Supercharged by AI
Information Design Approaches for a MIL Public Engagement Initiative

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Abstract
This article examines how Information Design can support Media and Information Literacy (MIL), with a focus on Artificial Intelligence (AI) literacy in informal learning contexts such as libraries. Drawing from MIL research and case studies, we identify three methodological approaches: data-mediated design, diagrammatic representation, and scalability of reproduction, enabling low-tech and easily localizable resources. These principles were applied in *Supercharged by AI*, an exhibition that travelled across ten European countries and explored how AI shapes online experiences. We discuss two artefacts to demonstrate how this framework can make AI literacy accessible, adaptable and engaging, across diverse audiences. Early findings indicate strong potential for scalability and relevance, while also revealing areas for improvement, particularly in relation to information density and the need for guided mediation.

Keywords
Information design
AI literacy
Media and information literacy
Low tech exhibition

Introduction:
Visual Approaches for Media and Information Literacy

Across the literature from a range of disciplines, it has been widely demonstrated that visual-oriented approaches can significantly enhance learning outcomes (Dake, 1993; Kress & van Leeuwen, 2006; de Silva Joyce, 2014). This is largely because such approaches draw on visual thinking, "the ability to turn information of all types into pictures, graphics, or forms that help communicate the information" (Wileman, 1993, p. 114), a cognitive skill that we begin to develop even before we learn how to read or write (Berger, 1972). In this context, Communication design practices, understood here as translational approaches aimed at making knowledge accessible (Caratti & Baule, 2016), recognize and enable the potential of such visual-oriented communication. This article emerges from the domain of Information Design, a branch of Communication Design that employs visual language to access complex data and informational structures. We argue that information design is a crucial tool for literacy, particularly for literacy in new technologies such as Artificial Intelligence (AI), for their data-mediated nature.

The introduction of AI tools has led to much discussion at various levels, including legislation such as the AI Act, developed by the European Union in 2024, which requires companies and institutions that integrate AI models into their work to provide appropriate training to increase workers' literacy, considering their technical knowledge, experience, and education (European Union, 2024).

AI literacy lies under the umbrella of Media and Information Literacy (MIL), a crucial skill to enable citizens in modern societies to "demand high-quality and rights-respecting services from all content providers" (UNESCO, 2021, p. 6). In this context, AI literacy usually refers to the technical competences required to use the technology across different settings, favouring citizens' critical understanding of how and when AI can be useful in their daily activities (European Union, 2024; Vuorikari et al., 2022). However, AI literacy does not have a universally agreed-upon definition (Almatrafi et al., 2024), and can be addressed in a variety of settings, in particular informal educational ones, which encourage connecting the technology to real-world scenarios and offer several advantages, including supporting young learners (Long et al., 2021). Indeed, while AI may help humans tackle large-scale societal challenges, it also introduces potential new risks.

Adopting an approach to literacy that offers only a technical description, or a summary of existing literature, runs into several challenges. First, it might be completely unfamiliar to the audience, as some people may never have interacted with an AI tool before. Second, AI technology itself is evolving rapidly, which means that any material produced could become obsolete very quickly. Third, how the topic is understood and received can vary significantly across different cultural settings.

Moreover, the need to increase AI literacy seems to conflict irresolvably with the technological complexity underlying such systems. To be disseminated effectively, digital literacy materials must

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avoid reinforcing the digital divide and be easy to reproduce, share, and use in different contexts.

From the point of view of Communication Design, different solutions have been developed, often drawing from different fields, that have proved to be effective in engaging the public and bridging this tension. For instance, *Anatomy of AI* (Crawford and Joler, 2018), takes a diagrammatic approach to the topic of AI, mapping out the lifecycle of an AI-powered device: from its birth, through its lifespan, and to its eventual death. The diagram makes the infrastructure of this process explicit, revealing both its visible and invisible layers, much like anatomy.

Another successful example of adopting a low tech solution to increase access to digital literacy is *The Glass Room* (Tactical Tech, 2017), a curated collection of visually-oriented and analogic artefacts that promote a critical approach to the spread of digital technologies in our daily lives. It touches on various topics, such as misinformation and privacy. Within these artefacts, information visualization plays a key role in tackling the societal impact of highly technical issues, helping to lower the barriers to the distribution and reproducibility of such interventions.

Case Study: *Supercharged by AI*

In this contribution, we present *Supercharged by AI*, an exhibition grounded in Information Design, on the influence of AI over different aspects of our digital life, which are often little known or discussed.

Supercharged by AI is a result of Media and Information Literacy for Societal Resilience through the pan-European Library Networks project, funded by the European Media and Information Fund and developed in collaboration with the lead partner Tactical Tech and the International Federation of Library Associations (IFLA).

The project aims to develop MIL materials about the influence of AI on various aspects of our digital lives. Because the project was intended to be exhibited in libraries across ten different European countries, the material had to be adaptable to different cultural contexts and languages. This requirement provided an opportunity for identifying and testing design approaches that build on existing solutions to create reusable and scalable AI literacy materials.

The example of online harassment is particularly telling to illustrate what the project refers to as social issues supercharged by AI.

Online harassment is often perceived as a phenomenon confined to the digital sphere, disconnected from real-world consequences. In reality, the online and offline dimensions are deeply intertwined. At the time of the project's development, AI played only a limited direct role in online harassment; however, it significantly shaped public perception, particularly through synthetic media such as deepfake videos and images. These technologies have contributed to severe forms of abuse, including cases of "sextortion" (Marr, 2024).

Similarly, to cite other examples, online scams proliferate due to the widespread availability of text-to-speech technologies and bots that automate the delivery of scams (Peñarredonda & Dib,

2023); political influence becomes automated through the hyper-personalization and hyper-profiling of users' activities while providing inaccurate information (Hendel, 2024); and stereotypes become amplified through biased datasets and extractivist approaches to data collection (Turk, 2023).

The project focused on involving European libraries to disseminate the MIL artefacts. Given their proximity to civil society, their ties to education and educators, and their existing informal associations of individuals from diverse backgrounds, libraries are a complex access point to literacy. Our main challenge lies in the production of materials capable of engaging a wide audience without requiring complex technical infrastructures, and functioning across different languages and cultural contexts.

Data-Mediated Scalable Diagrams: Methodological Approach

What methodological communication design approaches can be adopted to produce MIL artefacts? More specifically, how can Information Design approaches make literacy artefacts accessible to a heterogeneous audience across the European territory? To develop the artefacts for *Supercharged by AI*, we identified a tripartite design approach that responds to three clearly defined goals. The conceptualization of this approach emerged through a multi-phase process. Starting with a contextual review and an analysis of various case studies (Yin, 2014) in the fields of MIL, Communication Design and Media Studies, we identified three primary goals related to AI literacy, along with three possible actions to address them. They were defined as necessary for producing AI literacy artefacts that are both effective and accessible. In the following section, we first present the goals and then the related actions in a relational order.

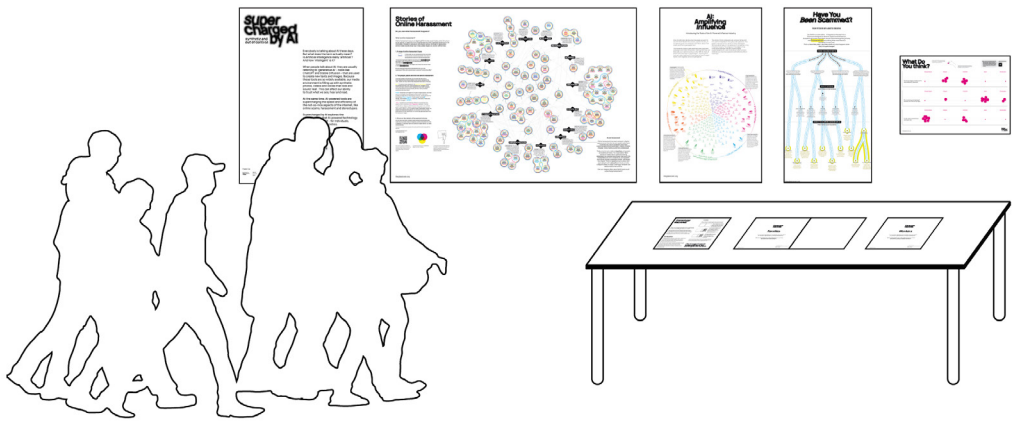

Fig. 1
Diagram of the exhibition (Credits: The Authors, 2024).

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The following are the three goals we identified in relation to AI literacy:

A Tie to experience. To create an accessible MIL intervention, it is essential that it be tied to situations that the target audience is familiar with or has experienced in some way. This is particularly complex for a topic such as AI, since some portions of society may not have direct experience of it. While the term AI is ill-defined and fuzzy, it remains important to cultivate a clear understanding of it, and to root it in experiences that feel familiar and recognizable to the target audience.

B Update and distribute. Literacy is not static: materials must be updated regularly. Digital technologies change rapidly, as we are witnessing with large language models (LLMs) and AI technologies and services. These changes involve technical capabilities, the implications on society and users' growing familiarity with them.

C Be engaging and rich. Finally, MIL interventions are meant for informal learning environments and must be both attractive and engaging, while maintaining richness and rigor in the use of language.

Given these goals, we then identified three possible actions to address them. Each action corresponds directly to one goal, and is presented in the same order.

A Data-mediated Design. We developed the content of each artefact by adopting Digital Methods (Rogers, 2019) for collecting and repurposing data from online platforms. In this context, we use the term data to refer specifically to user-generated content and platform-generated outputs. This includes, for example, social media posts and comments, discussion threads, as well as machine-generated outputs produced by text-to-image systems. These datasets are not treated as neutral or quantitative evidence, but as traces that reflect how users communicate, behave, and are represented within digital environments.
Digital Methods were selected because they make it possible to explore the relationship between digital technologies and society, as well as platform specificity, based on the idea that each platform generates distinct digital objects with unique, medium-specific characteristics (Mauri & Ciuccarelli, 2016). These methods enable the decontextualization of actions and content typically associated with digital experiences. By leveraging the disorientation produced by this shift, readers are encouraged to reconsider these actions and forms of content from a new perspective. For example, as we discuss in more detail in the next section, a single prompt in generative AI systems can be used to generate not just one image, but thousands of images. This mechanism can be repurposed to help people observe how the system fills in the gaps left by ambiguous prompts. The mediation of data and its visual representation align with the project's emphasis on scalability and modularity, as it can easily be adapted and updated for different contexts.

B Scalability of reproduction. To maximize impact and accessibility, artefacts should be designed in a way that can easily be adapted, replicated, and implemented across different library contexts. This approach ensures that our work is not limited to a single location but can be distributed and scaled to benefit a wider audience. The term scalability originates from the heuristic of scale, a metaphor borrowed from geography (Moore, 2008) that expresses the hierarchy of "stratified levels of generalization as a series of vertically nested spaces (e.g., house, block, neighborhood, city, state, country, nation, continents)" (Stornaiuolo & LeBlanc, 2016, p. 265). This concept acknowledges the fragmentation of traditional notions of space and time (Harvey, 1990) and the fluidity of modern social contexts (Blommaert, 2007). For a literacy initiative to be scalable, it must be reproducible and adaptable across geographical, temporal, economic, and cultural borders, and be able to function as a multiplier. In the field of MIL, many initiatives leverage the digital web to achieve scalability: games, videos, websites, and so on. Rather than aiming for frictionless uniformity, our approach aligns with what Kostakis et al. (2024) describe as "cosmolocal scalability": a model in which resources circulate globally but are implemented locally through adaptation rather than standardisation. In our case, the challenge was to design an exhibition, ensuring that it could remain adaptable to different contexts and languages across Europe, and be easily updated without needing to start from scratch. In this phase, the experience of the lead partner Tactical Tech proved to be extremely relevant, and we built upon the approach used in The Glass Room Community Edition: "a lightweight, pop-up exhibition that can be shipped worldwide to community spaces, schools, libraries, and festivals." (Tactical Tech, 2022). Similarly, the artefacts in *Supercharged by AI* were designed to be printed and reused across different European countries, with a layout that accommodates multiple language translations.

C Diagrammatic Representations. To map how AI affects the four topics of interest, we leverage visual schematics, conceptual maps, and structured diagrams (Tufte, 2001; 1998). These representations help break down abstract interplays into visually comprehensible diagrams that support learning. Diagrammatic devices (Ricci, 2010) hold a significant place in the field of communication design, as visual structures that convey information in a comprehensible and shareable way, that can overcome any "constraints related to the technical and disciplinary languages" (Valsecchi et al., 2010, p. 182). In this regard, the power of diagrammatic representations plays a dual role in the visualization process: both as exploratory methods during the research and design definition phase, and in communication, engaging the final audience (Mauri & Ciuccarelli, 2016). In the latter case, diagrams serve as entry points for the audience: a means to read and unpack a complex phenomenon, allowing audiences to perform

"their own reading and interpretations" (Mauri & Ciuccarelli, 2016, p. 953). Furthermore, the potential of the diagrammatic approach lies in its versatility in terms of visualization methods, which "could display not only quantitative data but also ideas, concepts, frames, schemes, viewpoints, perspectives, and values of the system observer" (Ricci, 2010, p. 4).

The Design Approach in Practice: Resulting Artefacts

The design approaches described above were used to produce a set of artefacts for the exhibition. These artefacts were designed as large-scale displays that could be produced easily and reproduced across different venues. The exhibition consists of an introductory poster, one poster on 'online harassment', one on 'online scams', one on 'political influence', and two books focusing on stereotypes in generative AI. While the first two approaches appear in varying degrees across the artefacts, the third is applied consistently to all of them. To illustrate how these approaches translate into practice, we examine two specific artefacts that most clearly demonstrate the application of the three methodological actions. The first is *Stereotype Machines*: two books designed to prompt visitors to reflect on how generative artificial intelligence can reinforce stereotypes. The second, *Stories of Online Harassment*, recounts real-life cases of online abuse to foster critical reflection on how AI can shape or amplify such practices.

By presenting these two examples, we reflect on the strengths, weaknesses, and potential improvements that emerged through the application of the approaches.

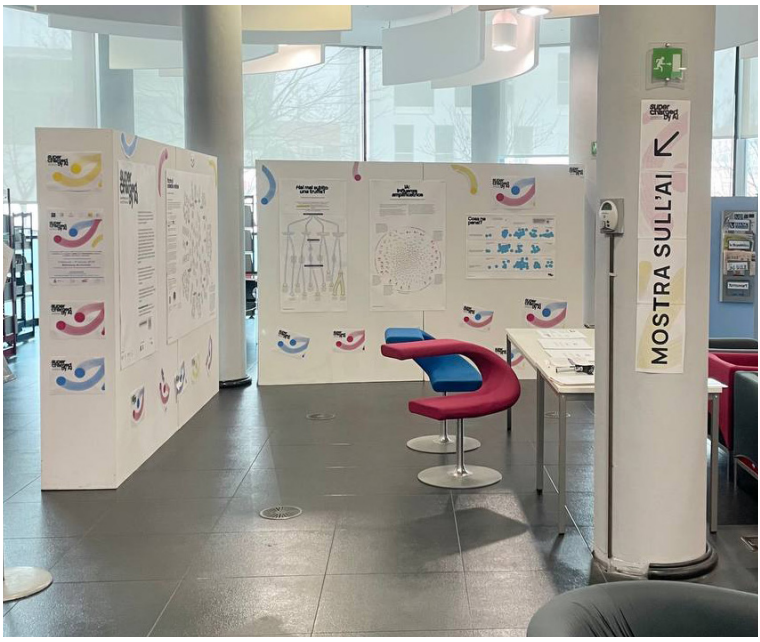

Fig. 2
Exhibition setup in Archimede library in Settimo Torinese, Italy (Credits: Pillerová Vladana, 2024).

What do families and workers look like through diffusion models? Text-to-image diffusion models enable users to generate high-quality images from textual descriptions, called 'prompts'. These models are built on diffusion processes that iteratively refine noise into coherent imagery, and on algorithms that identify and assign vectors describing the content of a training set of images (Radford et al., 2021). Early breakthroughs such as DALL·E (Ramesh et al., 2021) and Imagen (Saharia et al., 2022) highlighted the potential of large-scale text-conditioned models, while Stable Diffusion (Rombach et al., 2021) made such technology widely accessible by reducing computational demands. These models are created starting from 'training sets' containing millions of images and the textual descriptions of their contents, usually created by humans. Such images and descriptions can significantly impact the model's capabilities. For example, if the training set lacks images of dogs, the model will be unable to generate them. Underrepresentation or overrepresentation of certain situations, objects, contexts, and people directly influences the model's outputs. The *Stereotype Machines* books engage with the implications of using these models in depicting social structures and social roles.

A Data mediated Design. Given the rapid evolution and short lifespan of these technologies, and the fact that long-term scalability cannot be guaranteed, we opted for an open-source model, Stable Diffusion, that can be run locally on a machine with the same settings over time. Then, to highlight the bias inherited by the model, we adopted an emerging approach based on so-called "ambiguous prompts" (He et al., 2025). These prompts allow the machine to fill in the gaps needed to generate the images. We selected two prompts that we imagined could easily resonate with visitors' experiences: "generate a <citizenship> family" and "generate <citizenship> workers," where <citizenship> was replaced each time with one of the nationalities involved in the exhibition. The prompt was used to generate 40 images per country, proceeding then to a selection of the 36 with the least amount of distortions and hallucinations. At the time of creation, the generative model still produced images with unrealistic body proportions, overlapping limbs, or blended surrounding objects. These outputs were discarded. The final images allowed readers to observe how the machine interprets and represents them through details that were not explicitly mentioned in the original prompt. For example, how many people are there in an Italian family? And in a Greek one? What are their ages? What settings do Portuguese people work in?

B Scalability of Reproduction. The results are presented in two books, in which the images are organized in 6x6 grids per double-page spread, offering a structured visual comparison. To facilitate the comparison between cutouts, each level was printed on an acetate page, with only the background on paper. Thus each book first presented the full grids of images, and then the different layers composing them. Both books offer two moments to guide users in exploring images and rec-

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ognizing their own stereotypes, followed by an examination of the stereotypes embedded in images that are generated using Stable Diffusion. The first moment, in which users explore the image grid in which the nationalities are unspecified, clashes with the second moment in which the users know their nationalities and are asked to review them again, paying attention to details. The reading of those details is guided by applying multi-layered transparency effects to create the effect of 'unpeeling' an image. Images are decomposed into three layers depicting the presence of specific visual elements: people's heads, people's bodies, objects, and background scenarios. This operation serves as a diagrammatic representation by visually breaking down complex structures into progressive layers.

C Diagrammatic Representations. Each of the two books addresses two social 'roles' for each nationality: family and workers. Given the complexity of the materials and the impossibility of reducing them through design actions such as extraction or synthesis, we opted for a straightforward solution: to create grids of images for each country, allowing visual comparison through juxtaposition. In addition, to facilitate this comparison, we generated cutouts of similar elements within the images. For example, in the case of workers, each image was divided to isolate:

1 the people, to understand their poses and clothing;
2 the objects used, to understand the technologies and types of work;
3 the background, to understand the context.

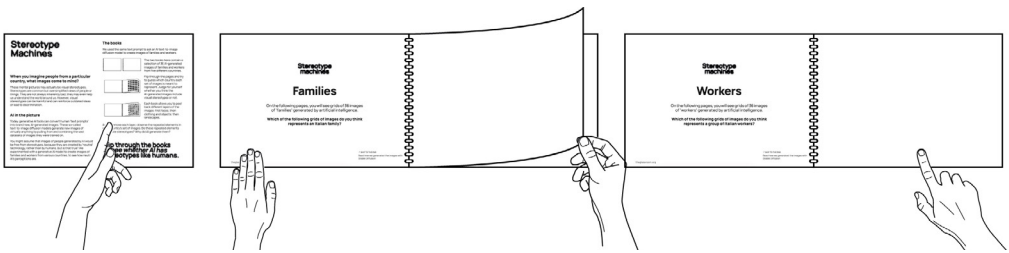

Fig. 3
Diagram of *Stereotype Machine* introduction plate and books (Credits: The Authors, 2024).

Fig. 4
Cutout detail for the Stereotype Machine book of Families (Credits: The Authors, 2024).

How do we define experiences of harassment through the lens of digital platforms? The definition of online harassment is fluid and multifaceted, lacking a singular, universally accepted characterization (Wolak et al. 2007). Broadly, online harassment can be understood as intentional behaviour in which a user engages in actions designed to harm, intimidate, or disturb another individual or group within a digital environment (Yin et al., 2009). This project seeks to articulate key insights that enable users to identify and recognize these behaviours, the digital spaces in which they occur, the relationship with perpetrators, and underlying motivations. To address the challenge of effectively conveying what online harassment entails, and to link it to situations that readers can understand, we decided to adopt a testimonial-based narrative approach.

Through a systematic literature review and meetings with experts on the topic, we identified five key notions: online harassment manifests in multiple forms; a single case may involve multiple forms of harassment simultaneously; harassment occurs across diverse digital spaces, often concurrently; perpetrators vary in their relationship to the victim, ranging from strangers to family members; and motivations for harassment span multiple factors, including racial, sexual, religious, and other forms of discrimination.

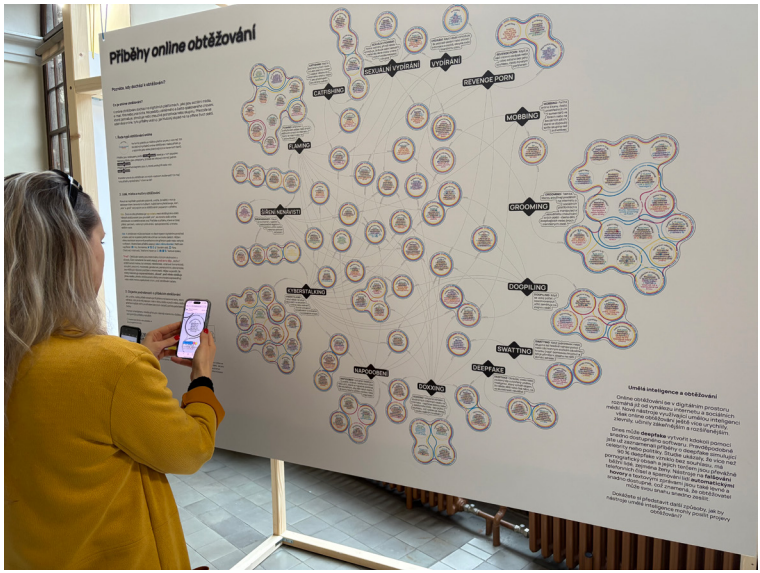

Fig. 5
Stories of Online Harassment **in the National Library of the Czech Republic (Credits: The Authors, 2024).**

A Data mediated Design. Our aim here was to collect stories of online harassment as seen from the victims' perspective. Following the Digital Methods approach, we identified Reddit as a platform whose affordances would be useful for the intended analysis. Its peculiarity lies in the fact that users follow topics, not other people. This creates highly vertical spaces often devoted to public discussion within perceived

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safe environments (Mowle, 2023). The primary dataset consists of 177 unstructured, user-generated narratives recounting personal experiences of online harassment in the Reddit Anglosphere. Cases were sourced through the platform search engine focusing on different types of online harassment. The initial dataset was filtered based on the posting date and prioritizing diversity in the types of harassment represented. The final corpus consisted of 114 cases. The curation process involved a close reading with a twofold goal: on the one hand, categorizing the kind of harassment described; on the other, categorising each story according to three key analytical dimensions, termed 'lenses', with which we identify three levels that define a harassment story: the digital platform on which the harassment occurred, the relationship between the victim and the perpetrator, and the inferred motivation behind the harassment.

B Diagrammatic Representation. The results are presented in a printed poster, which visualizes the structural patterns

Fig. 6
Diagram of web application lenses for reading overlayed text (Credits: The Authors, 2024).

of online harassment through a 'Network' representation. Aligning with the principle of embracing pluralism from *Data Feminism* (D'Ignazio & Klein, 2020), we preserved the integrity of individual stories rather than abstracting data through reductive aggregation. Ensuring the privacy of testimonies while making the systemic nature of harassment visible was a key challenge.

In the network, each node corresponds to a harassment story, positioned on the basis of their connection to fourteen identified forms of online harassment. Each story is deconstructed into its three analytical lenses, with textual excerpts visually distinguished by colour: cyan for the digital space where the harassment took place, yellow for the relationship between the victim and perpetrator, and magenta for the inferred motivation behind the harassment. This overlaying introduces a novel interpretive mechanism, decipherable only through a colour-filtering technique that isolates specific textual layers. This method, recognized as steganography, leverages the distinct optical frequencies of cyan, magenta, and yellow to provide access to three different layers of an image. To support accessibility, we built a web-based app that lets users decode these layered narratives through digital lenses on their phones.

The network also visualizes clusters of similarity among stories and includes annotations that further contextualize the phenomenon. For instance, cases related to grooming — where minors are coerced into exploitative interactions by adults — predominantly occur within gaming platforms and are largely driven by sexual motivations. These thematic clusters are explicitly demarcated through labelled network connections, enhancing the audience's ability to discern overarching trends and subcategories within the broader phenomenon of online harassment.

C Scalability of Reproduction. Translating overlaid text fragments for 114 stories, alongside auxiliary elements such as labels and annotations, required a flexible and systematic approach. To this end, we employed an automated technique, wherein each text fragment is linked to a structured data table to allow translators to edit a dataset rather than manipulate graphical assets directly, significantly reducing the risk of human error and ensuring consistency across linguistic versions.

Another technical challenge of printed reproduction was ensuring the colour fidelity necessary for the colour-filtering mechanism to function reliably across different printing conditions. Since all exhibition materials are locally produced, variations in print quality and colour consistency posed a potential risk to user experience. To mitigate these issues, the design specifies pure cyan, magenta, and yellow for all colour-coded elements, ensuring uniformity across various printing environments. Furthermore, we integrated a calibration system into the web-based filtering tool, allowing users to adjust for variations in ambient lighting and printing inconsistencies through real-time colour detection via smartphone cameras.

Discussion and Conclusions

Supercharged by AI travelled across Croatia, Czech Republic, Estonia, Greece, Italy, Portugal, Romania, Spain, Ukraine and the United Kingdom, with a total of 61 events held within the IFLA network. Each country hosted five distinct events in five cities nationwide, with two exceptions: Greece hosted six events, while Italy held as many as 18. In each of these countries, the process of localizing the artefacts was carried out independently, with each library having the flexibility to print the materials at their own convenience. The localization process was done at the same time in all languages, and the structure relying mainly on information visualizations proved to be a valuable one, easily localizable in different languages. While the wide dissemination of the exhibition enabled the collection of feedback from hundreds of visitors, at the time of writing the data is still being collected and analysed. Nevertheless, reflections from the exhibition phase and insights from the early feedback sessions allow us to present some preliminary assessments and discuss the design approaches adopted in the project.

The extensive coverage of the exhibition in these countries speaks volumes about the successful scalability of the artefacts produced: being mainly print-based and designed to be reproduced with standard means, the materials proved to be adaptable not only to different languages but also to diverse geographic spaces, without any issues in the process. The modularity of materials allowed the different libraries to adapt them to their spaces.

Also, the example of the Italian IFLA library network offers an interesting reflection on the accessibility of the exhibition. What is particularly interesting about the Italian case, from a scalability perspective, is the sequential process of printing and installation. The various dates in Italy were planned in such a way that materials could be reused, shipping them from one city to the next at the end of each exhibition, and thus becoming a virtuous model in terms of sustainability as well.

Moreover, the Data-mediated Design approach appears to effectively achieve its communicative intent. When presenting the materials to an initial group of visitors, we observed that the identified approaches were useful in connecting to known experiences. In some cases, by presenting situations in which the visitor can self-identify (as in the case of *Online Harassment Stories*). In others, the connection emerged through an experience constructed within the exhibition itself, as in the case of *Stereotype Machines*, where the visitor confronted something they would not typically see: dozens of images generated with the same prompt. A good example of this is a video published on YouTube by a library within the network, Santhià, in the province of Vercelli, where a group of high school students, working in pairs, explained and shared their own interpretations of the exhibition's artefacts, as if conducting a curated tour of the exhibition. It shows how a group of users, with whom we had no direct contact, was not only able to understand and engage with the artefacts, but also to communicate their insights to an external audience. Furthermore, we received requests for expanding, for example, the *Stereotype Machines* to other countries.

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Early results obtained within the network of libraries during the localization, exhibition, and training phases reinforce our confidence in the strength of the approach we propose. Feedback from librarians in the Portuguese network, for example, emphasized the exhibition's learning potential. They reported deepening their understanding of AI-related issues, exploring effective pedagogical strategies for addressing these topics with students, and acquiring tools to integrate AI into education in a positive and ethical manner. The exhibition was also recognized as a valuable resource for teacher-librarians, equipping them with up-to-date knowledge and preparing them to guide students in navigating the challenges posed by AI.

This early feedback session also revealed some limitations of the presented approach, mainly relating to information density. Some visitors reported experiencing a kind of 'fear of missing out'; while reading the artefacts, they worried about missing details or being unable to read everything. These issues open new design considerations: how can we create a context in which readers are not expected to read everything but can grasp the overall structure and focus selectively on details, allowing each visitor to follow a different visual exploration? A similar context is involved in reading a map. Further investigations are needed to understand how to create that kind of experience and solve the 'fear of missing out' problem. Another outcome is that in many of the exhibitions, the library personnel were trained to present the materials to visitors, and in some cases to use them as tools to create learning experiences. These early results highlight the importance of training the trainers and envisioning processes that keep humans in the loop. Such processes not only make it easier to use the artefacts and support their integration into learning activities, they also open up to possible design interventions explicitly meant to be both readable by the visitors independently, and at the same time to be used by trainers in didactic experiences.

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