Technology Notes – May 2025

The rise of Artificial Intelligence

In March, I attended the Computers in Libraries 2025 Conference. The main theme of the entire conference was AI, its rise, and how it has become increasingly integrated into our daily lives. From a library perspective, many of the speakers compared AI and its eventual effect on library functions to the early days of the internet. We are in a period now where AI technology is evolving rapidly. This means standards of use & rules are evolving rapidly as well.

It all started with digital assistants (Alexa, Siri, Google home). These assistants can utilize voice recognition and perform a web search for you on the fly, telling you their findings.

Around 2023 or so, this technology expanded into what is known as generative AI (Early incarnation of ChatGPT). Assistants with generative AI capabilities can give you web results while also generating data for you on their own. These AIs are continually "trained" with large amounts of data sets. The AI is always learning new information to provide better and more complete information for the user. Unfortunately, if you ask the AI for something that it does not know, it is common that it can give you fake/untrue results. These fake results are called hallucinations in the AI world. There are many tips and tricks to help prevent hallucinations.

The most current iteration is called Agentic AI. This does all the above, in addition to the ability to use chain-of-thought. This means that it can think for itself on the fly to refine your results. For example, it might say, "I see you are hearing a weird grinding noise coming from your Ford Bronco, can you tell me the vehicle's year, specific model, and where you think the sound may be originating from?"

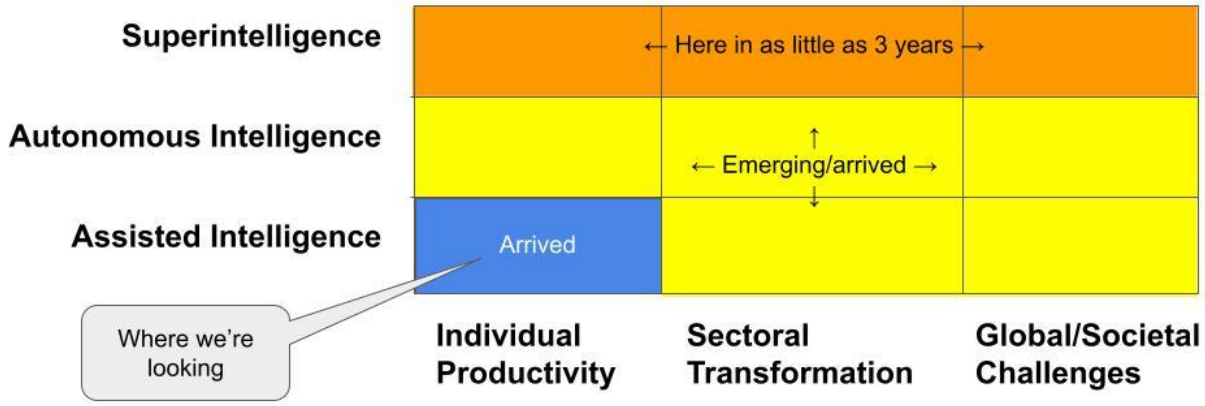
Computer programmers can now utilize Agentic AI to create AI bots called agents. These agents can autonomously carry out tasks with little human interaction. Below are a few examples of tasks that can be completed by agents:

- “My garden is 20 foot by 10 foot in Chicago with full sun. I want flowers”
  The AI orders the plants and hires the firm to come and plant them.

- “I bought a pair of shoes, and I want to return them”
  The AI reads your email to locate receipt, order confirmation for order number, fills out return form and schedules pickup.

- “I want to take a morning hike with a friend to see the Golden Gate Bridge”
  AI can search on Google to find hikes, map a route, check the sunrise time and send a calendar invite with details including what kind of clothing to wear.

Below is a chart that gives an idea of where we are now and where things are going in as little as 3 years from now. We have arrived in the first box of assisted intelligence and are expanding now into autonomous intelligence. The second attached chart expands on this.



How will all of this have an impact on libraries in the future?

Smart Cataloging & Search: AI-powered systems can improve metadata tagging and keyword associations, making it easier for users to find books, articles, and resources more quickly and accurately.

Personalized Recommendations: Libraries can use AI-driven recommendation engines to suggest books or materials based on a patron's reading history or interests, similar to how streaming services recommend movies.

Automated Assistance & Chatbots: AI-driven chatbots can provide instant answers to frequently asked questions, helping patrons with inquiries about operating hours, book availability, or general research topics without needing direct staff intervention.

Digital Archiving & Preservation: AI can assist in scanning, digitizing, and categorizing historical documents, manuscripts, and rare books, ensuring their preservation for future generations while improving accessibility.

Enhanced Accessibility Tools: AI-powered text-to-speech, language translation, and voice-recognition tools can make library content more accessible to people with disabilities or those who speak different languages.

Streamlined Operations & Management: Libraries can use AI for inventory management, overdue book reminders, and even predictive analytics to forecast trends in book borrowing and resource demand.

Interactive Learning Experiences: AI can power virtual assistants, interactive exhibits, and immersive learning programs, making libraries more engaging spaces for education and exploration.

Challenges & Goals

Technical Expertise & Staff Training: As new potential uses and applications are identified, we will make sure to dedicate sufficient time for staff training on our closed days.

Data Privacy & Security: AI systems often require access to user data for personalization, raising concerns about patron privacy and data security. We have created an AI policy that states that staff & patron personal data should never be used when working with AI. Our policy also states that staff may use AI for basic reference questions, but they MUST check the answers they receive with multiple sources to ensure accuracy.

Equity & Accessibility: AI implementation must ensure that services remain accessible to all patrons, including those with limited tech literacy or those who rely on physical materials rather than digital platforms. Some patrons may be skeptical or resistant to AI-driven changes, especially those who prefer traditional library experiences.

Bias & Fairness in AI Models: AI recommendations and cataloging must avoid bias, ensuring fair and accurate representation of diverse authors, cultures, and perspectives. AI recommendations and cataloging are not widely used yet, but when they are, this will be important to watch to make sure there is an equal balance.