

Editorial: Application of artificial intelligence in information services: part 1

The integration of artificial intelligence (AI) into library and information services is no longer a futuristic concept; it is a present-day reality driving a profound paradigm shift. This special issue of *The Electronic Library*, “Artificial Intelligence in Library and Information Services” (Issue 43.5), presents a collection of groundbreaking research that captures the multifaceted nature of this transformation, from technical breakthroughs to critical human and ethical considerations.

A primary theme is the automation and enhancement of core library operations. The study by Usta (2025) on “Transformer and statistical models for LCSH assignment” provides a groundbreaking comparative analysis. By leveraging a massive data set of over one million thesis titles and innovatively using synthetic data to mitigate class imbalance, the research demonstrates that transformer-based models like DeBERTa and ensemble approaches can achieve unprecedented accuracy in assigning Library of Congress Subject Headings. This work is a significant leap forward, offering a scalable, efficient solution to the labor-intensive process of subject indexing and setting a new benchmark for library automation projects.

Beyond internal workflows, AI is revolutionizing user-facing services. The research by Chang and Chen (2025) on AI-enhanced reference services in the Hakka Literary Museum presents a visionary, multi-tiered framework. It illustrates how technologies like Retrieval-Augmented Generation (RAG) and GraphRAG can be deployed to provide everything from simple directive answers to complex thematic explorations, creating a deeply engaging and personalized user experience. This case study is a powerful blueprint for special libraries and cultural institutions seeking to make their unique collections more accessible and intellectually navigable through AI.

However, the integration of AI is not merely a technical challenge; it is also a profound human and psychological one. The paper “Beyond the prompt: Exploring technostress, flow, and personality in generative AI behaviors” by Chong, Looi and Shahudin (2025) focuses on the user’s experience. Applying the Stimulus–Organism–Response model, it reveals the dual-edged nature of AI interactions: while they can create immersive “flow” states that encourage continuance, they can also induce “technostress” that prompts users to disengage. Crucially, the study finds that an individual’s “autotelic personality” can mitigate this stress, offering valuable insights for designing AI systems that are not only powerful but also psychologically sustainable and user-centric.

Furthermore, the pervasiveness of AI demands a critical lens to address new societal threats. The research by Yu and Shang (2025) on online disinformation identification confronts this challenge head-on. By constructing a robust, multidisciplinary framework of evaluation indicators, the authors demonstrate how popular large language models could be effectively guided to identify disinformation with significantly improved accuracy. This work positions libraries and information professionals as essential frontline defenders in the fight against digital misinformation, equipping them with evidence-based tools for a critical modern task.

As AI systems become more embedded in scholarly infrastructure, their ethical dimensions come to the fore. The grounded theory study by Adewojo (2025) on “Perspectives of Academic Librarians on Ethical Challenges of AI-Based Bibliometric Tools” provides a crucial perspective from the Global South. The research uncovers how librarians navigate tensions between the perceived accuracy of AI tools and their



professional accountability. The resulting theory of “contextual accountability” highlights librarians’ active role as ethical stewards, demanding transparency, advocating for consent and data ownership and building trust in the use of AI for research evaluation.

This evolving landscape necessitates a parallel evolution in professional education and a sober assessment of its impact on the workforce. The scoping review and syllabi analysis in “Moving towards critical AI literacy in LIS education” by Ferran Ferrer, Bridges, Lopezosa and Centelles Velilla (2025) sounds a crucial call to action. The research identifies a significant gap between the rapid advancement of AI and its integration into Library and Information Science curricula, noting a worrying disparity in global perspectives and a focus on technical skills over critical evaluation. The authors compellingly argue for the adoption of “critical AI literacy,” ensuring future information professionals are not just users of AI but also critical evaluators, ethical guides and managers of AI-mediated systems.

Finally, the human cost of this transition is brought into sharp relief by the study “The double-edged sword of AI: Librarians’ perceptions of job displacement and polarization” by Oladokun, Enakrire, Okai and Owolabi (2025). This empirical investigation from Nigeria reveals that librarians perceive AI as a significant threat to job security, particularly for lower-skilled staff, and that its adoption is creating job polarization. The study underscores the inadequacy of current institutional policies in mitigating these fears and calls for strategic interventions, such as reskilling programs and inclusive workforce transition plans, to ensure sustainability.

Collectively, the contributions in this special issue represent a field at a critical juncture. AI offers unmatched opportunities for improved efficiency, scalability and user engagement. Yet, these studies powerfully illustrate that this future implies not the replacement of human expertise, but its redefinition. Librarians and information scientists are poised to become architects of AI systems, curators of AI-generated content, educators in new information literacies and moral stewards of an increasingly complex information landscape. The journey forward requires a balanced focus on both the technical potential and the human realities of AI.

We invite readers to engage with these studies not as final answers, but as catalysts for conversation, innovation and critical reflection. The intelligent future of libraries is being written now, and it is through this kind of rigorous, thoughtful research that we can ensure it is a future that remains steadfastly committed to the values of equity, access and truth that have always been the foundation of our profession.

Yi Bu

Department of Information Management, Peking University, Shenzhen, China

Chei Sian Lee

*Wee Kim Wee School of Communication and Information,
Nanyang Technological University, Singapore, Singapore*

Di Wang

*School of Information Resource Management, Renmin University of China,
Beijing, China, and*

Atsuyuki Morishima

*Faculty of Library, Information and Media Science,
University of Tsukuba, Tsukuba, Japan*