What Is Missing Matters:
Heritage Lens, Epistemic Responsibility, and the Boundaries of AI in Cultural Heritage Research

Larissa Terranova – CSA Circolo Amerindiano – Interactive Demonstration

This paper returns to Nottingham with an honest account of a system in progress. Heritage Lens, first presented at the 2025 Cultural Heritage Conference as a multimodal RAG prototype grounded in a single Olmec research thesis, has since been developed, tested across multiple academic contexts, and rigorously examined as much for its silences as for its outputs.

The system was built to address a real research problem: archaeological knowledge is scattered across formats, textual analysis, site photography, spatial data, and interpretive frameworks that rarely speak to one another in an accessible way. Applied to Olmec urbanisation in early Mesoamerica, Heritage Lens enables natural-language querying across textual and visual materials. The more significant development since 2025 has been architectural and ethical. The corpus has grown beyond the original thesis, making a latent question unavoidable: when multiple scholarly voices inhabit the same system, each carrying its own interpretive assumptions, how honestly should an AI tool report the resulting complexity?

This is the problem the Epistemic Agent is designed to address. Rather than producing confident synthesis from a richer but still incomplete corpus, it explicitly surfaces what cannot be retrieved, where confidence is limited, and where interpretive gaps or bias may be shaping the response. The Olmec case makes this a necessity rather than a design choice: a civilisation whose record is incomplete and contested demands that what is missing be treated as seriously as what is present.

The boundaries Heritage Lens encounters, around evidential gaps, around who produced the corpus it draws on, around the risks of AI-mediated decontextualisation, are the same boundaries that cultural heritage research has always had to negotiate. What this paper offers is a model for epistemically transparent heritage AI, one that makes those boundaries visible rather than smoothing them over and reflects honestly on what remains unresolved.

More about Larissa...

Larissa Terranova is a Digital Humanities researcher working at the intersection of AI ethics, cultural anthropology, and Mesoamerican archaeology. She is affiliated with the Centro Studi Americanistici "Circolo Amerindiano" (CSACA) in Perugia and holds a postgraduate qualification in Applied Generative AI from Johns Hopkins University. Her project Heritage Lens explores multimodal and epistemically transparent AI for cultural heritage research and has been presented at international venues including the University of Nottingham, the University of Nottingham Ningbo China, CSACA Perugia, and the UK-Ireland Digital Humanities Association Annual Event in Southampton. Heritage Lens was also selected as a finalist project at HackXelerator AR26.

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