



# Applications and Challenges for Archives and Documentary Heritage in the Age of AI: Some Reflections

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# Our Domains



## Public Libraries

- Network of 28 Public Libraries in the heart of housing estates
- Reading Programmes and Initiatives
- Programmes and Exhibitions targeted at Singapore communities



## National Library

- Preserves Singapore's Print and Literary Heritage, and Intellectual memory
- Legal Deposit (including electronic)
- Supports reference and research on Singapore and Southeast Asia
- Located in the CBD and arts & heritage district



## National Archives

- Custodian of Singapore's Collective Memory
- Responsible for Collection, Preservation and Management of Singapore's Public and Private Archival Records
- Promotes Public Interest in our Nation's History and Heritage

# Trends that Influence Archival Work

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1. Archives and Digital Influx
2. Archives and Access
3. Archives and Artificial Intelligence
4. Archives and Climate Change
5. Archives and Ageing population

# Archives and Digital Influx



Technological advances have led to **rapid growth of digital records** including structured data in systems, exchanges in collaborative platforms and social media, and complex formats.

“In 2018, the total amount of data created, captured and consumed in the world was 33 zettabytes (ZB) – the equivalent of 33 trillion gigabytes. This grew to 59ZB in 2020 and is predicted to reach a mind boggling 175ZB by 2025”.

<https://theconversation.com>

More and more **archival collections** are **digitised and new born-digital** records at **even larger scale are being submitted to archives**. Archives are rapidly developing new archival practices to manage the digital collections.



# Archives and Access

**Increased expectations around access** including demand for faster and seamless online access

- Shift towards self service and digital service
- Engagement in digital era – the ways we use archives to tell our stories has shifted with digital collections and social media
- Shift beyond own institutional collections and services to connecting with others (OneSearch, Trove, Europeana)



# Archives and Artificial Intelligence

- There is a growing exploration of integrating artificial intelligence into archival systems and practices, as manual processes are becoming increasingly less feasible.
- AI technologies have potential to automate parts of archival workflow and is being used for search and discovery



Archivists need to understand the risks it poses and yet put more trust in AI and machine learning to support their work



# Explore and Experiment with AI

## GROWING NUMBER OF USE CASES FOR AI

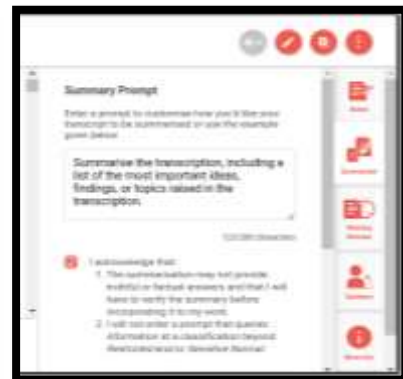
- Voice-to-Text Transcription
- Image Recognition
- Drafting Abstracts & Descriptions
- Text Editing
- Translation
- Subject Tagging
- Handwriting-to-Text Transcription
- Collection and Text Analytics
- Image-Video Analytics
- Generating visuals (images & videos)
- Research Assistant
- Training Assistant
- Writing Computer Code

## RAPID ADVANCEMENT IN GEN AI TECH IN 2025

2025's GenAIs (i) have long-term memory, (ii) are capable of complex multi-step reasoning, (iii) are multi-modal (iv) have emotional intelligence (v) have agentic capabilities (vi) are customisable (vii) are multi-lingual (viii) have vast trans-disciplinary & trans-cultural knowledge.



(Above): GenAI VTT,  
(Top-Right): Summarisation,  
(Bottom-Right): Subject Tagging



**THE PRIMARY BARRIERS TO AI ADOPTION TODAY  
STEM FROM CONCERNS AROUND CYBERSECURITY,  
INFORMATION CLASSIFICATION AND REGULATORY  
COMPLIANCE**



# Explore and Experiment with AI



Gen AI-powered ChatBooks with multi-modal content to promote discovery of history and related archival and library content

# Impact of AI on UNESCO Memory of the World Programme

# Memory of the World Programme

- Facilitate preservation of the world's documentary heritage, particularly in areas affected by conflict and/or natural disaster
- Enable universal access to documentary heritage worldwide
- Enhance public awareness about the significance of documentary heritage among the wider public
- International Advisory Committee – peak body advising UNESCO on MoW programme
  - Preservation Sub-Committee
  - Register Sub-Committee
  - Education and Research Sub-Committee

# UNESCO Memory of the World (MoW) Preservation Sub-Committee

1995 – 2019 as Sub-Committee on Technology, 2019 -



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Oversees and coordinates all activities related to the preservation of Documentary Heritage, including in digital form

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Reviews developments in preservation and provides advice on analogue and digital preservation matters in response to referrals or requests from IAC, its subsidiary bodies and the Secretariat, and from regional or national MoW committees

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Serves as an expert group responding to questions about storage and preservation of documents and their accessibility

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Recommends and undertakes preservation-related studies, produces publications and organises training events

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Engages professional communities to identify policy gaps and issues, and advises UNESCO's policy work in the preservation and accessibility of documentary heritage



Publication >

# Recommendation on the Ethics of Artificial Intelligence

UNESCO's first-ever global standard on AI ethics – the 'Recommendation on the Ethics of Artificial Intelligence', adopted in 2021, is applicable to all 194 member states of UNESCO.

16 May 2023 - Last update: 26 September 2024

<https://www.unesco.org/en/articles/recommendation-ethics-artificial-intelligence>



# AI Trends in DH Field

Recreate lost collections and buildings

- Virtual Record Treasury of Ireland
- Missions Connect



Virtual Record  
Treasury of Ireland  
[virtualtreasury.ie](http://virtualtreasury.ie)

From *The Wizard of Oz* to fully AI-generated movies



Transforming Mission Sites into  
healing Centres.

# UNESCO MoW Working Group on AI

Formed in May 2025 comprising MoW members, academics and AI practitioners

- a. Explore the impact of AI on documentary heritage
- b. Examine how the IAC and Sub-Committees could manage the way AI affect the MoW programme

# Some questions

1. Can AI-generated works be nominated as future documentary heritage?
2. Is current definition and scope of documentary heritage applicable to AI-generated works?
3. Is it important to differentiate between AI-generated and non-AI generated segments?
4. Do we require the nominator(s) to declare how AI was used in the generation of the work and which parts have used AI?
5. Will these necessitate changes in the nomination criteria or form for evaluation?

# Preservation concerns – preliminary findings

1. Is AI-generated work reproducible and preservable?
2. An AI-generated work cannot be reproduced if one of its two core elements - dataset(s) and algorithmic model(s) – does not exist
3. Even with the same dataset and model, a different AI-generated work can be created if the training method differs from one practitioner to another
4. Besides metadata, paradata needs to be considered for preservation of AI-generated works; guidelines on how to describe paradata of a nominated AI-generated work to demonstrate authenticity
5. Practicality of documenting and preserving datasets and models





Thank you

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