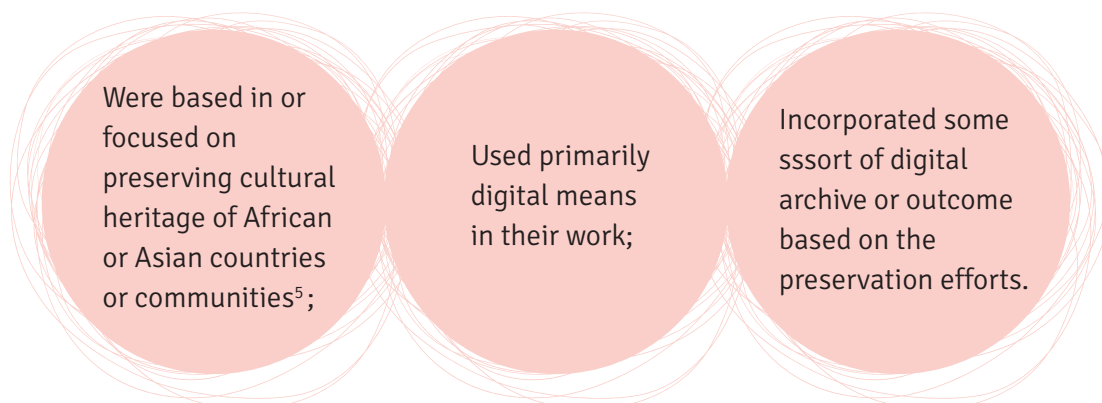


⁴ Digital heritage here refers to the process of recording, documenting, presenting, or sharing tangible or intangible cultural heritage through digital means.

The first two were meant to validate/investigate findings from earlier consultations that suggested that the separate spheres of culture and technology do not have a great deal of overlap, and there is a certain suspicion or reluctance particularly in the field of cultural heritage connected with AI and its implications. The positive collaboration of technology and culture is a key element of AAOO's vision and as such, we wanted to see if there were existing examples or best practices.

The latter two were meant to explore potential areas where AAOO can learn or adopt from existing projects, as these are central ways of working that the project aims to integrate.

In the initial stages, projects were included that:



Following this basic scan, we adjusted our focus towards projects that had strong community involvement in their efforts (in any aspect, from design and mission to involvement in data collection and beyond), or projects that used technology in unique or innovative ways (such as the method of data collection or the outcome).

For each project, we gathered the following data:

Project Name	Founder/Team members	Connection to community
Website	Project goal or activity	Access details to archives/scans /data
Country or region	Founding year	Notes on tech used
Type (Govt, Private, NGO, etc)	Duration of project	Funders

⁵While we focused only on projects that were carried out or focused on countries or communities in Africa or Asia, the majority of the projects were funded by global north entities – we did not restrict this aspect as it restricted the scope of the mapped projects too greatly.

Leading voices in technology and cultural heritage

We defined a ‘leading voice’ as individuals:



- With some platform, either unofficially (such as a successful online newsletter) or officially (such as connected with UNESCO’s AI ethics committee);
- Founders of innovative or unique organizations or companies in technology or cultural heritage (such as African Digital Heritage or African-Centric AI); or
- Advocates or outspoken voices on the topics of technology and cultural heritage as it specifically relates to the African or Asian context.

We prioritized individuals with African or Asian origin and living in the region, though we also included people based abroad.

As with the first track, our methodology was primarily desk research and drawing on our network. We reached out via email to those whose views were particularly connected with themes of ethical AI, community involvement, data rights, and prioritization of local narratives and conducted short 20-30 minute interviews with those who replied to understand their work, their views on AI as it connects to culture and heritage, and their feedback on AAOO as a concept. The content and learnings of these calls have fed into the analysis and reflections detailed below. We also later shared the draft of this report with these individuals and have incorporated their feedback in the final version.

Ethical approaches to AI

For this track, we expanded our focus beyond Africa and Asia to explore the broader discourse on ethical AI, though we prioritized researchers from the global south or representing global south views. Sources of information included scholarly papers, research reports, websites, articles, substack newsletters, and more. Although it was added later to the scope, this research greatly enriched our understanding of the landscape and allowed us to ground our findings.

Scope and Limitations:

In addition to the stated scope above, there are other intentional and unintentional limitations in scope that may have affected our findings and interpretations.

- One limitation was a network bias, as we were able to find more projects in the countries that we were familiar with or had existing contacts. The research was conducted entirely in English, which may have prevented us from finding more local, community-based projects. Additionally, the nature of the ‘mapping,’ or selecting a sample rather than an exhaustive list required some arbitrary decisions on including projects: for example, if we already had 2-3 projects from a certain country, we did not necessarily dig deeper into that particular country and could have missed potential projects.
- One aspect of the project which we did not include in our research was the technical underpinnings of AI models, be it Large Language Models (LLMs), Natural Language Processing (NLP), or others. While our research team did have one session with a scholar studying algorithmic mitigation of bias⁶, we did not deeply dive into the actual inner workings of the technology. Our lack of deep technical knowledge could have limited our ability to find AI focused projects that are working technically to address bias and/or other ways of responding to the identified issues.
- Areas which we chose not to incorporate were the Cultural Tourism sector, digital humanities programs or initiatives led by universities (such as collections within specific departments), or government-led policy decisions. This was based on the available resources within the research team and the time frame of the research, however, excluding these certainly limited the scope and could have potentially skewed the findings.

⁶ Sayed, “Bias Mitigation Using Functional Inequalities for Regularization.”

3. FINDINGS

Landscape Mapping

Our final sampling included 95 projects. They represented a diverse sampling of projects, from documentation of cultural monuments, virtual museums, apps, games, podcasts, repositories, and beyond. The findings below are organized according to our main questions around how people are using technology, integration of AI, community centering, and incorporating diverse ways of knowing.

Projects with a regional or multiple country focus

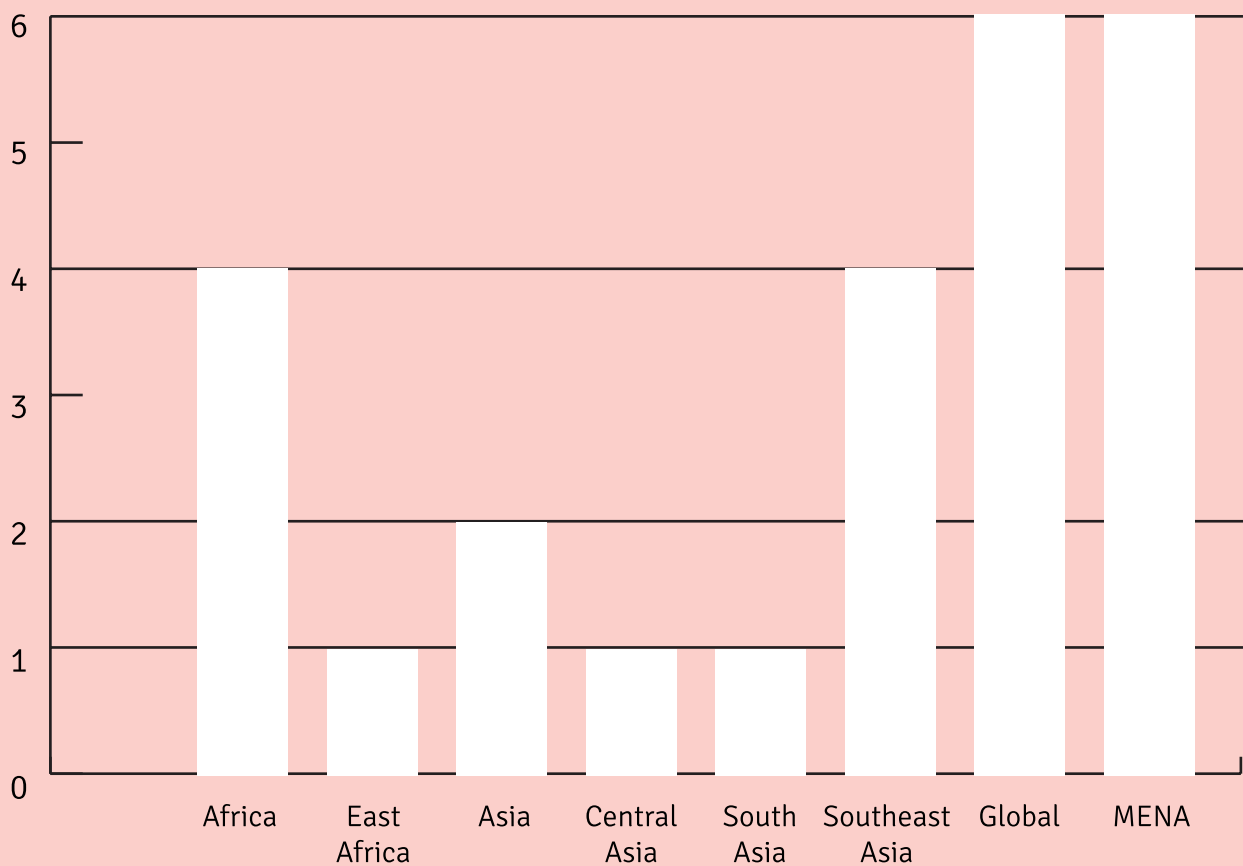


Figure 1 Geographic focus of projects with a regional or multi country focus (26.5% of total projects)

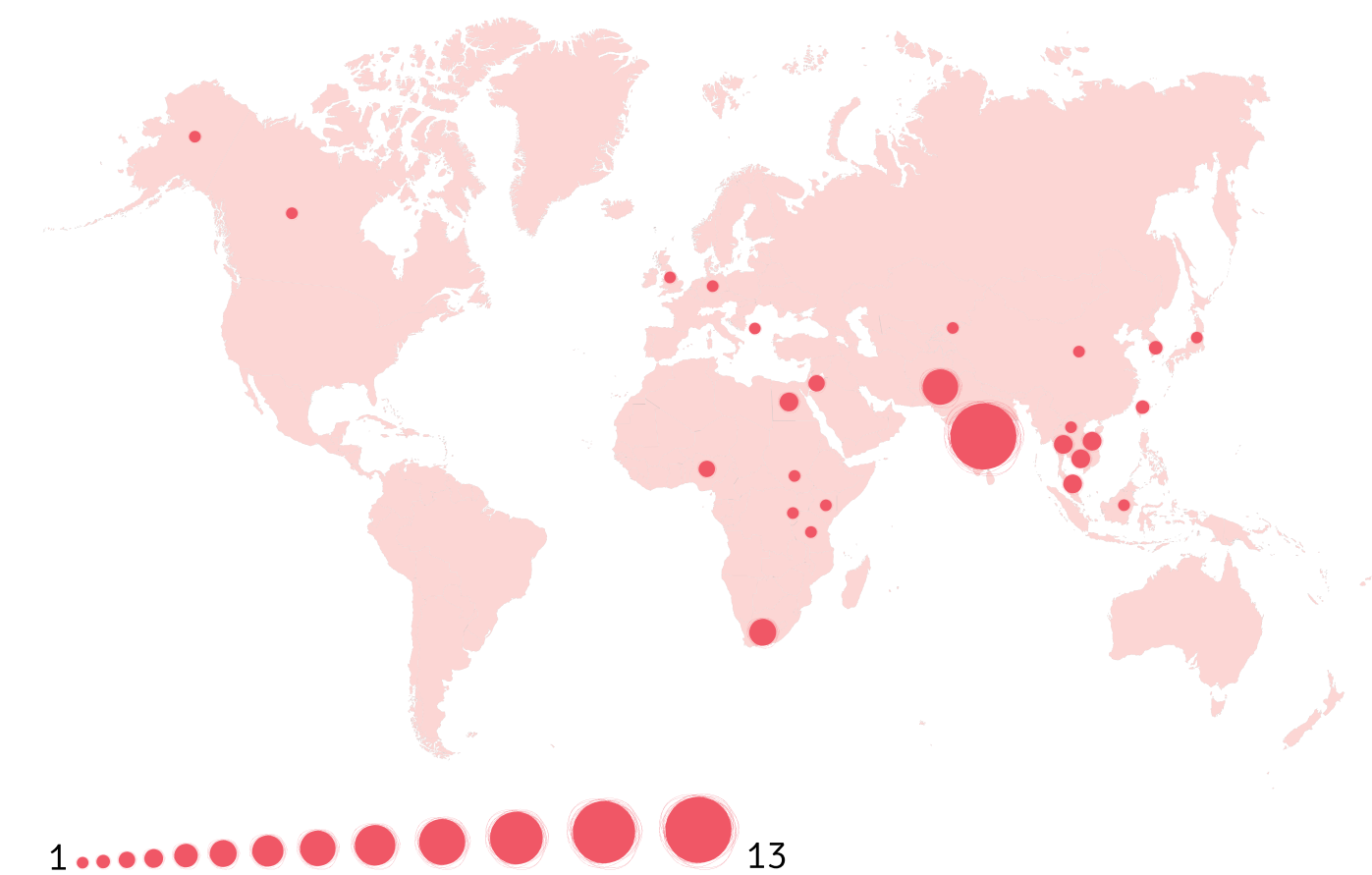
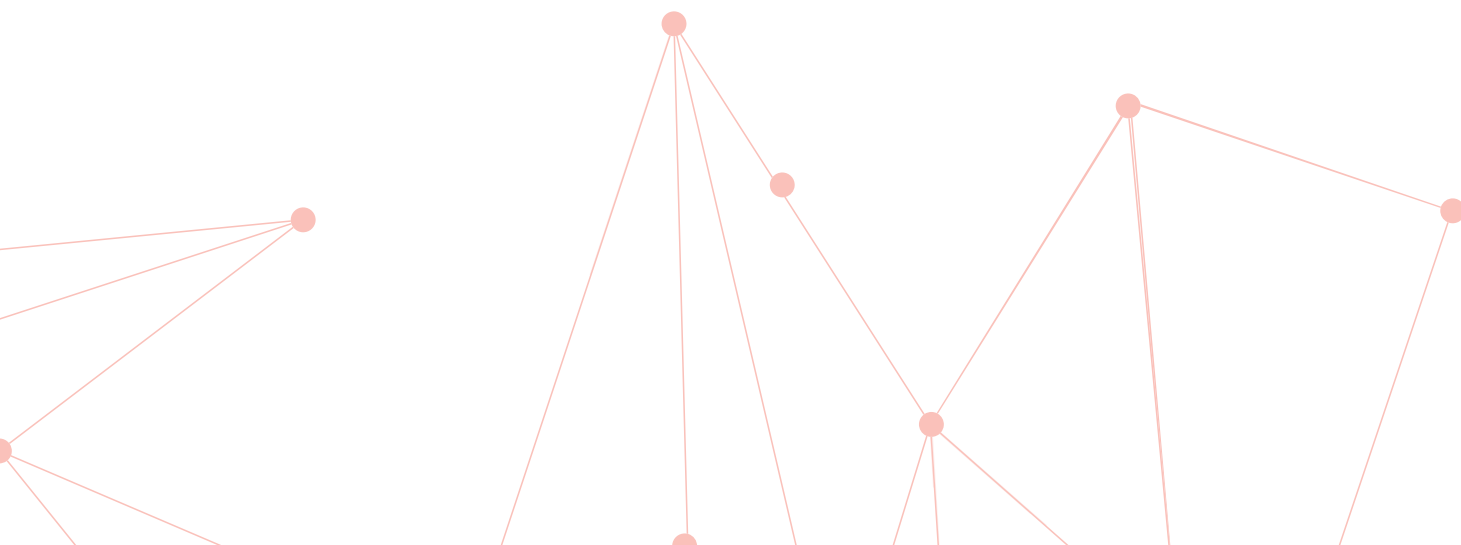


Figure 2 Locations of identified projects with a singular country focus.



How are people using technology?

The projects fell into a few basic categories, the majority of which were repositories or online archives around a place or a culture/country, projects to digitize existing resources, monuments, or documents, virtual replicas or experiences of places or museums, training programs for preserving heritage through digital means. Additionally, there were projects meant to address the policy for preserving heritage digitally, projects specifically geared towards social justice (such as making data accessible or restitution of heritage), and projects to establish communities to share and disseminate cultural data. The remaining were exhibitions, games, and apps.

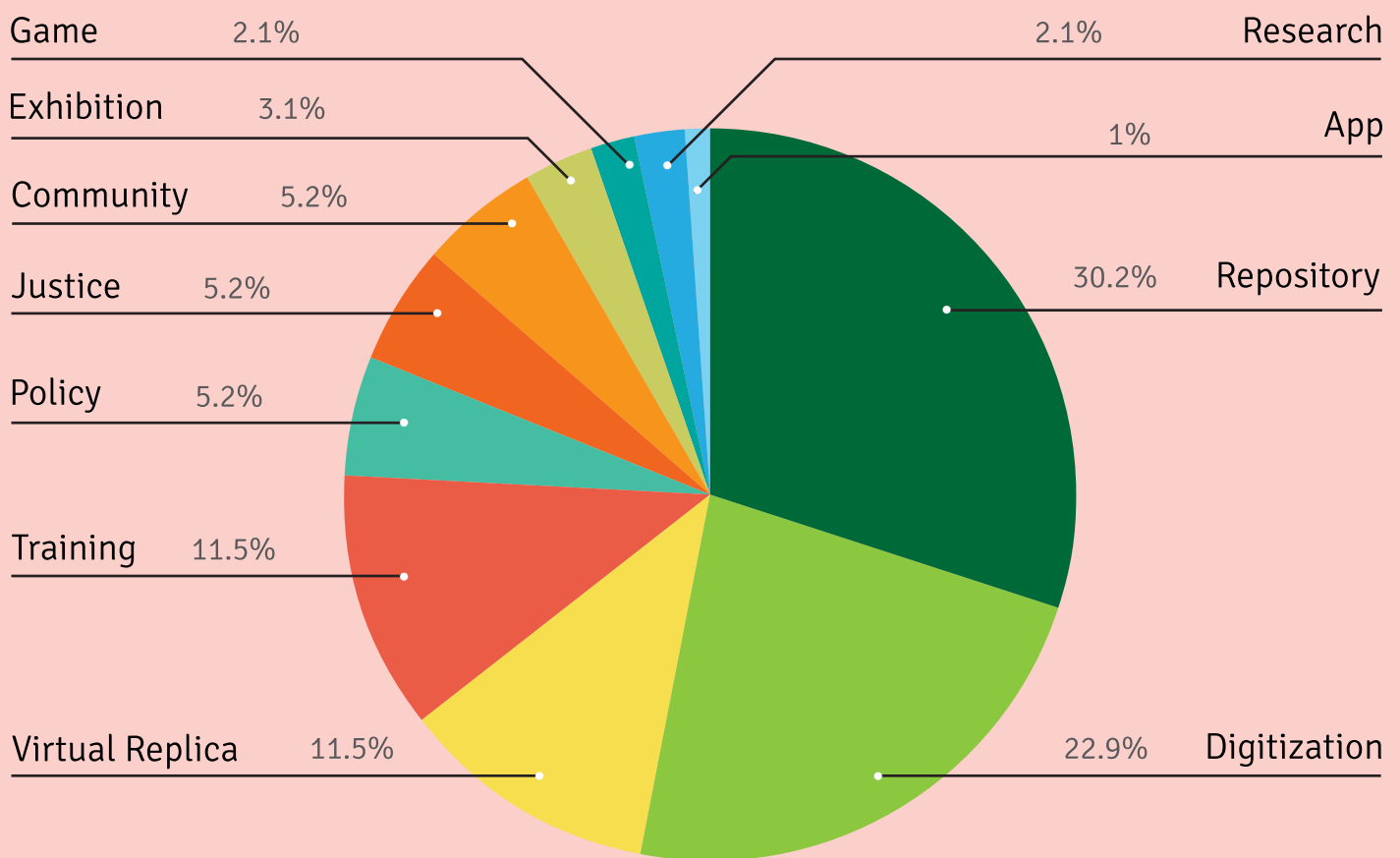
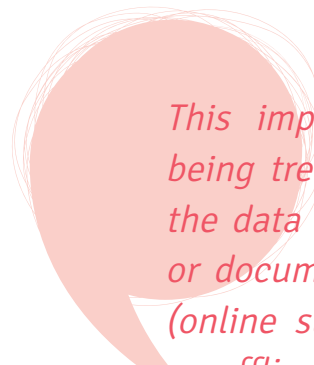


Figure 3 Types of projects identified based on category

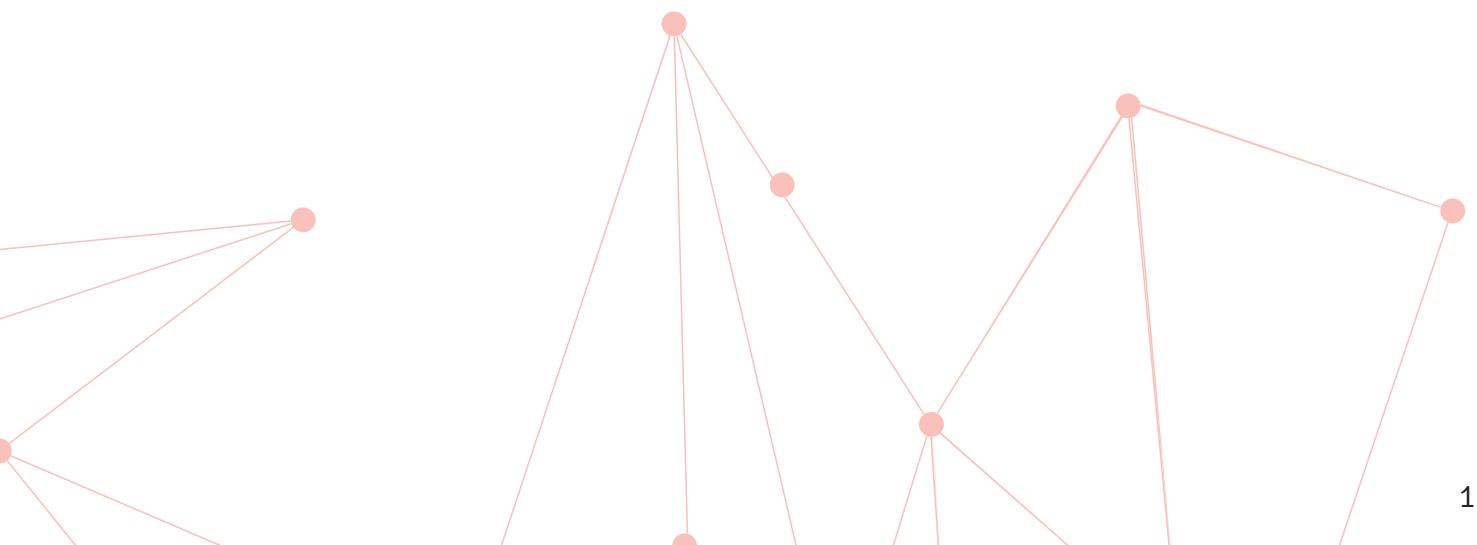
Replicating physical archives in digital form

53% of mapped projects were categorized as “repositories” or “digitization,” represented almost exclusively as online websites or archives where the collected data was gathered, sometimes as publicly accessible archives. An additional 11.5% were “virtual replicas,” which follows a similar process, only the data is then made into a virtual experience rather than maintained in a digital library format.



This implies that digital heritage is still being treated similarly to physical archives: the data is gathered in some way (recorded or documented), input into a storage space (online such as a website or cloud server, or offline such as a private digital record), and made available either to the public, to researchers, or to paying customers.

The projects differ only in how the data is gathered, where the records are housed, and who is allowed to access. Of the projects that focused on a tangible outcome (excluding those aimed at policy, training, and justice), this model represented 84% of the mapped projects. The dominance of this analog approach to archive even in the digital realm is interesting. Just 5% of projects encouraged ongoing contributions through the creation and nurture of communities. 17% of projects resulted in an interactive outcome, primarily virtual replicas where viewers can explore in an immersive digital environment.



Integration of AI: Low adoption of AI in digital heritage work

We did not find digital heritage projects that explicitly integrate AI models into their work. In the introduction calls, we did speak to two individuals using AI in their own projects related to heritage, which will be outlined briefly in the case studies section. The calls further clarified that some digital heritage organizations are still on the fence about AI or are just starting to discuss how and where it might be integrated. Their concerns track with those expressed by cultural heritage experts in earlier consultations.

Community-centering:

One of the criteria we were particularly interested in identifying was how projects are involving communities, as community centering is a key way of working for AAOO. We defined community focus as projects in which the community whose heritage is being documented are an integral part of the process, from the design to the outcome.

Access to information:

We found that the majority of projects were ‘community-focused’ in that they provide public access to information, though this does not necessarily mean there is an active accessibility in outreach or language. Assuming community involvement or participation in these archives also assumes digital access, digital literacy, and, for the most part, fluency enough in English to navigate. These projects made up 40% of the total identified.

Input and data sourcing:

Of those that included communities more actively, 27% were at the input stage for data sourcing, and an additional 13% were training programs for community members to learn how to document/contribute to data sourcing. However, we were not able to verify on the input stage if communities were involved in the final decisions on what to include, how the information was presented, etc. An additional 4% of mapped projects involved communities in ongoing activities or dialogues, such as the Virtual Museum of Images and Sound in India which hosts conferences and workshops.

Overall community direction and benefit:

14% of projects were categorized as ‘overall’ community engagement, which meant that the project was an initiative of the community or by community members, was focused on sourcing data from the community, and had an end objective that benefit the community. For example, Disanketnoi in Vietnam is designed specifically for the community to directly contribute to and benefit from the preservation of cultural heritage, while Pusaka in Malaysia was created at the behest of communities with the goal of creating a comprehensive documentary archive of traditional performing arts and strengthening the viability of these traditions at the community level. An interesting note was that many of these overall projects include a specific commercial purposes in the output stage, such as to sell traditional crafts or to popularize their culture (example, GeraiOA in Malaysia).

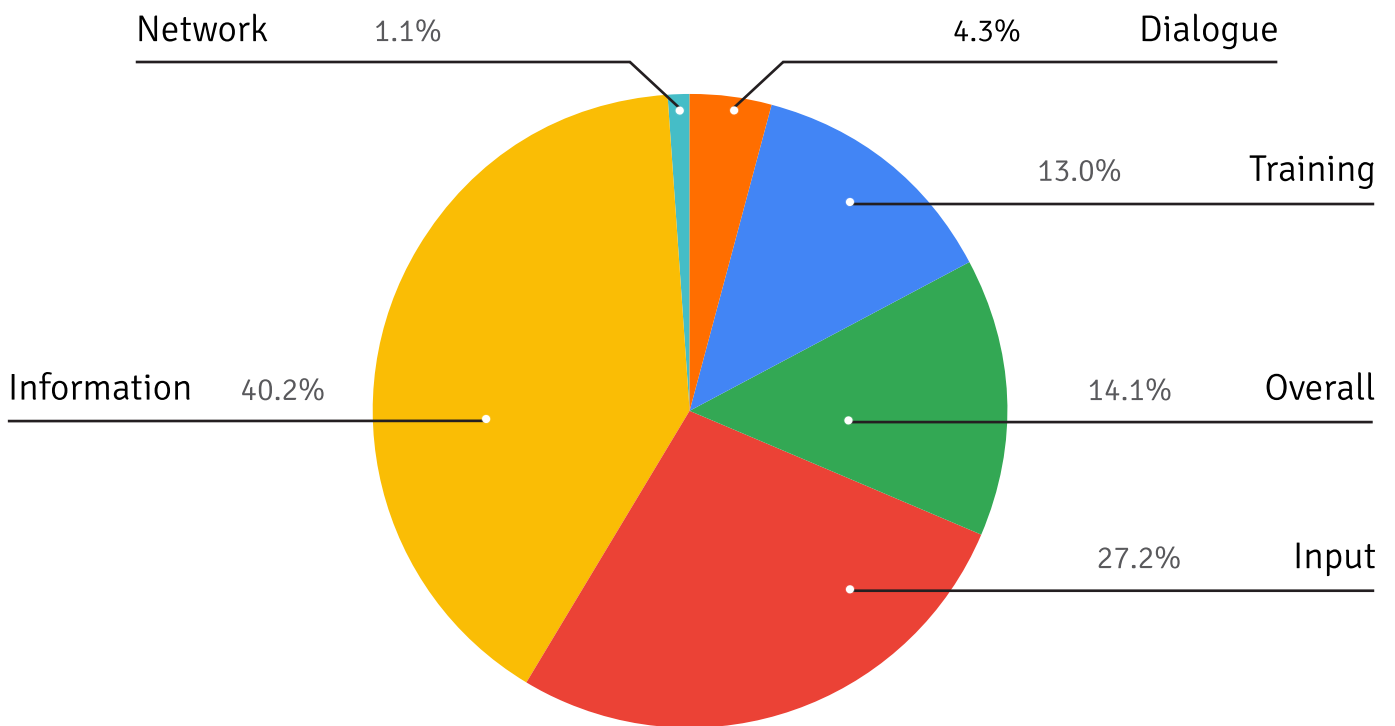
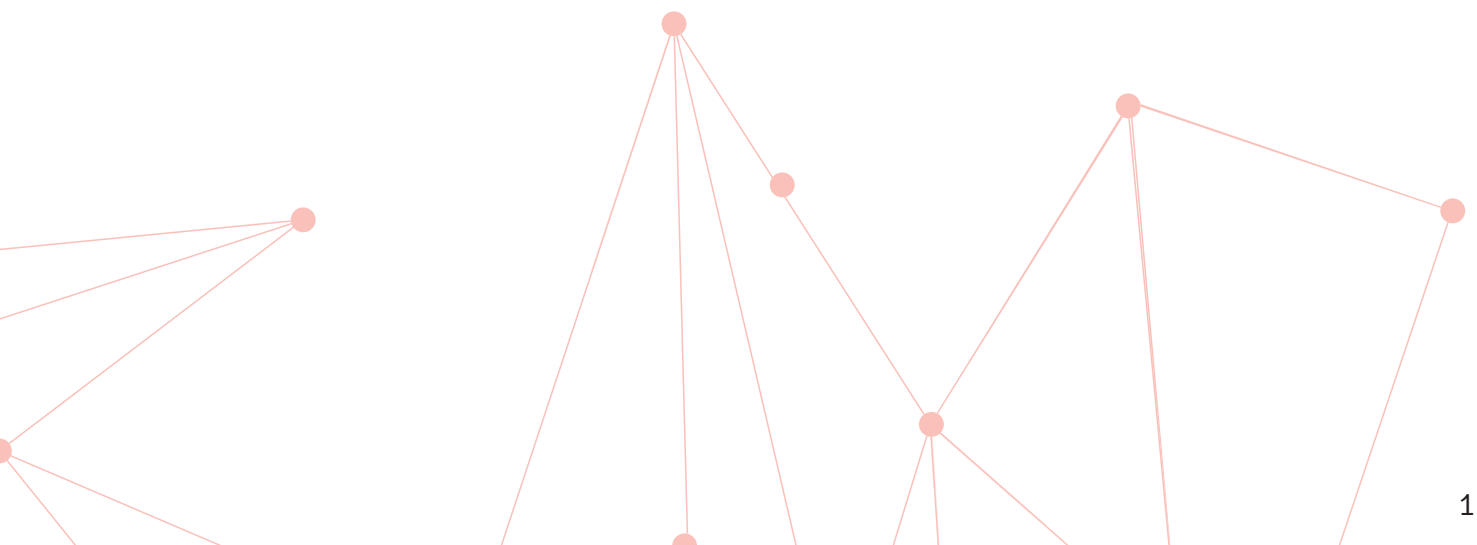


Figure 4 Types of community involvement

Diverse ways of knowing:

Reliance on documentation

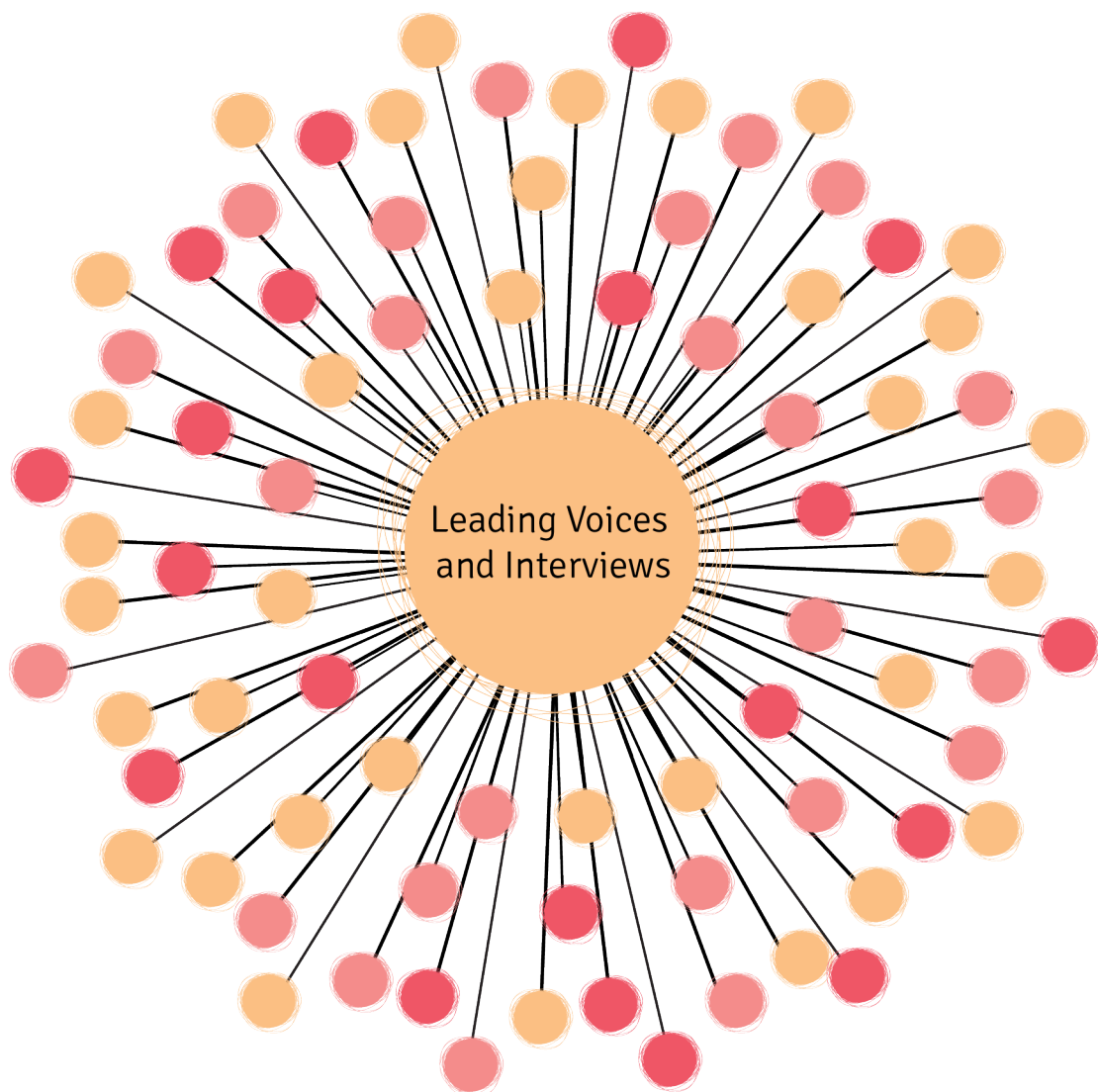
As mentioned above, the majority of identified projects were repositories or collections of data, and in these we found a mix of audio, video, visual, and text-based archives. However, by and large we did not find projects that went beyond this documentation focus, whether in design or output, maintaining fairly standard archiving methods and approaches. Just 4% focused on the collection of stories and folklore.



Leading Voices and Interviews

We identified 99 individuals or companies corresponding to our criteria of individuals connected to some platform or in a leadership position with relation to culture or technology, founders of innovative or unique organizations or companies in technology or cultural heritage, or advocates or outspoken voices on the topics of technology and cultural heritage as it specifically relates to the African or Asian context. We conducted a total of 18 short interviews with 23 people.

The process of searching for individuals also led us to identify 6 AI companies incorporating themes of ethical AI or centering of local narratives as well as numerous individuals advocating for more locally-centered and inclusive AI.



AI companies and community-centering

Many of the AI-related projects had a strong community focus, such as working with communities to identify issues, including them in the testing process, and deploying the solution directly for them – for example, Sunbird AI in Uganda focusing on social impact or Kissan AI in India working directly with farmers. However, these did not necessarily have connections to culture.

Dominance of language in AI companies

Of those projects identified connected with AI, they were all focused on language, such as indigenous languages or low-resources languages, and creating LLMs or its cousin, SLMs (Small Language Models). Some LLMs were designed with specific uses such as agriculture but retained the LLM model at its core.

Interest in collaboration between the tech and cultural spheres

During the interviews, we were able to explore more deeply the connection between the technology and culture approach, which clearly revealed the existing gap but also uncovered a general interest and willingness on both sides to collaborate with the other.

Adoption of AI practices in Culture Forthcoming

The interviews revealed that many organizations are considering AI, and recent reports on AI and culture suggest that digital heritage will soon see more integration with generative AI and other tools. Further, the University of Hull (UK) is about to start an 18-month project with a fairly similar concept note and project structure, with the plan to approach three indigenous communities in Burkina Faso, most of which with little digital exposure or literacy, and work with them to create AI models for digital heritage⁷. As such, due to the fast-paced nature of the AI world and an increased global focus on AI ethics, we expect that while AAOO currently represents a novel approach and stands alone in the digital heritage sphere, it most likely won't do so for long.



⁷“Digital Literacy and Community-Led Data Governance for Intangible Cultural Heritage Practitioners in Burkina Faso.”

Connections to AAOO

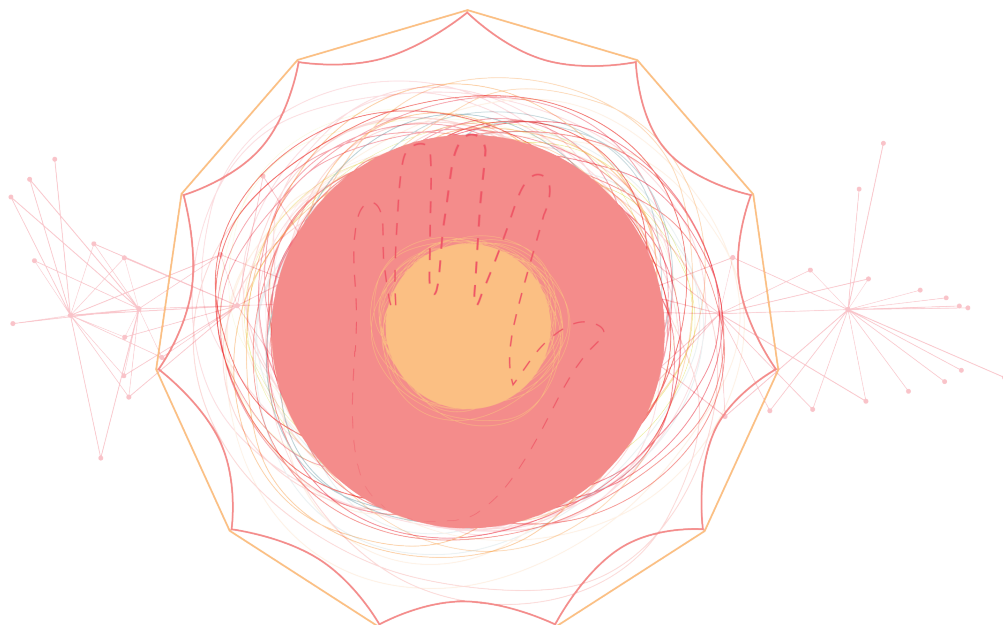
Throughout the mapping process, we did not find any project that has the same scope, concept, approach, and objective as AAOO; however, there are certainly similar aspects and lines of thinking across the space.

For example, there are initiatives such as AI for Developing Countries Forum⁸, which aims to bring together stakeholders to advance fair and equitable AI in the global south, and the Salzburg Global Seminar, which recently brought together diverse artists and cultural practitioners to discuss the impact of AI on culture going ahead⁹, that connect to our stated goals of consortium building.

African Digital Heritage in Kenya's Talking Objects project has similar aspects in that it aims to create a digital archive that inspires decolonial knowledge production through presenting a curated collection of objects and their histories¹⁰. The Mapping Community Heritage project in South Africa through the University of Leeds' Changing the Story reflects our original ambition of empowering the young generation to take ownership of their cultural heritage legacy.¹¹

Awarri, a Nigerian AI company, is based on the principles of incorporating native intelligence and contextual knowledge into its models, and is also working on a method to tokenize motion in the same way as language with huge implications for including diverse ways of knowing.¹² There are some initiatives as well, such as the Indigenous AI protocol, to embed Indigenous knowledge in the model of the AI itself (this will be explored further in the case studies section).

Despite the positive outcomes of the research in terms of confirming the need for AAOO, it also uncovered the deep challenges connected with the project. These are presented in the below section.



⁸ <https://aifod.org/>

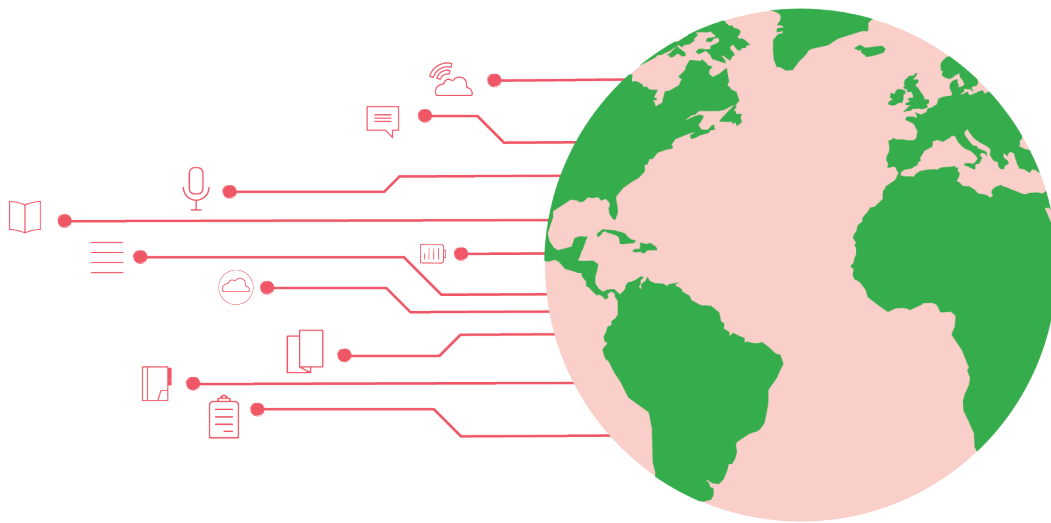
⁹ <https://www.salzburgglobal.org/multi-year-series/culture>

¹⁰ "Talking Objects - Building a Digital Archive for Decolonial Knowledge Production."

¹¹ https://www.changingthestory.leeds.ac.uk/mapping_community_heritage_sa/

¹² Awarri, "Whitepaper."

Analysis: Challenges



End use case: With a few exceptions, most of the projects around digital heritage were input-driven, static archives; their main value stemming from the effort and energy dedicated to gathering the data and putting into digital format for preservation. In many cases, the data collection was the goal in and of itself, so the question of how it would be used by who to solve what problem was generally absent. This is where the AI model often stands apart, as the LLM or other generative AI models are meant to be used, either for a specific purpose or for general inquiries, text generation, etc. Some projects (explored below in the case studies section) created interactive apps or games, either from specific cultural knowledge systems or more general folklore. Interestingly, in these cases, the focus was rather on the output stage and the final product rather than the input process of data collection.

Learnings:

The end use case is an integral part of a project that is community centered, responsible, and responsive. Whether this be a product, a service, a game, a selling platform, an artwork, or something else entirely, it must be derived from community needs and developed alongside the community with literacy and training a central aspect. Otherwise, it will always remain an effort by outsiders to use resources from the community, even if it is given with consent.

Data governance: One of the hottest topics in AI and the tech sphere the world around, data governance is at the heart of both the need and the challenge for community-driven AI. Data governance essentially represents the ability of a person or group to decide what data will be shared with who and for what reason. Sometimes referred to as data sovereignty or data ownership, this issue is one of the prickliest and most complicated as even the most well-intentioned projects can lead to pushback as many vulnerable communities feel that data is just the latest resource that is being taken out of their control.¹³ Further, it goes beyond policy; regulations can specify how data should be used, but many organizations and companies lack the knowledge to understand exactly how to comply.¹⁴

Further muddying the picture is the question of structures to support and enforce data governance. From restrictive and conditional funding structures to a lack of governmental interest or presence in data rights, the question of data stretches far beyond AI models – though it is exacerbated in the AI context due to the requirement of data. For example, Uganda-based data rights organization Pollicy views the issue in the lens of “data justice,” and feel that it is important to view from a power-analysis lens, investigating data control in the context of Africa as continuities of coloniality.¹⁵ In many cases data stands as the new frontier of resources that the global south has and can provide, and also as the new form of exploitation and colonial power structures. From global north companies holding the rights to digital scans of global south heritage to LLM companies using African workers to tag and refine data, data rights for communities of origin, minority groups, and historically oppressed peoples stand as a new frontier of power and oppression.

Learnings:

In the context of a project that aims to work with multiple countries and communities, data governance becomes a question of context, as it seems very challenging to design a single solution that is responsive to the very different needs, understanding, and levels of comfort and consent across different communities and cultures. Further, one can debate on questions of belonging, identity, and rights, as well as on who can truly define the boundaries of a community and who has the right to speak/make decisions for them. The WIPO Treaty on IP and genetic resources recently ratified by member states starts to address these questions, but they become quickly thorny and complicated.¹⁶

Data sourcing: Sourcing data, especially in areas with less digital literacy and fewer existing digital resources, is a recurring issue for both tech and culture related projects. The main challenges are how much data there is, where it comes from, and how to input or categorize it. Data and AI are directly linked: the amount of data concretely affects the usefulness or relevance of the AI models. The more data, the more accurate the model is. While there are some models now that are working to produce similar results with less data, the technology is still quite new.¹⁷ With the pace of advancing technology, it is sure that this particular problem of the amount of data could be solved, however, the ethical element remains.

¹³ Chandran, “NZ, US Indigenous Fear Colonisation as Bots Learn Their Languages | Context.”

¹⁴ Li, “In Data Governance, Good Policies Aren’t Enough.”

¹⁵ Source: Follow up call between Bobina Zulfa and Gillian Rhodes based on draft report.

¹⁶ “WIPO Member States Adopt Historic New Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge.”

¹⁷ Tonja et al., “InkubaLM.”

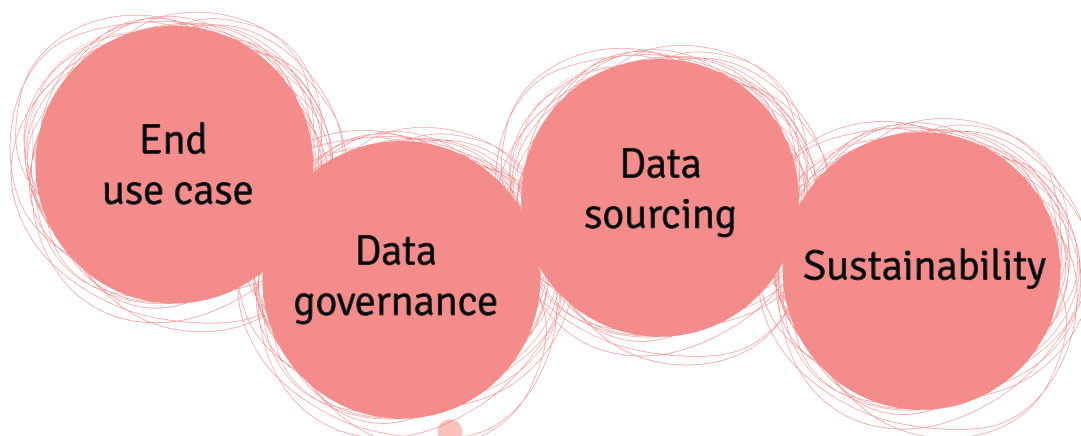
Learnings:

As mentioned above, while some projects that we identified were very community focused in their data gathering, consent to sharing data and how to protect people's data is one of the most pressing issues in the world, not just in this context. Across the board AI companies are facing scrutiny for scraping data off the web including copyrighted content and personal info. However, this is deeply relevant for minority groups, as it represents another violation on a long list of resources stolen.

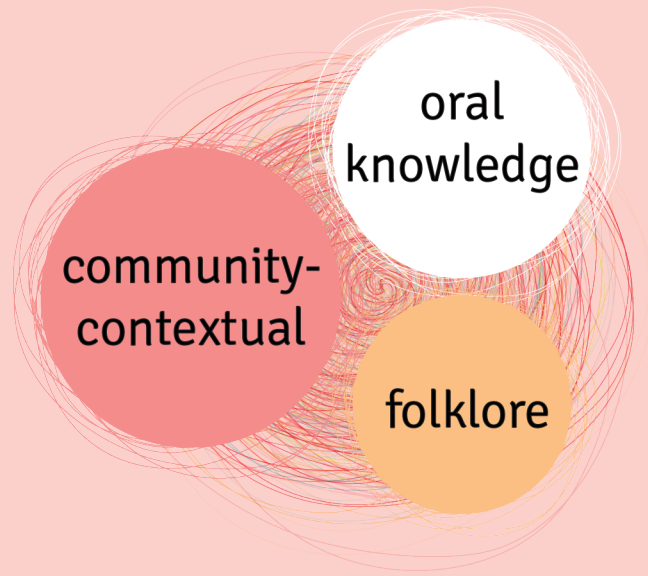
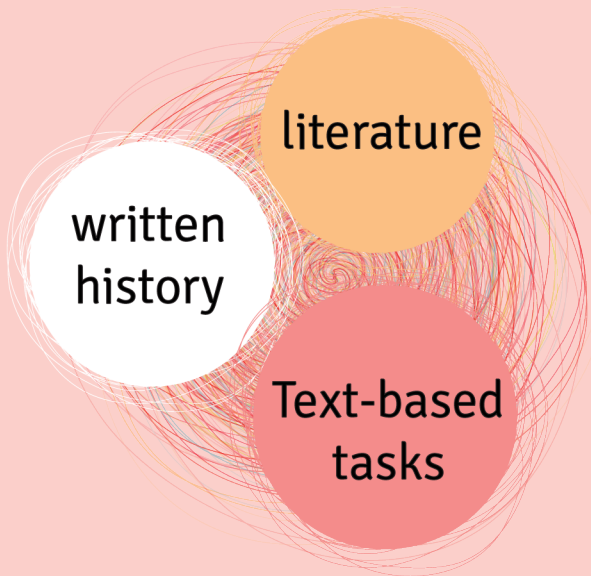
Sustainability: Finally, the question of sustainability is present in any discussion of AI or technology in general, both in the question of how durable the solution is and how long it will last, and the impact of the solution on the environment.

While there is a general conception that digital archives or records are more long lasting than physical, this is not necessarily the case, especially with the rapid pace of technology. Software and code can quickly become outdated, and as technologies move onto new forms, old databases or applications get easily left behind.

Further, AI systems and models are very demanding in resources, and AI models and solutions could more deeply exacerbate the climate crisis, which already impacts the global south more deeply. Many data centers for global north companies and English LLMs are being built in the global south, draining resources and damaging the environment.



These four challenges identified above, while they do have implications on the philosophical approach, are primarily focused on logistical and practical questions. However, the issues go deeper, and there are two main epistemological challenges that were uncovered in the mapping: the dominance of western frameworks and thinking in the overall approach to AI generally, and the wide gap in how technology and culture approach problems and view solutions.



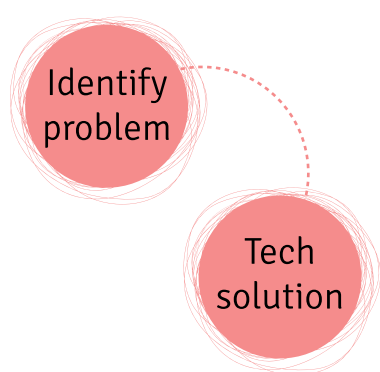
Western frameworks: A driving force in the development of the AAOO vision was the need for AI models that reflect and valorize the different ways of knowing – the global north, and particularly the west, valorizes text and literature ways of knowing, which is now reflected in current AI models. The entire framework relies on the existing of literature and written knowledge and functions best for written or text-based tasks or prompts. Its strength is directly linked to the dominance of English texts. However, the global south valorizes oral knowledge, folklore, community-contextual, and experiential learning. There is no such AI model which begins with this type of knowledge as its core. While there are more and more global south companies such as those identified in this research that are working on local LLMs and creating LLMs with low resource language, it is a question of creating or sourcing language, text-based knowledge that can be input in the model.

Learnings:

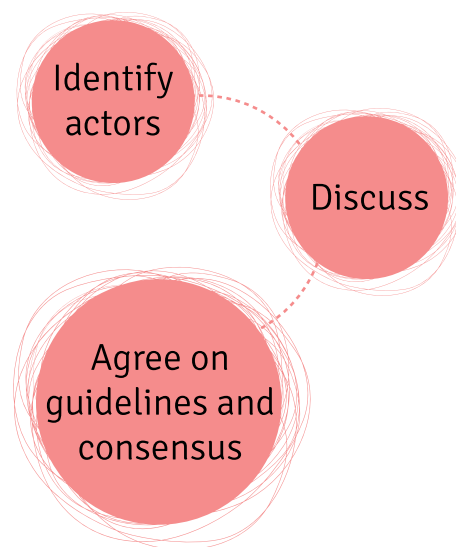
One of the issues raised among activists and some of the leading voices for ethical and inclusive AI is the design of the AI model in and of itself, how it is built and learns, what values are embedded in the process, and how it reflects in the final model. This goes beyond the question of text and literature dominance and speaks to a broader question of how the existing AI models may reflect - on an overarching, system level before any data is introduced – the primarily western and male views of their creators.

Tech vs culture approaches: Throughout the research process from the documents to introductory calls, it became clear that there is a fundamental disconnect in how the tech and cultural spheres operate, in their approach, methodology, outlook, and beyond. That is not to say that they don't influence each other: a recent paper on AI and International Cultural Relations articulates the two-way influence of culture and technology, but makes special mention for the need for culture to play a stronger role in the technology discourse as in the world today, often technology advances on its own and culture is a secondary element that enriches and adds to the conversation.¹⁸

Tech approaches



Culture approaches



One of the main differences in the two approaches is that tech people/companies seek to solve a specific problem, while cultural actors seek to agree and establish guidelines and methodologies. Both approaches have their pros and cons: tech actors can accomplish a lot quickly, but sometimes move without deep consideration of the consequences of their actions, whereas cultural actors are more inclusive and participatory, but it can be a slow process that doesn't always result in concrete actions.

Learnings:

If a positive collaboration is to be built between these two spheres, it must draw on the respective strengths: the tech approach to actualize and build, and the culture approach to ensure that it is sensitive and responsible to its context and vision.

¹⁸ Kulesz, "Artificial Intelligence and International Cultural Relations."

4. BEST PRACTICES: CASE STUDIES AND EXAMPLES

AAOO is not unique in its attempt to address the above challenges. In this section we outline some examples of companies or projects that are responding to the identified issues in innovative or unique ways. We will start at the beginning of the AI process by examining alternative ways to approach the design of AI model outside of the standard frameworks, then turn to the process of data sourcing and data governance, and finally share examples of existing use cases for AI in connection with heritage.

Non-Western Approaches to Design and Building AI Models

Theoretical

“Making Kin With Machines” Decolonizing AI the Manyfesto Abundant Intelligences

There are already a few initiatives on how to embed non-western methodologies and philosophy in the development of the AI itself, often centering around Indigenous epistemologies and decolonial frameworks. In the award-winning essay “Making Kin with the Machines,” a group of Indigenous American writers asked, “How do we as Indigenous people reconcile the fully embodied experience of being on the land with the generally disembodied experience of virtual spaces? How do we come to understand this new territory, knit it into our existing understanding of our lives lived in real space, and claim it as our own?”¹⁹

Their proposal is rooted in the principles of decentering the human and creating circles of extended relationships, attesting that the Indigenous epistemology is more adapted to respectfully including the non-human and working with and alongside the full ecosystem. In their view, the Indigenous approach might rather view the machine as kin to collaborate with, embedded within a larger ecosystem, rather than an isolated tool that acts as a slave to human wishes. They suggest, for example, that “Rather than holding AI separate or beneath, might we consider how we cultivate reciprocal relationships using a kānaka maoli reframing of AI as ‘Āina. ‘Āina is a play on the word ‘āina (Hawaiian land) and suggests we should treat these relations as we would all that nourishes and supports us.”²⁰

The essay presents three different concepts drawn from Indigenous ontologies and epistemologies, centering primarily on the idea of ecosystems, kin, and relations. This de-centering of the human and the sole focus on progress and profit for the user is present in other initiatives. Activist Suhair Khan’s three approaches to decolonizing AI reflect the same principles: the first is to diversify AI by moving beyond the secular, English-dominant AI landscape, the second is to center design on collective wisdom, and three, protect and document endangered languages and cultures.²¹

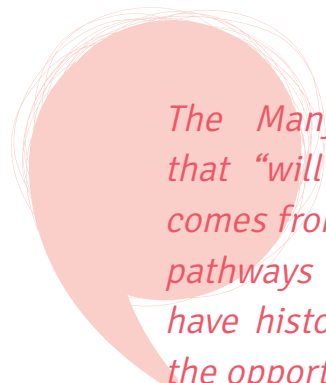
¹⁹ Lewis et al., “Making Kin with the Machines.”

²⁰ Lewis et al., p. 4.

²¹ Khan, “Indigenous Frameworks for AI.”



Decentering, collaboration, and multiplicity are at the heart of the Decolonial AI “Manifesto,” a document drafted by a group of experts in AI, social sciences, humanities, and human rights.²² The ‘manifesto,’ which draws deeply on the idea of plurality, represents both an idea and a provocation, noting the urgency in the world at present recognizing “humans’ capacity to use AI as a knowledge system to create irrefutable “algorithmic truths” to reinforce domination. In doing so, other systems of knowledge production and other visions are denied and erased, as are other peoples’ agency, autonomy, and contestation.



The Manifesto envisions AI governance that “will acknowledge the expertise that comes from lived experience, and create new pathways to make it possible for those who have historically been marginalized to have the opportunity to decide and build their own dignified socio-technical futures.”

Continuing the conversation, the Indigenous AI network, led primarily by Indigenous researchers from North America and Australia, launched last year a six-year research program entitled “Abundant Intelligences” which seeks to conceptualize and design AI systems based on Indigenous Knowledge Systems.²³ The program was an outcome of the Indigenous Protocols Laboratory.²⁴

From these resources, it is clear that themes of decentralization, plurality, kinship, and collaboration are at the heart of the question of methodology and design outside of the dominant western framework.

²² “Decolonial AI Manifesto.”

²³ “INDIGENOUS AI.”

²⁴ “About – Indigenous AI Laboratory”; “INDIGENOUS AI.”

Practical

Kama AI Masakhane Awarri AI

The question of how non-western epistemologies can be integrated into the design of the AI itself is still somewhat in its infant stages; however, there are some companies working on a more practical approach. Indigenous-led Canadian company, Kama AI, has worked to create an “EI” AI, or an emotionally intelligent AI, based on principles of ethics, emotions, and empathy.

There are some companies and projects which seek to recenter AI within local contexts – these seek to create models that are for their environment as opposed to a supposedly ‘generic’ or universal model that generally gives western-centric responses. In some ways, then, these are the opposite of decentralization. There are very strong efforts in Africa, for example, to create African-centric AI models and systems. Masakhane, for example, is a grassroots project and community to research on natural language processing for Africans, by Africans, and works on a value system similar to the above.²⁵ Similarly, Awarri AI centers around embedding native intelligence, or contextual knowledge, in their AI systems to ensure the outputs are appropriate and responsive to an African context.²⁶ Data Science Nigeria and Deep Learning Indaba as well are networks and communities to research not just how to gather data for African language LLMs, but what African-centric AI means.

Data sourcing and data governance

Community input and sourcing

Catama Borneo Gerai OA Digital Benin

In terms of data sourcing, there were a few projects we found that work very deliberately with communities, minority cultures, and indigenous groups to source data and make decisions on what is shared or not. Two of these, Catama Borneo on Borneo Island and Gerai OA in Malaysia, work very closely with indigenous communities on what is shared and how, the format and presentation of the data, and how it’s used.²⁷ It should be noted, however, that both of these were primarily focused on preserving practices and sharing knowledge for commercial purposes, and did not particularly concentrate on documentation and digital archives.

In terms of digital archives, the Digital Benin project documents and categorizes artifacts as well as oral histories and intangible resources for online searches.²⁸ The digital collection is tagged in the Edo language and the project includes information and educational materials about the language. Here, the community is deeply involved in the creation and development of the project’s resources, and in the data collection. Nonetheless, the overarching control of the project and the data remains in the hands of the project rather than the communities.

²⁵ “Masakhane.”

²⁶ Awarri, “Whitepaper.”

²⁷ admin, “Indigenous Crafts of Malaysia | Malaysia Design Archive”; “Catama Borneo.”

²⁸ “Digital Benin.”

Name of project	Community Centered Practice	Gap
Catama Borneo	Data ownership and choice of what is shared and how.	Focus primarily on commercial purposes.
Gerei OA	Data ownership and presentation.	Focus primarily on preservation for commercial purposes.
Digital Benin	Data collection, accessibility in language, development of resources.	Data governance and control remains with the project.

Data governance

Te Hiku Media Te Mana Raraunga the Fairly Trained Project

On the side of data governance, there is a great deal of ongoing research. Some of the leading voices can be found in the Maori community in New Zealand, and two large projects, Te Hiku Media and Te Mana Raraunga, both focus deeply on Indigenous data sovereignty and creating structures and regulations to assure it.²⁹ An in-depth piece on Te Hiku Media in the MIT Technology Review outlines some of the practical ways that the organization ensures the ongoing sovereignty of community both over their language and over the data of their language.³⁰ The project included the creation of a new digital hosting platform to ensure that the community retained control of the data, with the organization leaders positioning themselves as ‘guardians’ rather than owners – something they felt very strongly about after being approached by companies like Duolingo, who would take the data and sell it back to them. They sourced data through a competition within the community to record phrases in *te reo*, the Maori indigenous language for the algorithm to learn from and gained a record amount of community involvement.

Te Hiku Media provides an interesting example as well of governance structures: any researcher from outside the Maori community has to make a proposal on what they want to do with the data, and it’s passed through a decision-making framework grounded in Maori values and principles. They are in the process of creating a data license that would place guidelines on the use of datasets. While questions remain on its enforceability, the idea of the data license is now appearing in other projects such as the Mozilla Common Voice Project.³¹

There are some broader initiatives to address the issue of where and how data is sourced, including the Fairly Trained project, which proposes certificates to tech companies who match certain rules of how to source data.³²

²⁹ “Te Hiku Media”; “Te Mana Raraunga.”

³⁰ Hao, “A New Vision of Artificial Intelligence for the People.”

³¹ Hao.

³² “Fairly Trained.”

AI and Digital Heritage

While most digital heritage projects offered virtual spaces and experiences, there were a few projects that stood out for their unique outputs or approach.

Future histories

Zain Naqvi **Malik Afegbua**

Interestingly, some artists are using AI to think more about the past, or to imagine future histories. Pakistani digital artist Zain Naqvi has been developing his own mini “AI of his own” through training his version of Stable Diffusion, feeding it Pakistani popular magazine covers from the 60s and 70s before generating new ‘old’ covers. He also worked with the model to imagine the photos of the 20,000 Punjabi men who fought in World War Two and of whom no record or trace remains.³³

Nigerian artist Malik Afegbua similarly has been working to document and film octogenarians in Nigeria with the goal of creating hologram installations so young people can meet their ancestors in a digital format. He eventually sees AI coming into play as well to generate avatars or other ancestors as a way of passing down information.³⁴

Interactive use cases

Leti Arts **Never Alone** **Biskaabiiyaang** **Safarnama** **Kissan AI**

Other companies have created world building games or metaverses based on Indigenous or community principles, folklore, and stories. Leti Arts in South Africa has developed numerous games based on African traditions, characters, and stories, and interestingly offer this approach as a service as part of their offerings.³⁵ The Never Alone game, or Kisima In itchu a, was built by Alaska native peoples along with tech experts to delve into the Iñupiat lore.³⁶

Similarly, the project Biskaabiiyaang presents both a metaverse and educational materials, all grounded in the worldviews, folklore, and stories of the Anishinaabe people.³⁷ The project includes a metaverse style game as well as a digital card game, meant to teach Anishinaabe principles of kindness.

The Safarnama Digital Heritage App in India takes a slightly different approach, using location tracking to trigger alerts via the app to share information on the heritage of a place as a user navigates through New Delhi. The app contains both text and audio, and is available in both Hindi and English.³⁸

Finally, while it is not at all connected to heritage, we found a fascinating AI company in India, Kissan AI, which is developing an LLM specifically targeted to farmers.³⁹ The tool is available in Hindi, English, Hinglish, and variety of other dialects, and works with text and audio. It is meant for farmers to get agricultural data and insights.

All of these represent interesting end use cases designed to be accessible, fun, and engaging, each providing some kind of practical knowledge or interactive experience.

³³ Source: Introduction Call conducted by Gillian Rhodes.

³⁴ Source: Introduction Call conducted by Gillian Rhodes.

³⁵ “Home - Leti Arts.”

³⁶ “Never Alone - Homepage.”

³⁷ “Biskaabiiyaang.”

³⁸ “Safarnama Digital Heritage App – Apps on Google Play.”

³⁹ “KissanAI.”

Key Learnings and Takeways

Based on the best practices and examples above, the below are the key learnings that we see as the most important in building “an AI of our own.”

Design and Methodology:

- Articulate a methodology and practical principles that view the AI model as a complete ecosystem, in which the traditional power dynamics of user, owner, and controller are reconsidered and critically examined.
- Create space for pluralism and contextual challenges in the methodology that can handle the complexities of diverse environments and communities, acknowledging that communities themselves are not homogenous and clearly defined entities.

Data sourcing:

- The methodology for gathering data must be community centered and consensual, and grounded in principles of community ownership.

Data governance:

- Articulate a data license and decision-making process for how collected or existing datasets gathered for the project are used, which can be adapted for the specific community.

Community involvement:

- The community must be involved from start to finish, from input to training to testing to end use case.

End use case:

- The developed model, build, or system should be flexible enough to allow a range of end use applications. The end use case should inform the data collection and fine tuning, such that a community can clearly see how the model can solve a specific and current problem and engage with it in the interests of addressing this.

5. CONCLUSION

The mapping project was an initiative to understand how to place and position AAOO within the landscape of digital heritage and inclusive/ethical AI initiatives, and to begin to build the consortium. In that, this research has provided clarity and direction for the project.

However, along the way, the research brings up many other questions and reflections. Beyond the practicalities of data governance and technology, the research brings up certain existential questions around documentation, modernity, and archiving. Cultural heritage as a field has a tendency to see culture as something to be preserved as is, documented and saved in its existing form. AI and generative AI, on the other hand, by nature is about (literally) generating culture and history, iterating and expanding, creating something new. We see a deep worry in the cultural heritage sphere about the loss of culture, and this worry also translates into the unauthorized use of culture by AI models that mispresent it. And yet, many cultural heritage organizations struggle to interact with younger generations, and the modern world doesn't always leave space for tradition. The project stands directly at the intersection of these questions of how digital transmission, modernism, and heritage interact, and it is further complicated by the question of who will use this AI, for what purpose, and how they see or interact with culture. In this regard, we may find it more useful to look at concepts of "living heritage" and explore how the AI could renew, encourage, or engage interest in culture.

More generally, the research also touches on questions of specific cultural contexts and how different communities and countries view AI, culture, and heritage generally. For example, we found a number of innovative AI projects led by Indigenous voices in Australia and the Americas. This raises an interesting juxtaposition with the context in Asia in particular but to some degree Africa where there is some controversy around the concept of an Indigenous identity in itself.⁴⁰ While it was beyond the scope of the research, it is interesting to speculate on how indigeneity, minority cultures, different cultural contexts, and the way communities self-identify and are identified interplay with questions of data governance and ownership.

Further, the research uncovers the diversity of perspectives on non-western frameworks, decoloniality, culture, heritage, and governance and raises some philosophical questions on approaches that aim to provide any kind of replicable solution. Perspectives and approaches that favorize decentrality and plurality, working in flexible spaces rather than imposing a certain vision, are more consistent with non-western frameworks, but could be challenging in practice.

One of the greatest challenges in this research was simply the pace of AI research and technology. Many of the articles cited here came out during the mapping process itself, and new regulation, research, and thought pieces come out daily, especially around ethical and inclusive AI. The global conversation is aligned with the vision of AAOO, though it remains to be seen if the dominant tech companies will participate in this discussion – an open question that highlights the tension between the tech and culture spheres, a point that was well-articulated in the report *AI and International Cultural Relations*.⁴¹ The quick pace means that potentially some of the challenges stated here may become irrelevant in the future: for example, there seems to be some research that suggests even the omnipresent LLM models are falling out of favor for "Small Learning Models" or "SLMs," as most people using AI agree that it has to be trained

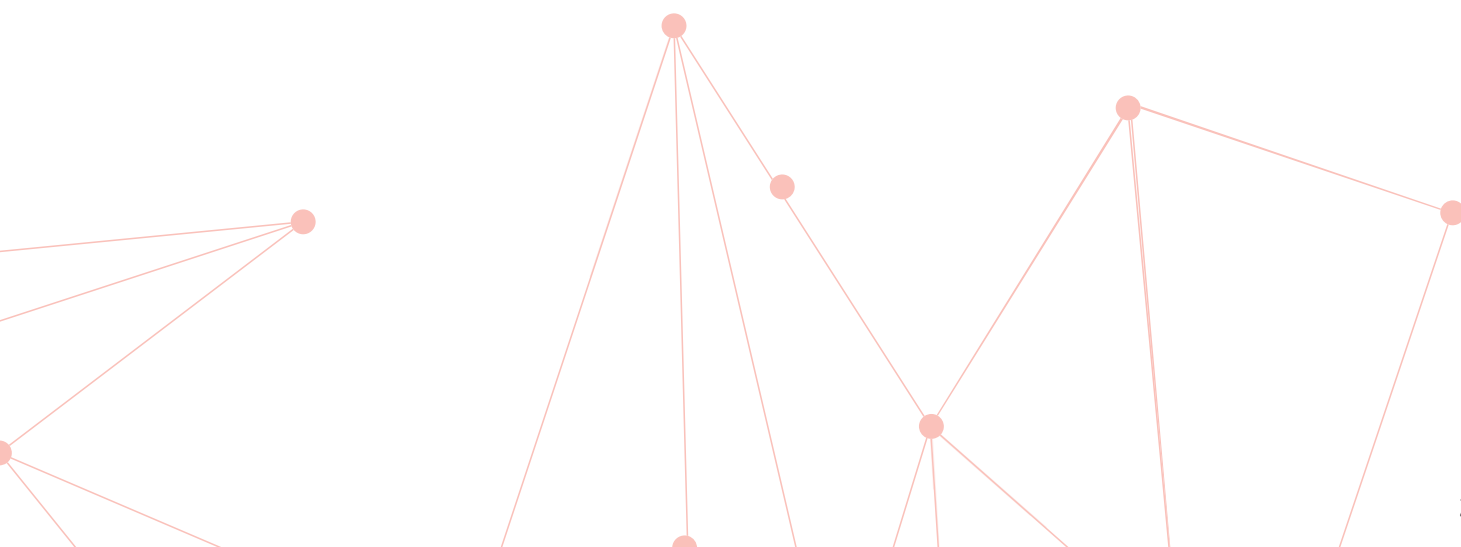
⁴⁰ McIntosh, "Are There Indigenous Peoples in Asia?"; "The Concept of Indigenous Peoples in Asia: A Resource Book - IWGIA - International Work Group for Indigenous Affairs."

⁴¹ Kulesz, "Artificial Intelligence and International Cultural Relations."

on user-specific data before one can get useful outcomes – leading back to the question of data governance, as there is no great clarity on where this data goes and how it’s used by the tech companies. More and more research comes out every day on mitigating bias in LLMs as well, while new regulations and ethical arguments are constantly in process. As such, establishing a position for AAOO in such a shifting landscape was and is a challenging task.

Overall, the mapping has outlined the timely need for a project like AAOO and the relevance of its main themes within the broader discourse. It has provided the necessary framework for the team to identify the next steps of the project and the definitions of what ‘an AI of our own’ really means in practice. However, it has also raised deep philosophical questions and uncovered potential challenges not only relevant to our project but any others with similar visions of community centering, ethical and inclusive AI, and tech/culture hybrid solutions.

In conclusion, this research has provided a much-needed framework and positioning for AAOO, and has allowed us to set the directions and objectives for the coming months. However, it represents but a small drop in a much larger ocean of a conversation that is evolving by the day, if not by the hour. If nothing else, the mapping has illuminated both the depth and the urgency of the discussion, and cements the fact that if any sustainable or broader impact is to be had, it will be through networks and collaborative approaches.



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