

Empowering Communities: Public Libraries, Inclusive Civic Engagement and Artificial Intelligence

A US-Based Current Practices Report

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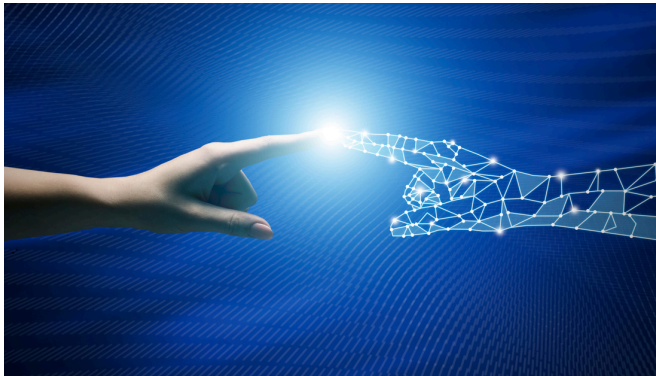
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1.Executive Summary

As the use of artificial intelligence (AI) increases, so does the concerns about its risks and challenges. International organizations and national agencies are making efforts to reduce the harms of AI by setting governance standards and encouraging public participation. Strategies such as consultations, audits, and citizen feedback have shown effectiveness in certain instances. However, challenges persist in encouraging participation as people have limited technical knowledge related to AI and there are no structured mechanisms for citizen participation. In this context, public libraries emerge as an important player as they are uniquely positioned to increase AI awareness and facilitate civic engagement in AI initiatives.



Building on the idea that public libraries can provide opportunities to catalyze critical and inclusive civic engagement in AI, the Center for Technology in Government at the University at Albany (CTG UAlbany), in partnership with the Urban Libraries Council (ULC) has embarked in a three-year research project titled “Empowering Communities:

Public Libraries, Inclusive Civic Engagement and Artificial Intelligence.” The project addresses three key research questions: 1) What role may public libraries play in increasing knowledge about AI in the community? 2) How may public libraries foster inclusive civic engagement in AI initiatives? 3) What are the opportunities, threats, benefits, and challenges of public libraries leading inclusive civic engagement in AI initiatives?

This report is the result of our first research activity aimed at identifying and assessing the role of public libraries in raising awareness about AI and fostering inclusive civic engagement in AI initiatives through a review of publicly available documents and public libraries’ websites. Accordingly, the report offers an overview of the current AI-related programs and services in public libraries across the United States. It delineates the purpose and diversity of AI initiatives undertaken by these libraries, showcasing the breadth of programs offered and their intended objectives. The report shows that public libraries are mainly involved in 1) increasing awareness about AI and 2) developing non-technical and technical competencies through various activities. To increase awareness among community members, public libraries host seminars, exhibitions, and podcasts that discuss the benefits and challenges of AI. These programs focus on demystifying AI for the general public. Additionally, public libraries are building competencies

of community members programs such as lectures, courses, and makerspaces. These programs not only teach participants how to use new AI tools, such as ChatGPT, but also help them develop programming skills for machine learning projects. Technical competencies in AI are further emphasized through makerspace programs.

The programs offered by public libraries are often implemented through partnerships with universities, non-profit organizations, private businesses, and government agencies. Universities provide not only expertise through lectures and seminars but also collaborate on projects to offer long-term courses and create art exhibitions. Similarly, non-profit organizations work with libraries to organize events on AI, including specific courses on AI ethics and programming. Industry leaders play an important role in sharing knowledge through lectures and seminars on the use of AI in different sectors. Although less frequently, government agencies also organize or co-sponsor AI classes in public libraries.



Overall, public libraries are increasingly disseminating information about AI and training patrons on AI-related skills through an array of programs and services. While these initiatives are contributing to raising awareness and providing capacity building, they are often organized as one-off events. Public libraries can increase their impact by implementing structured long-term programs dedicated to training on and engaging patrons with AI. By expanding AI-related programs and services, public libraries can empower communities for civic engagement in AI. In addition, public libraries could consider including tailored programs for marginalized communities, as they are disproportionately affected by the use of AI applications by government agencies and private sector organizations.

2.About the Project

The use of AI, understood as “a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments”[1] is growing rapidly in various sectors to assist or replace human actions and decision-making. It is expected to take over multiple tasks, resulting in apprehensions related to job displacement, privacy, and data bias. The concerns regarding data bias are already visible in financial services, housing, policing, and welfare services, where the use of AI can exacerbate structural inequality. To minimize the negative effects of AI, several national and international efforts have focused on governance standards for responsible AI. One of the ways to improve governance is through public participation across sectors to provide opportunities to include the expertise and experience of diverse stakeholders to better identify potential harms and improve data quality. Some efforts have been made to include the public by soliciting feedback, holding public consultations, and organizing external algorithmic audits. However, these participatory activities have faced several challenges, including the lack of spaces where this engagement can take place, and have often ignored the participation of marginalized populations, who are frequently not well represented in the design, development, and evaluation of AI systems.

The use of AI, understood as “a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations or decisions influencing real or virtual environments”[1]

Over the years, public libraries have evolved to be at the forefront of ensuring digital equity and inclusion, thus potentially becoming trusted learning spaces and community partners to lead critical and inclusive civic engagement in AI initiatives. Public libraries provide communities with access to cutting-edge technologies such as the Internet, makerspaces, interactive media, and virtual reality. They also provide training to learn specific technology tools and software that help individuals improve their digital skills. Moreover, public libraries are collaborative places for community members to exchange ideas and foster discussions through events and programs, promoting diversity by encouraging a comprehensive understanding of various perspectives. Leveraging existing strengths of public libraries can help to find ways to engage the public in reducing potential harms of AI and realize its benefits for all.

Our project “Empowering Communities: Public Libraries, Inclusive Civic Engagement and Artificial Intelligence” builds on the idea that public libraries can provide opportunities to catalyze critical and inclusive civic engagement in AI initiatives. Our project is guided by three key research questions:

- 1) What role may public libraries play in increasing knowledge about AI in the community?
- 2) How may public libraries foster inclusive civic engagement in AI initiatives?
- 3) What are the opportunities, threats, benefits, and challenges of public libraries leading inclusive civic engagement in AI initiatives?

This three-year project, funded by the Institute of Museum and Library Services (grant no. LG-252719-OLS) includes four case studies (document analysis, interviews, and focus groups) and a national survey, as well as the organization of two workshops with public libraries. Project results include one comprehensive report of current practices, four case studies reports, and one Practitioners’ Guide that will provide specific suggestions to public libraries on how to become active in helping their patrons to become more knowledgeable about AI and engage in AI initiatives [2].

This comprehensive report is the result of our first research activity aimed at identifying and assessing the role of public libraries in raising awareness about AI and fostering inclusive civic engagement in AI initiatives through a review of publicly available documents and public libraries’ websites.

[1] National Artificial Intelligence Initiative Act, [15 U.S. Code § 9401](#) (2020).

[2] We define an AI initiative as any project or strategy that involves the use of AI systems and that may harm or benefit its users. Some examples include, but are not limited to, the use of robots in public spaces, interaction with customer service chatbots, AI-based automated decision-making in social and health services, facial recognition identification, and voice-assisted smart phones.

3. Identification of Best Practices

This report provides an overview of the AI-related programs and services offered in public libraries throughout the United States. In order to identify such programs and services, we searched:

- Public documents: AI-related programs and events offered by libraries are available through reports and briefs published by library associations at the national and international levels.
- Library websites: Public libraries are offering ad-hoc classes on AI or organizing events on AI-related topics as part of their technology programs. Such detailed information is often not captured in the published reports. Therefore, we also searched the websites of public libraries to identify AI-related programs and services.

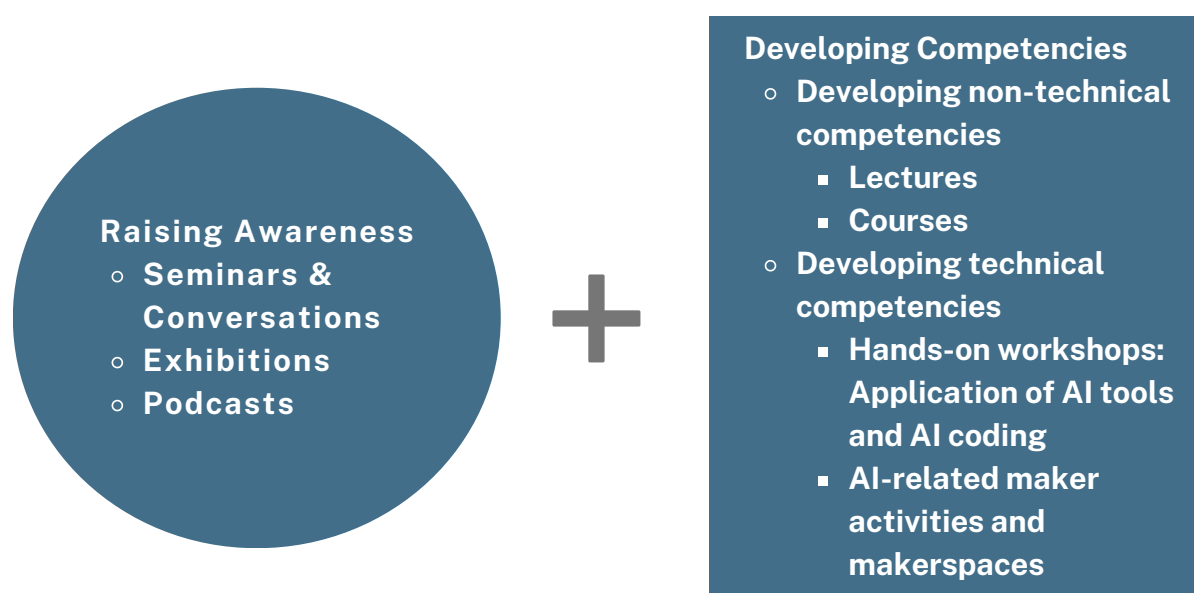
We collected data in three stages between November 2023 and February 2024 [3]. First, we reviewed publications from three key library associations: the American Library Association (ALA), the Urban Libraries Council (ULC), and the International Federation of Library Associations and Institutions (IFLA). This stage helped us to identify different types of programs offered by libraries as well as the programs that were recognized by library experts as novel initiatives. Second, we followed a systematic approach by searching the websites of the Urban Libraries Council (ULC) members. ULC is a partner in this project and its member list represents North America's leading public library systems, especially in urban areas. We scanned and reviewed the official website of each of ULC's 173 members to collect information on AI-related programs and services. Analyzing the websites of ULC members was a good strategy because urban libraries are more likely to have programs and services related to digital technologies in general and AI in particular.

Third, to close any gaps in our data collection, we also conducted a broader online search of publicly available information through search engines, using keywords identified from our data, such as "artificial intelligence"/"AI", "ChatGPT", and "machine learning", in combination with "public library" to find content from public reports, news articles, government documents, library associations, and library websites. Through these three primary data collection activities, we documented 91 AI-related events and activities conducted by public libraries in the United States and Canada (see Appendix A). This report provides a review of 80 AI-related programs in the United States.

[3] It is important to note that this report is based on publicly available information on library websites, published articles, and reports as of February 2024. It is possible that public libraries have introduced programs not captured in our review.

Once the different programs and services were identified, we analyzed them taking into account the following four questions: 1) What are the main types of AI programs/services offered in public libraries?, 2) What is the purpose of the AI programs/services and who are the intended users?, 3) What are the main components of the AI programs/services?, and 4) Do the AI programs/services include individuals from marginalized communities and address the potential negative effects of AI systems?

Our analysis resulted in the identification of two primary purposes of programs offered by public libraries: increasing awareness of AI and developing competencies in AI. Each of these purposes is accomplished through different types of programs, as shown below:



The next section highlights some of the innovative practices we identified in our review of different AI-related programs and services in public libraries. The section is organized according to the purposes and programs included in the previous list.

4. Main Findings: Purpose and Types of AI Programs and Services

Based on our review of AI-related programs and services offered by public libraries, two major purposes emerge from the mapping and reflections on these activities: raising awareness about AI and developing competencies related to AI. Events are normally tailored to either of these two distinct purposes, allowing public libraries to strategically leverage diverse practices to achieve specific goals.

4.1. Increasing Awareness about AI

Programs and services designed to raise awareness about AI among local communities primarily provide baseline knowledge and understanding of various AI issues in an accessible manner, including the potential negative impacts of AI, such as algorithmic bias and privacy risks. We classify such activities into seminars and conversations, AI-related exhibitions, and podcasts (see Figure 1). These activities informing communities about AI feature two prominent components. First, they primarily translate complex technical language into comprehensible information for non-technical citizens. This seems to serve as building blocks for enhancing AI literacy[4] on emerging issues. Second, given the recent surge in discussions and applications of generative AI, public libraries mirror this trend by organizing expert seminars on the use of generative AI tools. This clearly exemplifies how public libraries continually adapt their events to the rapidly changing world of technology.



[4] In this report, AI literacy is defined as “a set of competencies that enables individuals to critically evaluate AI technologies; communicate and collaborate effectively with AI; and use AI as a tool online, at home, and in the workplace” (Long & Magero, 2020). For more information: Long, D., & Magerko, B. (2020, April). What is AI literacy? Competencies and design considerations. In Proceedings of the 2020 CHI conference on human factors in computing systems (pp. 1-16).

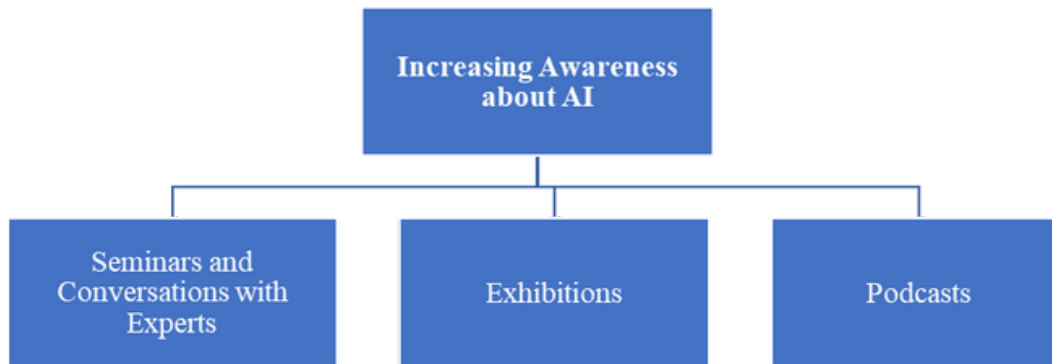


Figure 1: Programs offered by public libraries to increase awareness

4.1.1. Seminars and Conversations with Experts

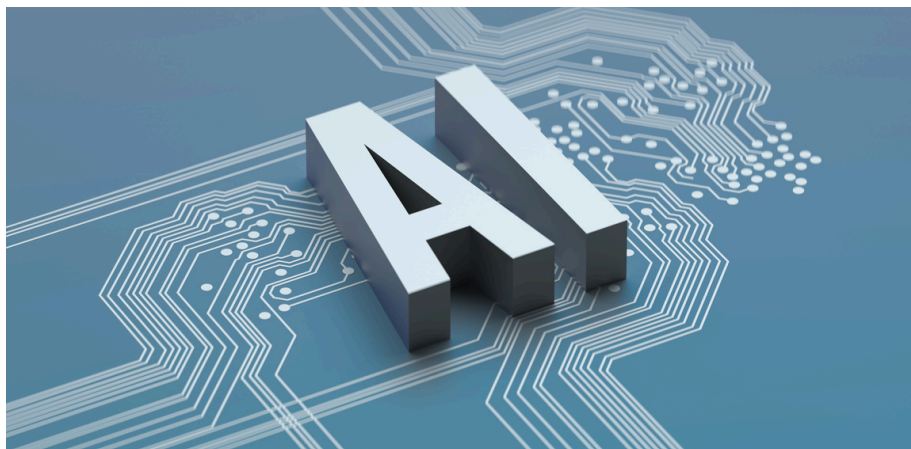
Public libraries host seminars with subject matter experts to encourage discussions on specific topics related to AI. For example, the New York Public Library hosted an interactive seminar for the general public in 2023, entitled [Building the World We Want: Artificial Intelligence and Global Governance](#), to examine the forms of global collaboration needed to address AI-related harms, such as inequality, privacy, and human rights. The seminar, organized in partnership with the Institute for Advanced Study and the AI Policy and Governance Working Group, included eminent experts from government, think tanks, journalism, and academia, featuring interactive conversations and idea exchanges. Similarly, other public libraries have hosted seminars aimed at discussing implications of AI in specific sectors. For instance, in 2023, the Fayetteville Public Library in Arizona held a seminar for teenagers and adults, named [Artificial Intelligence for Filmmakers](#). The event focused on the challenges and implications of AI in the creative industries, gathering insights from real-world practitioners, such as artists and filmmakers, to understand how AI-generated content could potentially devalue the rights and revenues of individuals dedicated to creative endeavors.

Public libraries are also taking advantage of experts at local universities and research institutes to organize discussions on AI. In November 2023, the Wright Memorial Public Library in Ohio hosted [Artificial Intelligence: A Conversation with the Experts](#) to foster broader discussions on AI and its impact on society. The panel included academic scholars from Wright State University, Riverside Research, University of Dayton, and the Airforce Institute of Technology. Prior to the event, participants were encouraged to submit questions via the library website. Similarly, the Palo Alto City Library in California hosted a conversation, named [The Boundaries of AI in Education](#), with an expert from San Jose State University. This conversational event discussed the use of AI in higher education, exploring some concerns related to AI such as fake citations and data bias in academic outputs.

Some libraries have invited industry experts to give special presentations on AI. For example, the East Baton Rouge Parish Library in Louisiana organized a talk on [*The Rise of AI: How Everyone Can Benefit*](#) to discuss implications of AI. The expert, a founder of an upskilling company that educates people on AI, discussed some real-world examples of AI and how community members can get involved in AI to advocate for its responsible use. In Massachusetts, the Cambridge Public Library invited an expert from Google as a discussant for the [*Is AI Laughing at Us*](#) event on artificial intelligence and art, and the benefits and drawbacks of new AI technologies, which also featured researchers from Harvard University.

Some libraries leverage multiple partnerships to organize programs. The Skokie Public Library in Illinois hosted [*Artificial Intelligence \(AI\): What Parents Need to Know*](#), a panel with experts from Clarkson University and the Evanston Township High School to discuss the fundamentals of AI, its risks and benefits, issues of academic integrity, and strategies to initiate conversations with children about AI. The event was also co-sponsored by Skokie Telecommunications and Technology Commission, responsible for advising the Village of Skokie on telecommunications and broader technology issues affecting the local community. Similarly, the Seattle Public Library in Washington collaborated with the University of Washington CoMotion Lab, the consultative startup Moonbeam, and the City of Seattle's Community Technology Advisory Board, to organize the Emerging Tech 101 program series, which hosted talks with startup founders and software professionals on various emerging technologies, such as AI, blockchain, and virtual reality.

Overall, public libraries host seminars and conversations related to AI to create a space for discussions on the present and future of AI. They play an important role in raising awareness about AI within communities by discussing the possibilities and implications of AI. Furthermore, the negative consequences and risks of AI are also often the focus of seminars and conversations, and this emphasis on potential harms of AI reflects another way of raising people's awareness.



4.1.2. Exhibitions

Exhibitions, which represent the least observed type of AI-related program in our data collection, are interactive and engaging activities that involve using AI technologies within the library space, aimed at sparking people's interest in AI. Generally, AI exhibitions blend art and interactive forms with AI technologies, enhancing people's interest in and caution about using AI. In addition, often, public libraries collaborate with external partners to curate AI exhibitions. For example, in collaboration with an illustrator, in 2019, the Cambridge Public Library in Massachusetts hosted one of the first interactive AI exhibitions named [*The Laughing Room*](#). Participants entered an artificially intelligent room that recorded and analyzed their conversations. If the algorithms considered the conversations were interesting enough, the room would generate laughing sounds depending on the context of the participants' conversation. In doing so, this exhibition was designed to prompt people to reconsider the impacts of constant surveillance and classifications made by AI in modern society.

AI exhibitions can also incorporate elements of games and adventure, which attract people's attention and interest in participating in these activities. In 2022, the St. Joseph County Public Library in Indiana hosted the [*Misinfo Day Escape Room*](#), a game-like exhibition where participants needed to solve puzzles through teamwork. The University of Washington's Center for an Informed Public, together with non-profit organizations, designed the game mainly for teenagers. Through this escape room, participants explored the dissemination of misinformation in the context of AI. They learned how to identify AI-generated photographs and deepfake videos. The event encouraged participants to reflect on emotional and cognitive biases, as well as informed them about how to respond to misinformation on social media.

4.1.3. Podcasts

Some public libraries have expanded their educational outreach by hosting podcasts aimed at enhancing users' understanding of AI. These podcasts are either specifically about topics related to AI or part of broader tech podcasts series. For example, in 2023, the Knox County Public Library in Indiana introduced a podcast series called [*Hitchhiker's Guide to the AI Galaxy*](#). Co-hosted with entrepreneurs from multiple industries, this series covered four primary topics related to AI, including the history and definition of AI, common uses of AI across both the private and the public sectors, ethical and regulatory issues in AI applications, and future scenarios of AI evolution. Similarly, the Broward County Library in Florida hosts the [*Tech Talk Weekly*](#), which offers a 20-minute update on weekly tech news, including updates on AI. They also have a [*Creation Station Monthly*](#), which did an hour-long episode on AI. Other libraries that have podcast episodes on AI include the District of Columbia Public Library with its special episode on [*ChatGPT*](#) and Los Angeles County Library's [*Aloud*](#) series with an episode on AI.

4.2. Developing Competencies in AI

Public libraries are also organizing events to build skills, knowledge, and capabilities related to AI by offering lectures, courses, hands-on workshops, coding classes, and maker kits (see Figure 2). Lectures and courses organized by libraries are often focused on providing foundational understanding of AI, including an overview of its main uses and applications. For advanced participants, public libraries organize programs that go beyond explaining the fundamentals of AI such as teaching how to apply AI tools to specific activities and learning to program components of AI such as machine learning.

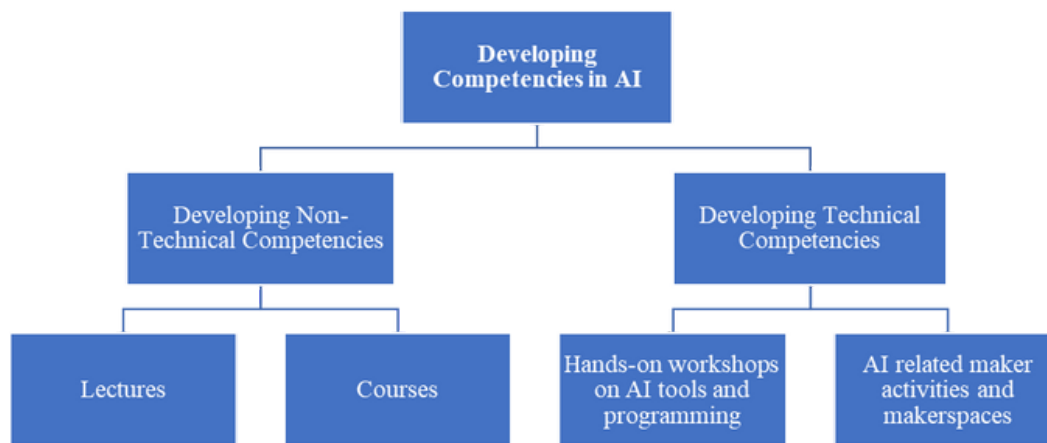


Figure 2: Programs offered by Public Libraries to Develop Competencies in AI

4.2.1. Developing Non-Technical Competencies through Lectures and Courses

4.2.1.1. Lectures

Public libraries frequently hold lectures and offer specific AI courses to provide community members opportunities to learn the fundamentals of AI and use the widely available AI tools such as ChatGPT. These courses are designed to share the basics of AI, but some public libraries offer specific courses related to societal implications of AI to introduce the community to some of the challenges associated with it. The duration of courses varies from a few hours in one day, when discussing specific topics, to several weeks when discussing about different aspects of AI. For example, courses on ChatGPT are organized for a few hours in a day to introduce the tool and give participants an opportunity to use it. Although these courses are open to the general public, sometimes the content is specifically designed for teenagers.

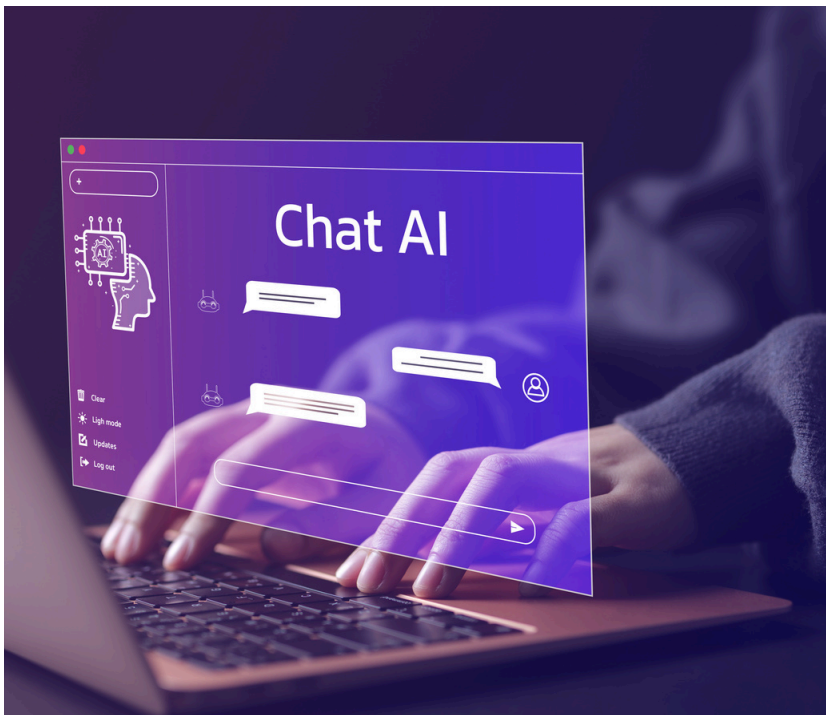
Collaborating with the Mayor’s Office of New Urban Mechanics in Boston, Massachusetts, the Boston Public Library hosted an interactive lecture in 2023, named [AI Decoded: Exploring Justice, Joy, and Responsibility](#). The purpose of this lecture was to familiarize teenagers with AI tools, help them connect AI with their interests, and talk about the role they can play in the future of AI. Specifically, participants explored several critical aspects of AI, including how to identify AI, the benefits and harms of AI, and the potential AI can bring to society in the future. Furthermore, it involved interactive communication between experts and youth participants. Similar courses devoted to demystifying AI were offered at the [Howard County Library System](#) in Maryland in 2023 and the [Scottsdale Public Library](#) in Arizona in 2019.

Some public libraries have structured a series of lectures focusing on the risks and responsibilities of AI. In 2022, the Queens Public Library partnered with the Center for Responsible AI at New York University to launch a five-week course named [We are AI](#). This program was designed as a primer on AI to empower citizens to advocate for policies that prevent some of its potential harms. The program helped the general public understand critical aspects of AI with the goal of explaining AI, discussing its social and ethical dimensions and empowering individuals to engage with the use and governance of AI. Specifically, the program consisted of five modules, covering the basics of AI technologies, how computers can learn from data, the algorithms of classifiers used for making predictions, the bias and ethical concerns of AI classifications, and some reflections on AI applications in real-world contexts. This program stood out in its efforts to highlight the social and ethical dimensions of AI as it used everyday images through comics and lay-friendly language to teach how algorithms and machine learning systems were already used in activities such as hiring and online ads.

4.2.1.2. Courses

Other libraries have also offered courses to train community members on AI. The program named [AI for Communities](#) held at both the San Mateo County Libraries in California and the Brooklyn Public Library in New York in 2023, offered a series of courses for participants to understand the ethical issues and risks associated with algorithms. Organized by Women in AI Ethics, a non-profit organization, the course was designed to make learning resources and information available to marginalized and impacted communities as AI presents many challenges to these communities. Specifically, the program in San Mateo County Libraries, delivered free individual classes to learn about AI, including Intro to AI & Algorithms, Intro to Generative AI and Keeping Yourself Safe in the AI Age. It prepared attendees to explore new opportunities in AI as well as to keep themselves safe from the harms of AI.

More recently, public libraries have started to organize events and courses around generative AI, especially ChatGPT. The course offerings on ChatGPT are geared towards introducing adults to the basics of AI as well as to applying generative AI for creative purposes. Particularly focusing on ChatGPT, the San José Public Library in California organized the [ABC of AI: Basics of Artificial Intelligence Technology](#) event to share knowledge on AI, demystify common terminologies related to machine learning and generative AI, as well as explaining the operational rationales behind ChatGPT applications. Other libraries that organized one-time classes on ChatGPT, include the Berkeley Public Library, also in California. The [ChatGPT and Me](#), a two-hour session, was organized in collaboration with the Center for Ethics, Science, and the Public in University of California Kavli to try out ChatGPT and DALL-E. The class included a discussion on new technologies and its governance, while encouraging participants to discuss their hopes and fears related to AI technology.



Using a different approach, in 2024, in Illinois, the Schaumburg Township District Library introduced a more comprehensive [ChatGPT & AI](#) course as part of the technology training program to enhance digital literacy for the general public. The course addressed the history of Natural Language Processing (NLP), how ChatGPT works, and what makes it unique. Additionally, the course included a discussion on

the benefits and potential concerns associated with using ChatGPT, as well as explored the real-world applications of ChatGPT and the future of AI. A few additional libraries, such as the Frisco Public Library in Texas, the Fulton County Library System in Georgia, and the New York Public Library, are also offering AI courses as part of their Coursera and LinkedIn Learning programs. Notably, the San Francisco Public Library organized a one-time event on ChatGPT courses for English as a Second Language (ESL) speakers offered in Chinese at their Chinatown branch.

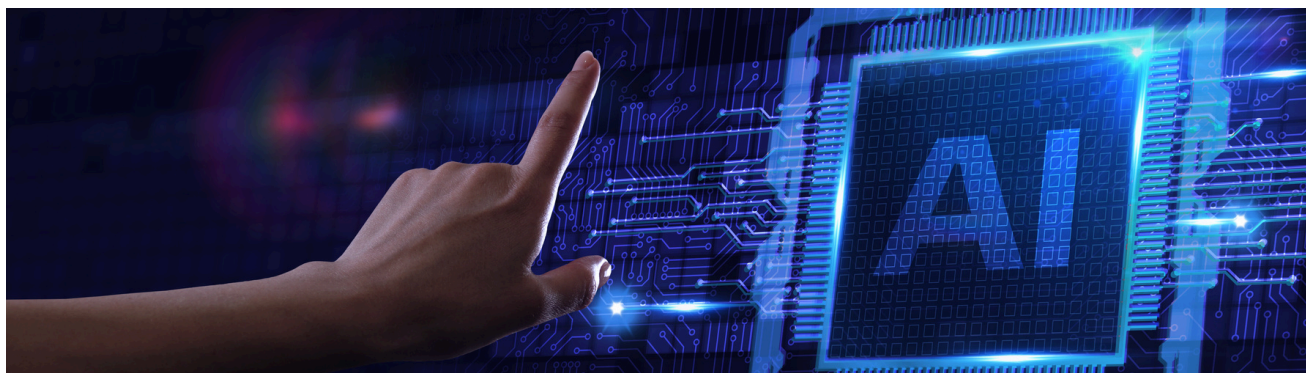
4.2.2. Developing Technical Competencies through Hands-on Workshops and Makerspaces

4.2.2.1. Hands-On Workshops on Applying AI Tools and Programming for AI

Hands-on workshops in public libraries cover a wide spectrum of topics and target audiences. With the primary purpose of cultivating participants' technical competencies, these workshops demonstrate the use of AI tools to participants for personal and business growth. Moreover, for teenagers and children, public libraries provide programming workshops, which are additional resources to learn relevant knowledge or skills after school. Through these AI hands-on workshops, public libraries can foster engagement with STEM-related education and innovation among younger generations.

Public libraries offer hands-on workshops on a wide range of topics, with special classes for adults, teens, and kids. One prominent theme is assisting participants in learning how to use AI to facilitate their personal career and interests. For example, the Brooklyn Public Library in New York organized a [*Using ChatGPT for Effective Resumes and Cover Letters*](#) session on using ChatGPT in job application processes. The session demonstrated how to use ChatGPT for building resumes and writing cover letters. The participants were encouraged to bring their resumes to use during the session. In California, the Contra Costa County Library organized a [*How to Digitize & Document Your Family History*](#) session to enable adults and seniors to preserve family history. The session, led by an expert in genealogy, taught how to create oral history using artificial intelligence, restore and scan photos, make a digital family history book, and tell a family story. Public libraries are also offering programs to train the public in the use of AI for content creation, such as podcasts and publishing. For instance, the San Mateo County Library, also in California, organized the [*Podcasting with ChatGPT*](#) workshop to demonstrate the use of AI chatbots to create content for podcasts. This one-and-a-half-hour workshop involved different activities to encourage the creative use of modern AI tools.

Several public libraries are also hosting workshops to boost creativity by using AI for music, art, and literature. In this respect, the St. Louis Public Library in Missouri targeted younger audiences, specifically high school and middle school students, in the program [*Get Creative Using Artificial Intelligence*](#), which focused on generating images and paintings with the help of AI technologies. The event was organized in partnership with experts from the Washington University's Brown School. Similarly, the San Mateo County Libraries in California held an event in 2023 named [*Hip-Hop Songwriting with ChatGPT*](#) that offered participants insights into using trending generative AI tools to create lyrics for songs. The class was open to adults over 18 years of age.



Public libraries can also directly provide computer programming courses that equip the public with technical knowledge to use and design AI programs on their own. Often, many of these hands-on workshops are targeted towards kids and teenagers. It is the case of the Basic Python Programming, a series composed of four weekly courses in 2021, offered by the Forsyth County Public Library in North Carolina. The courses were designed for children in grade 4 to grade 7 and introduced participating students to the basic operations and functions of Python, a powerful programming language often used in machine learning and other AI technologies. Similarly, in California, the Pasadena Public Library organized a machine learning and artificial intelligence session for kids during the [Computer Science Education Week](#). The session included a discussion on the benefits of AI, such as creating tools for people with disabilities and helping with environmental issues, but also outlined the risks of misinformation. It also included the [AI for Oceans](#) activity, a Code.org's resource for kids to learn about machine learning data and patterns. Kids also trained a robot to carry out certain tasks in the AI for Ocean activity game.

Public libraries also partner with local high schools to offer AI programming activities for young kids. In collaboration with a local high school, the St. Joseph County Public Library in Illinois hosted the [After School AI](#) program in 2023 to teach kids over the age of 8 years old artificial intelligence and machine learning through games and activities. Likewise, in 2023, the San José Public Library in California partnered with the Student Machine Learning Coalition, a chapter-based student-led organization, to offer a hands-on introductory workshop titled [Intro to AI & Machine Learning](#). This event provided opportunities for student participants to learn about artificial intelligence and build their own machine learning projects.

In addition, public libraries are also using robotics programs to provide opportunities to learn about artificial intelligence. Since 2018, The [Robo Dojo](#) project at the Palo Alto City Library in California invites beginners to get a taste of programming with robots. Anyone age 11 and older is invited to participate in a three-hour workshop to learn AI-related technologies and follow a step-by-step instruction to develop single purpose applications for Dewey, an intelligent robot.

Through these activities, participants learn about the use of speech recognition, natural language processing, and face recognition technologies in robots. It also offers young participants an opportunity to acquire coding skills to some extent. Similarly, the Coronado Public Library in California organized a hands-on workshop on AI for children ages 10 to 14 years, as part of the [*Tech Adventure Workshop Series*](#). The participants learned how AI is used in everyday gadgets and video games, with a focus on exploring robots and AI applications such as intelligent gaming, natural language processing, and machine learning.

4.2.2.2. AI-Related Maker Activities and Makerspaces

Public libraries are also leveraging existing maker programs and makerspaces to help the public learn and explore AI-related technologies. For example, the Dunedin Public Library in Florida held an AI maker event in 2023 named [*Tech Petting Zoo*](#). At the event, both technicians and non-technical citizens were invited to discuss and evaluate the use of advanced AI-related technologies in public libraries. By integrating various technologies, such as virtual reality, 3D printing, drones, programming, and AI, this event offered a public space to provide opportunities for hands-on experimentation with new technologies.

Public libraries also offer technology kits to foster creativity. Since 2019, the Frisco Public Library in Texas has provided [*The AI Maker Kits*](#) that package up several AI learning tools for patrons to borrow. Each kit contains step-by-step instructions to guide borrowers on how to implement basic Python code to enhance the functionality of a smart speaker. The goal is to extend the accessibility of AI learning tools by enabling learning at home and serving as a starting point for entrepreneurs across all demographics. Through these efforts, the AI maker project aims to empower new AI learners in a more approachable manner.

Makerspaces in public libraries serve as additional venues for technical training. The configuration of makerspaces in these libraries typically encompasses a variety of technological infrastructures, including equipment for 3D printing and advanced computers for programming. Specifically, the makerspace at the Boston Public Library in Massachusetts, known as the [*Kirstein Business Library & Innovation Center*](#), provides AI-related innovative programs tailored for business startups. Although these makerspaces primarily focus on innovators and entrepreneurs, they act as platforms to reveal the transformative potential of AI in business development through collaboration among participants with diverse technical knowledge and expertise.

With the aim of building multiple competencies of citizens, maker activities and makerspaces represent a creative approach to introduce AI. Specifically, these AI-related maker activities or makerspaces do not necessarily provide a structured method for learning about AI technologies or designing AI applications; instead,

they offer spaces where multiple technologies are available and participants can freely interact to experiment, learn, and develop technological solutions. However, in the available cases, the number of makerspace practices for AI are limited. There remains considerable room for public libraries to discuss and implement more concrete applications of AI-related maker activities or AI-focused makerspaces.

5.Types of Partnerships in AI Programs

As several of the AI-related programs and services described above show, public libraries frequently collaborate with diverse organizations to provide AI programs, including: (1) universities, (2) non-profit organizations, (3) private businesses, and (4) government agencies. These partnerships primarily aim to organize joint events or bring experts together to share knowledge and insights, in person or online. Depending on the specific focus and objectives of AI initiatives, public libraries team up with different partners to organize and support events.

Considering the complexities associated with increasing the offering of AI-related programs and services, the resources and the technical skills and knowledge that might be needed, public libraries may find in external partners powerful allies.



5.1 Inviting Academic Experts from Universities for Lectures and Workshops

Public libraries partner with local universities and their associated research institutions across a range of activities. Faculty members with AI expertise are invited to speak at events on topics related to AI. For example, the Cuyahoga County Public Library in Ohio invited an educator from the local community college to present [*the history and impact of AI in our lives*](#). Academic experts also offer workshops on using AI for creative purposes. For example, the Spokane Public Library in Washington hosted a workshop on [*AI and Creativity*](#) by a professor and artist from a local university. In partnership with universities, public libraries also host panel discussions with the general public in person or online, such as the Wright Memorial Public Library, which organized a discussion with researchers from local institutions to discuss AI and its impacts on society.

5.2 Collaborating with University Research Centers on AI programs

A few public libraries have introduced specific collaborative projects with university research centers to inform and educate the general public about AI. For example, the New York University Tandon Center for Responsible AI partnered with Queens Public Library to launch a five-week course called [We are AI](#) to inform citizens of AI technologies and empower them to advocate for AI policies. Another similar example of collaboration on ethics of AI was observed between Berkley Public Library and Kaveli Center for Ethics, Science and the Public at the University of California, Berkeley.

5.3 Partnering with Non-Profit Organizations for AI Programs

In collaboration with public libraries, non-profit organizations organize classes and workshops to raise awareness and facilitate thoughtful discussions on the responsible use of AI. Some of these non-profit organizations organize events focused on the ethics and risks of AI applications to empower marginalized communities. Examples of such organizations include Women in AI Ethics and MozAIrt, both focusing on including girls/women and underrepresented minorities in AI and Computer Science for inclusive tech. These organizations offered courses in multiple public libraries in California and New York to educate people about ethical and societal impacts of AI. Public libraries mostly collaborate with these non-profit organizations on lectures and hands-on workshops, incorporating a broader engagement with AI among different socio-demographic groups and diverse stakeholders.

Partnerships with student-led clubs from high schools are prevalent for organizing coding sessions to learn about AI. For example, the Library of the Chathams in New Jersey collaborated with the CS Base, a Chatham local organization of high school students and graduates, to offer an [AI Workshop](#) focusing on how to automatically compose emails, design images, and generate PowerPoint presentations using AI. Similarly, in collaboration with students in the local high school, the [After School AI](#) in the St. Joseph County Public Library in Indiana is designed to introduce basic AI knowledge to elementary schools in the Penn-Harris-Madison School district.

In an effort to introduce AI to the community, public libraries are also utilizing resources designed and created by non-profit organizations. When it comes to classes for kids, AI resources developed by code.org are highly sought after by public libraries. The [AI for Oceans](#), an animated game, engages kids ages 8 and above to learn about AI and machine learning, while exploring issues related to data and ethics.

5.4 Inviting Industry Experts

Entrepreneurs and industry experts from private businesses constitute another valuable resource for public libraries seeking technical knowledge and practical advice. In lectures and workshops focused on business development, industry leaders and start-up founders are often invited to share insights on AI products and trends within the industry. Some examples of such partnerships include inviting a start-up founder to the Seattle Public Library's Tech Talk 101 series and a technical director of a company to the Wisconsin's Madison Public Library's event on ChatGPT. Partnerships with entrepreneurs and innovators from the private sector contribute to makerspaces in public libraries, since sometimes they donate equipment or lead maker-related programs and services.

5.5 Teaming Up with Government Agencies

Interestingly, public libraries do not seem to collaborate with government agencies for AI-related programs and services. One of the few but prominent examples of a partnership with a government agency can be found in Boston, Massachusetts. The Mayor's Office of New Urban Mechanics, which works on civic research and design, organized the [*AI Decoded Workshop*](#) with the Boston Public Library for teens to learn about AI tools and how they are shaping the future. Government agencies are also sponsoring AI programs. For example, in the Skokie Public Library in Illinois, the Skokie Telecommunications and Technology (STAT) Commission, co-sponsored an event on informing parents about guiding their children through the AI landscape. In addition to other duties, the STAT commission is responsible for promoting technology education for the community.

6. Conclusion

The study of AI-related programs and services offered by public libraries reveals that they are timidly starting to increase their offerings of this type of programs and services. In doing so, they are mainly focusing on organizing one-time events that do not seem to be sustainable over time. In this respect, it seems clear that they are aware of the importance to embrace AI but are still experimenting with different programs and services. In addition, our review of AI-related programs and services provides evidence for three conclusions. First, public libraries are already playing a role in promoting civic engagement in AI initiatives by raising awareness about AI and building technical and non-technical competencies in AI. Previous research in different domains shows that information and knowledge are key to promote participation. By enabling the public to become familiar with AI and use AI, public libraries are facilitating the first step for informed civic engagement.



Second, existing programs and services reveal gaps in terms of inclusion and representativeness. Although most events are open to the general public, most programs do not have a special emphasis on marginalized communities and vulnerable populations, which are typically the most affected by AI initiatives. The absence of a specific focus on marginalized communities may therefore lead to an imbalanced access to information and technical skills that may eventually limit civic engagement. Given that public libraries play a vital role in bridging the digital gaps between the haves and the have-nots, they could expand the role they play and invest more in creating trusted spaces for these communities to learn about AI, voice their concerns, and find support to participate in AI initiatives, particularly for marginalized groups.

Third, despite the important role public libraries play in raising awareness about AI and building competencies, there is still room to enrich this role and actively promote participation and civic engagement in AI initiatives. As they have done in the past, when supporting open government projects or participating in the development of smart cities and communities, public libraries can provide the community with trusted physical (and also virtual) environments in which civic engagement around AI may take place. They can also enhance the culture of collaboration and inclusiveness in relation to AI initiatives by partnering with diverse organizations to bring essential resources and supplement the AI-related knowledge that library staff may lack. Such activities can help libraries increase engagement and interaction among public, private, and civic organizations, as well as individuals, around the use AI in their communities.

Based on our review of current practices within public libraries in the US, we offer the following recommendations to facilitate the design of AI-related programs and services for the community. First, public libraries can design programs aimed at different age groups to increase general awareness and develop specialized skills about AI. Depending on the objective of the programs, public libraries can consider hosting a one-off seminar on AI to share expert knowledge or offer a month-long course on AI to develop specialized skills to use AI tools. Children can also learn about AI through games that introduce them to the concept of machine learning in

a fun and engaging way. Second, given the specialized skills and knowledge often associated with AI, public libraries can consider partnering with local tech start-ups and non-profit organizations engaged in AI to bring speakers, resources and even funding for AI. Organizations, such as Women in AI Ethics, support organizations by offering AI programs to communities through public libraries. Third, to fully empower communities, public libraries should prioritize addressing the needs of marginalized groups, who are more susceptible to the negative impacts of AI technologies. This includes raising awareness about the biases inherent in AI and making AI resources more accessible to certain groups such as senior citizens, ESL speakers, and others who may not be well-versed in new technologies. Libraries can host targeted events and workshops at branches located in areas with higher population of specific groups, ensuring that everyone has the opportunity to benefit from and understand AI.



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