

# AI and cultural heritage: critical reflections and future pathways

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**In October 2025, the ClfA Information Management Special Interest Group (IMSIG) hosted a day of the ClfA Innovation Festival to showcase artificial intelligence (AI) in cultural heritage. It was a very popular and well-attended event, reflecting a strong appetite across the sector for considered, practice-led discussion around AI and its implications for heritage and information management.**



The *AI and Cultural Heritage: Critical Reflections and Future Pathways* session positioned AI not as a novelty, but as an increasingly implemented element of everyday heritage practice. Across papers and panel discussions, AI was consistently framed through familiar professional concerns: data quality, governance, ethics, transparency, skills and long-term sustainability.

A recording of the session can be accessed at:  
<https://www.archaeologists.net/events-training/events/innovation-festival>

### Morning session: case studies in practice

Holly Wright (ADS) opened with an introduction to the EU-funded COST Action Managing AI for Archaeology (MAIA). This international interdisciplinary network builds a shared community of practice around the responsible use of AI in archaeology, focusing on training data, bias and transparency. ArchAIDE and AUTOMATA were referenced as AI projects supporting ceramic and lithics identification, illustrating both the potential and the long-term sustainability challenges of AI in archaeological practice. Wright also highlighted the need for archaeologists to remain critically literate participants when it comes to AI-enabled workflows.

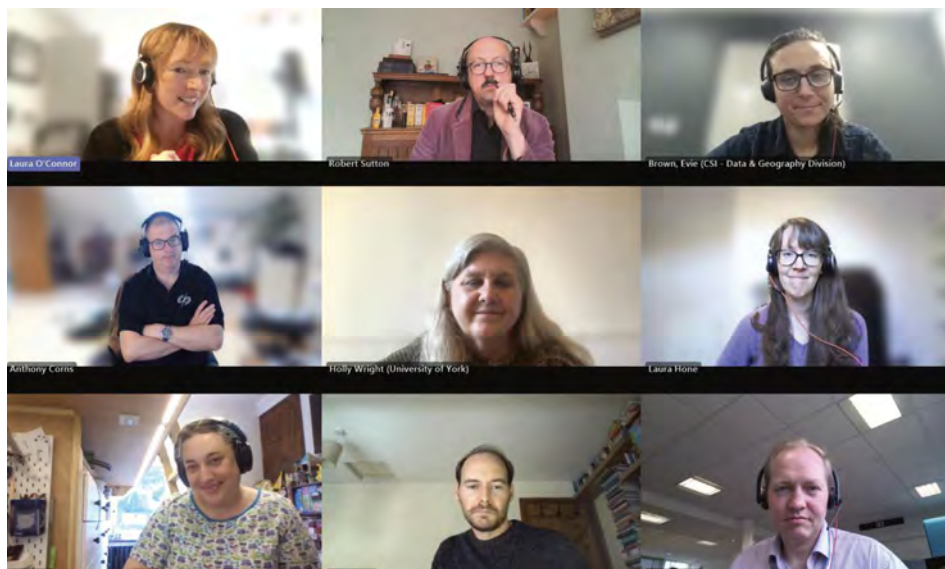
Anthony Corns (Discovery Programme) presented the *ADAF Tool* (Automated Detection of Archaeological Features), which uses machine learning to identify archaeological monuments in ALS (LiDAR) data. By training models on known features, large landscapes could be analysed efficiently. Again, human-led expert validation remains essential. Corns emphasised familiar information management challenges: inconsistent site survival, data quality and the principle that 'rubbish in, rubbish out' still applies.

Laura Hone (Historic Environment Scotland) demonstrated modelling bat roost suitability across HES sites using HDBSCAN clustering and ELAPID (a Python-based MaxEnt alternative). The tool analyses environmental and structural predictors to prioritise HES properties with limited survey evidence. The model performance aligned well with existing literature, producing spatial predictions and habitat suitability heat maps that were successfully integrated into operational workflows.

Evie Brown (Welsh Government) illustrated how AI has been used to create a dataset of historic woodland in Wales using 19th-century Ordnance Survey mapping. Through extensive manual labelling and model training involving nearly 600,000 generated images, AI technology enhanced identification of lost or altered woodland areas. While early results are promising, misclassification highlighted the need for iterative refinement and quality control.

Tom Elliott (Historic England) explored the use of machine learning in lithic sourcing for Mesolithic assemblages from the Lower Wye Valley and Welsh Marches. Using

*Session panel members Laura O'Connor (IMSIG Chair), Robert Sutton, Evie Brown, Anthony Corns, Holly Wright, Laura Hone, Jessica Irwin (IMSIG Committee member), Tom Elliott and Ben Wallace. Credit: Laura O'Connor*



geological sampling data and scientific analysis, the work demonstrated how AI can assist in recognising patterns within complex datasets, augmenting – but not replacing – specialist interpretation.

**Afternoon panel:**

**four themes**

The afternoon panel comprised the morning speakers plus Robert Sutton (Cotswold Archaeology) and Ben Wallace (Warwickshire County Council), to explore four key themes:

• **Opportunities:**

AI’s ability to uncover patterns within large, complex datasets to support prioritisation and decision-making. Panellists emphasised the value of iterative development – fail, learn, improve – alongside careful model training and appropriate tool selection.

• **Challenges:**

Data quality, bias and interpretation. Heritage datasets are often fragmented and incomplete, and panellists cautioned against outputs appearing authoritative without sufficient context. Validation, quality control, quality assurance, documentation and transparency were repeatedly advocated for.

• **Ethics and legal considerations:**

References were made to frameworks such as BRAID UK and emerging organisational guidance, including work underway at ADS. Key issues included environmental cost, data sovereignty, authorship, copyright and the need for clarity around AI-generated outputs. The importance of robust quality assurance and ethical governance was also clear.

• **Future directions:**

Skills and capacity building. AI literacy – encompassing data sourcing, ethics and knowledge building – was seen as essential. Panellists highlighted apprenticeships, mentoring, and evolving roles, noting that new professional roles will continue to emerge. Collaboration and shared standards were consistently identified as key to responsible AI adoption.

When asked to summarise their hopes or warnings for AI in cultural heritage, panellists urged the sector to ‘master but not trust’ AI, remain proactive and be ‘playful but mindful’.

<p style="font-size: 1.2em; margin: 0;">  <b>‘AI is a tool to try to master but not trust’</b></p>	<p style="font-size: 1.2em; margin: 0;">  <b>‘Awareness of possibilities but also risks’</b></p>
<p style="font-size: 1.2em; margin: 0;">  <i>‘Excited but cautious’</i></p>	<p style="font-size: 1.2em; margin: 0;">  <b>‘To be comfortable in its use’</b></p>
<p style="font-size: 1.2em; margin: 0;">  <b>‘Collaboration is key’</b></p>	<p style="font-size: 1.2em; margin: 0;">  <b>‘Be proactive, not reactive’</b></p>

*A summary of the panel’s concluding thoughts on their hopes and/or warnings for AI use and cultural heritage. These can be viewed in full via the You Tube session recording*

**Conclusion**

The session reinforced that AI is not a magical solution; it must be mindfully integrated, with a continued need for ‘human’ involvement. In terms of information management, AI is another layer against an already complex backdrop of data creation, interpretation and stewardship. Arguably, responsible use depends less on technology itself and more on professional judgement, governance, skills and collaboration.

IMSIG is well placed to lead on these discussions. By bringing practitioners together to share insights and build guiding principles, IMSIG can support informed engagement with AI’s practical, ethical and strategic challenges. As this event demonstrated, the use of AI technology is becoming more prevalent in heritage; the challenge now is to ensure it is used thoughtfully, transparently and in line with the values that underpin professionalism within our sector.



**Laura O’Connor**

Laura is Senior Digital Innovation Programme Officer at Historic Environment Scotland and Chair of ClfA’s Information Management Group. With 18+ years in archaeological survey and mapping, she has delivered major digital documentation and archaeological survey projects at sites including HS2, the Roman Baths, Skara Brae, Stirling Castle, Mousa Broch, and Crumlin Road Courthouse.